How to develop an asset management policy, strategy and governance framework:

Set up a consistent approach to asset management in your municipality

Acknowledgements

About this guidebook

Local governments provide a diverse range of services that are essential to our communities' quality of life, like clean drinking water, transportation systems, waste management, drainage and flood protection, affordable housing, parks and recreation services. The services they deliver depend on physical infrastructure assets, like water treatment plants and wastewater retention ponds, roads, buses, civic facilities and emergency vehicles. A local government's infrastructure assets (along with those provided by community partners) are the foundation that enables our communities to thrive socially, economically, culturally and environmentally. The management of existing assets, planning for future assets and their connection with front-line municipal services must be a priority for local governments.

The Leadership in Asset Management Program (LAMP), a collaborative peer-learning program, brought together 17 municipalities from across Canada — 12 English-speaking and five French-speaking — to develop key asset management (AM) building blocks that underpin a well-governed asset management system:

- An asset management policy
- An asset management strategy, including a framework
- An asset management governance structure

These AM building blocks help strengthen infrastructure planning and decision-making processes, because they enable an organization-wide approach to asset management that supports consistent decision-making across all municipal departments and services. They provide overall direction that should be used to guide more detailed asset management planning and decision-making for each asset class owned or managed by a municipality.

The LAMP municipalities developed common language, guiding principles and templates for these elements. As they worked to put AM principles into words and create structures for AM management and governance, the municipalities also sought to lead innovation in AM. Through their collaboration they have identified ways to embed sustainability and resilience principles in corporate decision-making about infrastructure.

The following 17 municipalities participated in the program:[*]

British Columbia
City of Nanaimo (pop. 90,504)
City of Vancouver (pop. 631,486)
Township of Langley (pop. 117,285)
City of Revelstoke (pop. 6,719)

Alberta
City of Airdrie (pop. 61,581)
City of Edmonton (pop. 932,546)

Saskatchewan
City of Melville (pop. 4,562)

Ontario
City of North Grenville (pop. 16,451)
City of Ottawa (pop. 934,243)
City of Windsor (pop. 329,144)

Quebec
City of Bromont (pop. 9,041)
City of Joliette (pop. 20,484)
City of Plessisville (pop. 7,195)

New Brunswick
City of Dieppe (pop. 25,384)
City of Saint-Quentin (pop. 2,194)
City of Fredericton (pop. 58,220)

Nova Scotia
County of Kings (pop. 60,600)

The progress made by the LAMP municipalities offers valuable learning opportunities for all municipalities and public sector organizations that are focusing on asset management. This guidebook shares their knowledge.

> Although the 17 municipalities participating in LAMP had varying populations, municipal capacity, and asset management levels, they found common ground on language and content related to asset management policy, strategy and governance. The municipalities reached agreement on fundamental asset management and sustainability principles and processes.

This guidebook can help your municipality put these foundational elements of asset management in place. Each chapter includes guidance on how to develop them in your municipality, as well as real examples of how the LAMP municipalities have done it in theirs. By putting these elements in place, your municipality will be better placed to build a sustainable and resilient future for Canadians.

*Population statistics are sourced from 2016 Statistics Canada census data.

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Chapter 1: Asset management as a system

This chapter provides an introduction to the concept of asset management and describes at a high level what an asset management system looks like in a municipality. It also introduces the four key foundational elements required to develop and implement an asset management system:

- Asset management policy
- Asset management strategy
- Asset management framework
- Asset management governance structure

Guidance on how to develop these elements in your municipality can be found in chapters 2, 3 and 4.

In this chapter:

1.1 Introduction to municipal asset management

Local governments provide a wide range of services that are essential to our communities' quality of life, like clean drinking water, 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, wastewater retention ponds, roads, buses, buildings and emergency vehicles. Natural assets also support municipal service delivery. For example, wetlands can support flood control and filtration, while aquifers can provide safe drinking water to some communities, with minimal treatment requirements.

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, our local governments face some significant social, economic and environmental challenges that will 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 our communities move toward becoming sustainable and resilient.

> **Asset management (AM) is an integrated approach**, involving all municipal departments, to planning for and managing existing and new assets in order 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 thinking has evolved over the last 60 years and many definitions of AM have been used around the world. 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.[1] This modern view of AM features the following concepts:

1. **Assets exist to deliver value and services to the community.**

   In modern asset management literature, the assets exist to deliver value for customers and stakeholders. For municipalities, these customers and stakeholders are the community that the municipality serves — including residents, businesses and all other local stakeholders living or working in the jurisdiction. In addition, any regulatory bodies with a remit within the municipality should also be considered stakeholders.

2. **Assets must be managed over their full life cycle, considering both the current and future needs of the community.**

3. **Decision-making should be evidence-based and support the delivery of clearly defined levels of service and other performance measures.**

   Asset management involves the balancing of costs, opportunities and risks against the desired performance of assets, to achieve the municipality's objectives over the long term. This is achieved by using analytical approaches to manage the assets over the different stages of their life cycles, which can start with the conception of the need for the asset, and lasts through its creation, operation and maintenance, rehabilitation and disposal or decomissioning.

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1   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.

4. **AM is an ongoing practice within a municipality — one that both uses and influences many aspects of the municipality's strategic, planning and operational processes. It is not something that occurs at a fixed time in an annual cycle (it's about much more than just writing a periodic asset management plan) and it should be regarded as a key part of the municipality's culture.**

5. **People "do" AM, so good asset management relies on people's knowledge, competence, motivation and teamwork.**

6. **AM is multidisciplinary and involves the collaborative work of many people and groups within the municipality, including council, management, finance, planning, sustainability directors, service managers, public works, and operations and maintenance. To be effective, it also requires community engagement and input.**

1.1.1 Asset management as a business model and a management system

Asset management is a discipline that supports sustainable service delivery. Its many elements (called AM practices) lead to the sustainable creation, acquisition, maintenance, operation, rehabilitation and disposal of the assets required to deliver municipal services.

Did you know? One of the most compelling reasons for implementing asset management is its focus on evidence-based decision-making. It is required by legislation in some countries and in some Canadian jurisdictions.

The Province of Ontario first mandated municipalities to have AM plans in place to secure Gas Tax funding, and now other provinces are following suit.

The Government of Canada now requires all provinces to show that municipalities in their jurisdiction are progressing in AM in order for them to receive federal infrastructure dollars.

AM is a way of doing business, and a key part of a municipality's culture. AM practices need to be aligned with strategic objectives from executive management through to front-line service delivery.

To guide staff in delivering services, municipalities typically adopt policies and define management practices and processes. These policies, practices and processes are often referred to as management systems. A good example is a management system focused on safety or environmental management (e.g. ISO 14001). Similarly, effective AM also requires a management system to control and direct the way that AM is applied within a municipality.

When the global AM community refers to a "management system for asset management" they commonly use the term "the asset management system." Developing an AM system in your municipality is much like developing any other management system.[2] It will include a collection of interrelated objectives, policies, management practices, and processes, together with other documents and tools that you will use to manage the assets required to deliver services in your community.

> **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.**

Your AM system should work alongside other management systems in your municipality, such as financial management, health and safety management and others. These management systems should be aligned and integrated, where appropriate, to ensure a consistent approach to achieving your municipality's strategic objectives.

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2 ISO defines a management system as "a set of interrelated or interacting elements of an organization to establish policies and objectives and processes to achieve those objectives."

The illustration below provides an overview of the typical corporate functions of a municipality, the management practices used, and the key components of an AM system.

Figure 1.1: Key components of an asset management system

Corporate functions									
Urban planning	Engineering	Finance	Corporate administration	Public works	Parks, recreation and culture	Community engagement and comms	Fire rescue services	Bylaw enforcement services	Community economic development

Integrated (corporate) management practices						
Environmental management (regulatory, etc.)	Health and safety management	Risk management	Asset management	Information management (corporate and IT)	Financial management	Performance management

Asset management system							
Organizational context	Governance and leadership	Planning and decision-making	Operation (service delivery)	Performance and condition evaluations	Stakeholder engagement	Continuous improvement	Resources and support

1.1.2 Achieving strategic objectives through asset management

Municipalities are often faced with competing pressures and must frequently make tradeoffs between performance, cost and risk and between short- and long-term objectives. Deciding which tradeoffs to make to achieve the best outcome for the municipality as a whole is very challenging, because discrete functions in a municipality can often operate in their own silos, with little coordination with other functions.

Your municipality can address this problem by building a clear "line of sight" from your municipality's high-level objectives (Why are we here? Where do we want to be?) down to the asset management objectives that will drive front-line decisions and activities (What will I do today on this asset?). This line of sight shows how the various functions and individuals across the municipality fit into the bigger picture, and ensures they are working toward the same goals.

Many municipalities develop their asset management systems by bringing together engineering, operations, maintenance and finance to break down silos and promote more

collaboration. It is also vitally important that executive management and other municipal functions (such as urban planning and community engagement) are engaged to ensure that stakeholder needs and expectations are fully understood and reflected in defined objectives and associated decision-making processes.

Key insight

"I can't understate the importance of full system buy-in for asset management starting from the top down. Without buy-in, these documents become items on the shelf to collect dust. Every day your managers must be thinking about this policy and following the processes it sets up. If even one department does not buy in, the big picture is lost, and asset investment will no longer be based on data and the triple bottom line. I will show it to my managers on a regular basis to keep the process fresh."

Chris Bruce, Director of Community Services, City of Melville, SK

1.2 The hierarchy of an asset management system

There are several documents you can develop to ensure that your municipality is building an asset management system with a clear line of sight between your municipality's strategic objectives and its daily AM decisions. These documents form a hierarchy. From the highest level, working downwards, they are: organizational strategic plans, AM policy, AM strategy (which outlines the framework and governance structure for AM), and AM plans (AMPs).[3] This guidebook provides guidance on developing four key elements of your AM system — the AM policy, strategy, framework and governance structure.

Why do we exist? What are we trying to achieve as an organization?

1.2.2 Asset management policy

The asset management policy should spell out the underlying principles that your municipality intends to follow when using AM practices to meet the requirements of your municipality's strategic plan(s).

A council-adopted AM policy instructs the municipal administration to implement an AM system and provides guiding principles and expected outcomes for the system.

Figure 1.2: The hierarchy of an asset management system
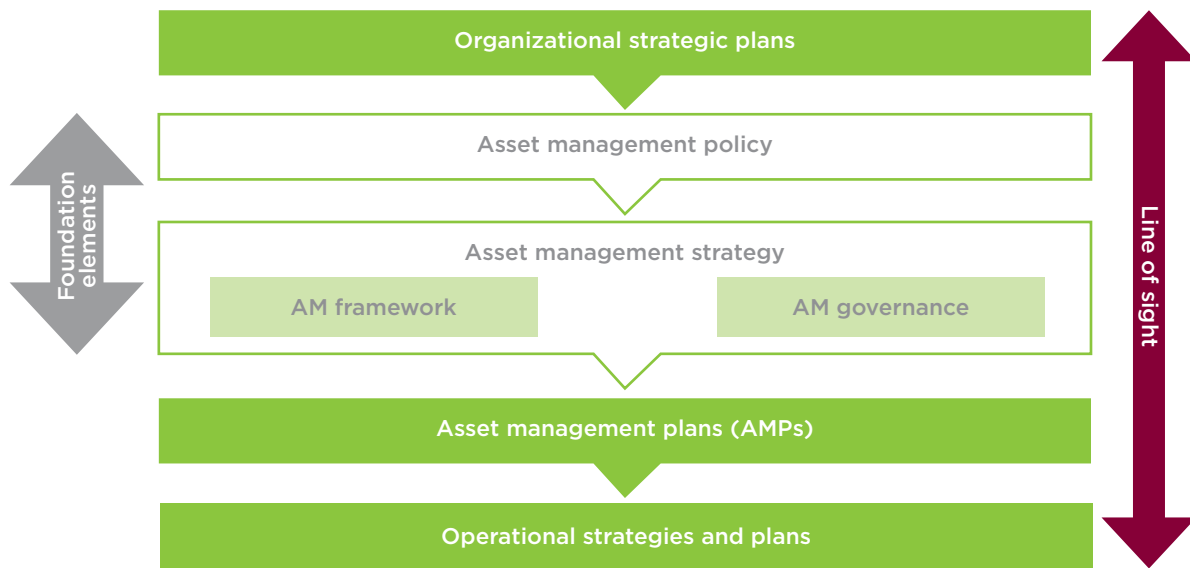
1.2.1 Municipal strategic plans

Your municipality's strategic plan sets out its high-level vision, mission and overarching strategic objectives. For some municipalities in Canada, this content is included in the official community plan (OCP). Others may have strategic objectives defined across several documents. It can be beneficial to think about which strategic documents in your municipality answer the following questions: Who are we?

The AM policy typically has four parts:

1. **Intent:** The policy document clearly articulates the intended outcomes of the policy.

2. **Scope:** The policy document describes the assets and services to which the policy applies.

3. **Principles:** The most important part of the policy, the statement of principles provides direction on applying AM within the municipality, and guidance on what the AM

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3   ISO 55000 promotes the use of this hierarchy.

system should cover. The principle statements should be aligned with the community vision and existing strategic plans to ensure the "line-of-sight" connections between the municipality's strategic direction and asset management efforts. The principles will directly influence staff decision-making.

4. **Responsibilities:** The policy document identifies who is responsible for: approving the AM policy; providing resources for implementation of the policy; defining community priorities and setting municipal priorities; and leading implementation of the AM policy.

Chapter 2 includes an explanation of each section in more detail and a template that your municipality can adapt to its own context.

1.2.3 Asset management strategy[4]

The asset management strategy should define how the municipality's context and strategic objectives translate to AM objectives (such as levels of service) and associated decision-making criteria.

> Asset management objectives should be SMART: Specific, Measurable, Achievable, Realistic and Time-bound

The AM strategy also defines how the AM system will implement the principles set out in the AM policy and support the delivery of the AM objectives.

Core elements of an AM strategy include:

1. Scope and applicability of the AM system (i.e. the assets and departments to which it applies).

2. Business context (including stakeholder needs and expectations)

3. AM decision-making approaches

4. AM objectives and performance targets

5. Key AM improvement initiatives

6. AM roles and responsibilities

7. Risks to the AM strategy, and monitoring and evaluation

A common approach is to have an overarching municipal AM strategy that may be further elaborated within more detailed departmental AM strategies. These departmental documents should align with the overarching municipal AM policy and strategy documents.

Developing a municipal AM strategy can be a challenging task for a municipality and will require some time and resources. The key is to start where you are, using available knowledge and data, and to use the development process to help identify gaps and areas for further improvement. The actions you identify to make improvements can then be captured in the roadmap / improvement plan section of your AM strategy.

> The asset management strategy will help your municipality make the practice of AM real and tangible, and is the basis for driving real improvements in evidence-based decision-making and more reliable financial planning and forecasts.

Practical tips

"The policy is more conceptual, and the strategy is how you put things into practice."
City of Airdrie, AB

"Write your AM strategy to make sure it's something you can execute. It becomes more prescriptive of what your policy really means."
City of Windsor, ON

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4   The asset management strategy can also be referred to as the Strategic Asset Management Plan (SAMP). The term "SAMP" was introduced by the ISO 55000 International Asset Management Standard Committee and many industries refer to the asset management strategy as a SAMP.

Chapter 3 gives guidance on how to develop an AM strategy, provides a template outlining the sections to include, and offers some suggested content for each section.

1.2.3.1 Asset management framework

An asset management framework describes, at a high level, the key practices, processes, tools and documents that make up the AM system and the functional relationships between those elements. It generally includes a reference diagram to illustrate how these pieces fit together.

For ease and simplicity, it is common for the AM framework to be included as part of the AM strategy. Chapter 3 provides some examples of AM frameworks, as well as guidance on how to develop your own municipality's AM framework, which should be customized to your municipal context.

1.2.3.2 Asset management governance structure

As municipalities seek to formalize and embed their asset management systems, it is important to ensure that AM practices and processes align with the municipality's strategic direction and are consistent across the municipality's various departments. It is common for municipalities to implement an AM governance structure that links various functions within the municipality and assigns accountabilities and responsibilities related to AM. By doing this, the municipality will help to ensure that its AM system supports consistent and coordinated decision-making, which in turn supports the delivery of strategic objectives.

The governance structure enables the municipality to:

> Formalize AM as a business model in the municipality.

> Make consistent, well-coordinated decisions aligned with strategic objectives.

> Promote and foster a culture that supports AM.

> Ensure that the appropriate functions and departments are involved in the development and implementation of the AM system.

> Guide managers in the implementation and application of the AM system.

> Maintain oversight and control of development, implementation and improvement of the AM system.

> Measure the ongoing contribution of the AM system to the municipality's goals, and adjust content and direction if necessary.

For ease and simplicity, it is common for AM governance to be described in the AM strategy document.

Chapter 4 provides guidance on developing a governance structure for AM.

The process of establishing a governance structure can create an entry point for discussion of sustainability, and break down silos between different departments.

1.2.4 Asset management plans (AMPs) and operations & maintenance plans (OMPs)

Although not covered within the content of this guidebook, it is important to understand how asset management plans (AMPs) and operations and maintenance plans connect with the higher-level parts of the AM system — the policy, strategy, framework and governance structure.

AMPs define the specific life cycle management activities and associated resources (capital and operational) needed to achieve levels of service and other asset management objectives, which, in turn, help achieve the municipality's strategic objectives. These specific activities should be planned and defined using the principles set out in the AM policy and through the application of the decision-making criteria and approaches set out in the AM strategy.

The AMP enables the municipality to articulate more clearly and consistently the various infrastructure-related challenges that need to be addressed and the associated expenditures that will be required in order to deliver value to the community. For this reason, some provincial funding applications now require municipalities to have an AMP in place.

The typical core content of a municipal AMP includes information on the state of the infrastructure, the desired levels of service, the life cycle management strategy and the financial strategy.

"line-of-sight" concept into your asset management system, your municipality will be better able to ensure more informed, consistent and defendable decisions on the assets and the services they provide.

Figure 1.3: Content of a typical asset management plan

State of infrastructure	• Asset types, inventory and valuation • Age and condition
Desired level of service	• Current service performance and trends • Targets
Life cycle management strategy	• Growth and enhancements • Refurbishment and renewal • Operations and maintenance
Financial strategy	• Infrastructure gap • Historic and projected expenditures • Funding resources
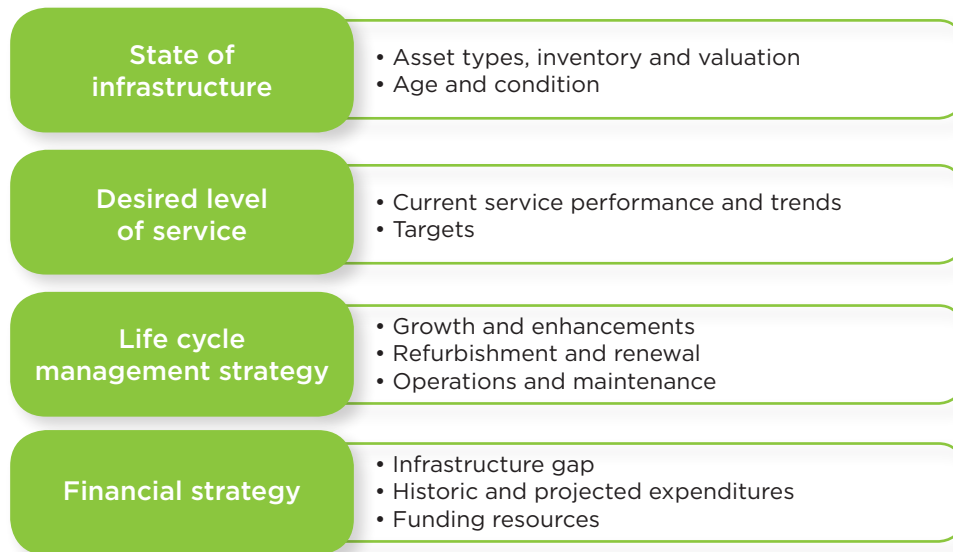
Asset management plans can be written for an entire asset portfolio, for a group of similar assets or for individual assets. Smaller municipalities sometimes choose to develop one overarching AMP. Larger municipalities with large and diverse asset portfolios tend to have several AMPs, which are typically developed by each asset-owning department or business unit within the municipality. Often, these departmental AMPs are then rolled up into what is commonly referred to as a corporate AMP.

For many municipalities, writing an AMP is actually the first step in their AM journey. Municipalities often derive significant benefits through the collaborative process required to develop the AMP. The very process of writing the AMP often highlights many issues that may subsequently need to be addressed through the AM policy and strategy.

The AM policy and AM strategy are higher-level documents that will guide staff in the development of AM plans and shape the eventual content of those plans. By embedding this

Asset management plans can be developed at any level in an organization, but for Canadian municipalities they are typically high-level documents that provide an overview of each asset class. Most municipalities own a variety of assets, including water, wastewater, roads, transit, parks, recreation, emergency services and many more. They can develop AMPs for each asset class or create one overall AMP for the municipality.

Ongoing operations and maintenance (O&M) activities are essential in managing municipal infrastructure assets and delivering services on a day-to-day basis. Operations and maintenance plans are required to ensure that these activities are conducted in a coordinated way that aligns with broader AM plans, appropriately manages risk, and promotes achievement of the overarching strategic objectives.

1.3 Integrating sustainability into asset management

Within a municipality, asset management and sustainability initiatives share strategic goals, influence the same business processes, and often engage the same people.

However, the implementation of AM to date has tended to be disconnected from the implementation of sustainability plans or frameworks. Municipalities advanced in one or the other may be common, but integrating both is much rarer. This lack of integration between asset management and sustainability planning often results in the following problems:

1. Planning and development decisions are made without sufficient knowledge of the long-term social, environmental and financial costs of different types of development (e.g. land use, zoning, transportation networks, etc.), or their resilience in the face of change.

2. AM practices do not sufficiently incorporate considerations related to sustainability or resilience in a systematic way (e.g. considering the carbon costs of different infrastructure choices, or formally incorporating risk assessment related to the impacts of climate change).

> **Sustainable development is meeting the needs of the present without compromising the ability of future generations to meet their own needs (Environment and Climate Change Canada).**

Your municipality's ability to meet its "sustainable communities" objectives will be limited if there is a disconnect between your strategic direction and the investment decisions that affect the asset base.

Although the rationale for integrated planning within a municipality is compelling, practices around the world vary, and are strongly linked to the requirements of local government legislation and funding mechanisms. Often, investments

Municipal example

To better integrate sustainability with asset management and infrastructure decision-making, the City of Windsor, ON, brought its sustainability lead onto the AM Steering Committee, and that person plays an active role in the formation of the AM system across the organization.

City of Windsor, ON

providing non-financial socio-cultural, economic or environmental benefits to communities are not accounted for in capital planning and prioritization in a structured way. The result is that these benefits don't feature reliably in municipal capital plans.

Below is a summary of important recommendations on how to better integrate asset management with sustainability goals.[5]

Recommendation 1: Make sustainability and resilience core themes in the strategic plan.
Sustainability and resilience should appear as core themes of the municipality's strategic plan. A clear strategic plan built around sustainable triple bottom line outcomes with clearly defined objectives gives

Municipal example

The Township of Langley, BC, has a sustainability framework that guides municipal decisions.

When the township developed its asset management policy, it linked the policy to its sustainability framework to ensure that its AM practices would be well-aligned with its sustainability objectives.

Township of Langley, BC

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5   These recommendations were developed from best practice research contracted by the 12 English LAMP municipalities. They're based on a synthesis of Canadian and international standards and municipal case studies.

unified direction for an AM system. Municipalities should take account of the municipality's sustainability principles or goals when developing their levels of service and other AM objectives. This will ensure that decisions about assets and service delivery reflect these goals.

Recommendation 2: Develop systems thinking and functional relationships.

"Systems thinking" and functional relationships are key to breaking down silos. High-performing organizations understand that assets are part of an integrated system. This requires that policies, procedures and planning assumptions are connected. Sustainable communities are a complex system with many interrelated components. A systems thinking approach is needed to set priorities and make good decisions. A cross-functional governance team will ensure integration across the municipality.

Municipal example

Municipal urban planning is often disconnected from asset management. The City of Fredericton, NB, wanted to make sure this didn't happen. While the finance department is technically accountable for AM, the planning department facilitates and prioritizes the annual and five-year capital budgets in coordination with all other departments.

City of Fredericton, NB

Recommendation 3: Use policy and strategic direction to create change across the municipality.

Strategic direction leads to organizational action and change. A deliberate change to a policy or strategy can lead to clearly identifiable changes at all levels of the municipality. These can be actual changes to the municipality's organizational structure or simply the better reflection of a principle. The latter can take many forms — for example, a new level of service, updates to design standards, or changes to contract documents.

A number of LAMP municipalities decided to state as part of their asset management policy that natural assets, including raw water reservoirs, aquifers, drainage channels and embankments, are to be treated and managed as assets for which the municipality is responsible. These assets will be subject to the same processes and care as other municipal assets.

Recommendation 4: Generate momentum around one or just a few themes.

Momentum can be generated around one or just a few themes or agendas. Having too many AM objectives that require change in the municipality can cause "paralysis" because too many initiatives are under way at once. The agenda for change can come from almost any part of the municipality, but normally an organization can only get behind a few focal points of action. Stretch goals and demonstration/pilot initiatives based on robust science are a good way of implementing innovative ideas on a small scale. Once these initiatives are successful, they can be rolled out more broadly in your municipality.

Practical tip

Piloting an asset management approach within one asset class can be a good way to test new thinking. Three LAMP municipalities, the Township of Langley, BC, the City of Nanaimo, BC, and the City of Fredericton, NB, are collaborating to develop levels of service for their parks & recreation assets. They will use the knowledge gained to develop or strengthen levels of service in other asset classes.

Township of Langley, BC; City of Nanaimo, BC; and City of Fredericton, NB

Recommendation 5: Take collective action to ensure success.

Collective action is critical for successful outcomes. Many organizations outside the municipality have a role to play in creating sustainable communities. Complementary programs of work are much more effective at

securing funding and outcomes than competing ones. Clearly defining relationships with strategic partners is an important part of an AM strategy.

Recommendation 6: Honour the socio-cultural expression of the community.

Understanding the socio-cultural aspects of your community is important for managing stakeholder relationships. For public planning to be more effective, municipalities should develop a framework for engaging the community and setting objectives. That framework should reflect the community's socio-cultural expression. It will inform dialogue, partnerships and exchange and encourage respect between different streams of government, business and community groups. Communicating with citizens in terms they can understand helps increase engagement and supports elected officials in making difficult choices.

Municipal example

In 2014, the City of Nanaimo, BC, completed a transportation master plan that included a significant amount of public consultation with stakeholders to understand what services they valued. This information helped the municipality set level of service targets and will provide investment direction over the next 25 years.

City of Nanaimo, BC

Recommendation 7: Develop a clear document hierarchy in the municipality.

Clear understanding of the document hierarchy in the municipality is critical for providing good direction. Purpose-driven documents that do not overlap bring clarity and unity to staff and council. It should therefore be clear how the municipality's sustainability strategy and objectives connect with its AM strategy and objectives.

> Several LAMP municipalities referenced their existing sustainability policies and/or strategies in their asset management policies and strategies, to make it clear to the reader and staff that these efforts were aligned in the organization.

Recommendation 8: Measure service delivery performance and report.

High-performing municipal governments recognize the need to measure service delivery and demonstrate its success to the community. Performance measurement and reporting is fundamental in guiding the continual improvement of your AM system.

1.4 Review and improvement

Continuous improvement is an underlying philosophy in asset management. Municipalities that seek opportunities to improve their AM system will ultimately deliver improved value to communities. It is important to realize that AM is not a self-contained or one-time project. It is a journey of continual evolution and business change. You don't need to have a perfect AM system from the start. Set realistic objectives and put in place an improvement plan to advance your AM system over time. Periodic reviews of effectiveness and alignment with strategic objectives will ensure that the AM system adapts to changing circumstances and remains effective in delivering required outcomes for the community.

The Plan-Do-Check-Act model known as the Deming Cycle is a straightforward continuous improvement methodology you can apply to multiple elements of your AM system. Management and improvement of the AM system should include a combination of three feedback processes:

1. Periodic formal management reviews of the AM system, including its effectiveness in delivering expected service performance and other outcomes.

2. Targeted audits of AM practices to ensure that processes are being followed and that tools and documents are being used correctly.

3. Ongoing solicitation and review of feedback from staff and stakeholders.

1.4.1 Timelines for review and improvement

A formal management review of the asset management system, including the AM policy and strategy, should be undertaken on a cycle that aligns with the municipal strategic planning cycle. This is commonly done every four years

1.5 Additional resources

Building Sustainable and Resilient Communities with Asset Management (2018)

Figure 1.4: The Deming Cycle of Continuous Improvement

to align with local elections. Reviewing your AM system in this way will ensure that your priorities, objectives, decision-making criteria and planning processes remain aligned with strategic objectives and effective in delivering value for the community.

Management reviews may be completed more frequently, if necessary, to address significant issues and changes as they arise.

Sustainability in Asset Management Best Practice Research Report (2016)

Chapter 2: How to develop an asset management policy

This chapter provides guidance and a benchmark for municipalities developing an asset management (AM) policy.

In this chapter:

2.1 Why develop an asset management policy

An asset management policy is a core requirement of a good practice AM system. The AM policy should be endorsed at the top level of the organization. An endorsed AM policy instructs the municipal administration to implement an AM system guided by a set of principles. These principles represent the underlying philosophies that will guide asset management decision-making. They will remain constant throughout council transitions and other organizational changes.

> **Why develop an asset management policy?** An AM policy has significant potential benefits for a municipality:
>
> • It signifies that, at the highest level, the municipality is committed to implementing AM as a business model and promoting continual improvement.
>
> • It builds awareness of what the municipality regards as good practice AM and sets strong direction and clear expectations.
>
> • It provides a strong mandate and catalyst for business improvement activities, where required.
>
> • It provides a basis to develop AM-related objectives that align with the municipality's overarching strategic objectives.

The AM policy typically has four parts:

Intent: The policy document clearly articulates the intended outcomes of the policy.

Scope: The policy document describes the assets and services to which the policy applies.

Principles: The most important part of the policy, the statement of principles, provides direction on applying AM within the municipality, and guidance on what the AM system should cover. The principle statements should be aligned with the community vision and existing strategic plans to ensure the "line-of-sight" connections between the municipality's strategic direction and asset management efforts (see Chapter 1 for an explanation of what "line of sight" means). The principles will directly influence staff decision-making across the whole municipality.

Responsibilities: The policy document identifies who is responsible for: approving the AM policy; providing resources for implementation of the policy; defining community priorities and setting municipal priorities; and leading implementation of the AM policy.

Your municipality will likely have templates and guidelines, a communication style and language that are used in all your policies. The principles and examples provided here offer guidance based on good practices. You should customize your own policy to suit your municipality's context.

> The most successful policy documents are simple, short and easy for any audience to digest.

2.2 Steps to developing an asset management policy

Below are some suggested steps to follow in developing your municipality's asset management policy.

Step 1:
Identify your top management or senior leadership sponsor. That person will need to propose the policy for endorsement and therefore must be fully aware of the content and endorse it. This will require their early involvement in the development process.

Step 2:
Agree on the scope of your policy. Will it apply to the whole municipality or just a selection of departments?

Step 3:
Draft the AM policy document. What AM principles will you expect your municipality to follow?

- This guidebook's template content can be customized and adapted to your organization.

- The AM policy should be high-level, clear and concise. A typical length is four to five pages. Details on how the organization will fulfill the policy are generally laid out in the AM strategy.

Step 4:
Review and refine your draft AM policy through a collaborative process with the key stakeholders. These may include:

- The policy and standards team, who can help ensure the policy's compliance with municipal requirements.

- Representatives from departments that have policies related to or aligned with aspects of the AM policy (e.g. finance, procurement, health and safety, environmental services, sustainability).

- The AM steering committee (if one exists) or a "network" of AM staff who can constructively critique the draft policy.

- The executive sponsor.

Step 5:
Present your policy to top management and senior leadership for sign-off and endorsement. This may require an explanation of the rationale behind the policy recommendations and the potential benefits to the municipality. Therefore, a number of consultations may be required before endorsement is achieved.

Step 6:
Communicate your policy to staff and use it to encourage the organization to adopt AM practices. Some municipalities, like the City of Windsor, ON, have developed a one-page summary of their policy, which they use for such communications.

Examples of policies developed by municipalities in FCM's Leadership in Asset Management Program (LAMP) are linked at the end of this chapter.

Insights from the LAMP municipalities

It typically takes municipalities anywhere from a few months to a couple of years to develop their AM policies and have them adopted by council.

"It's a good experience to develop the policy collaboratively. It adds value."

City of Airdrie, AB

"The level of effort isn't in writing the policy, but more on explaining to council what is in it and why."

City of Ottawa, ON

2.3 Contents of an asset management policy

2.3.1 Part One: Intent

The first paragraph of the asset management policy should articulate council and/or senior management commitment, intentions and high-level expectations related to AM.

Municipal example

Asset management is an integrated approach, involving all city departments, to realize value from existing and new assets. This Policy outlines the fundamental asset management principles that will be developed and implemented across the City and the Council's commitment to Asset Management.

City of Melville, SK, Asset Management Policy

An AM policy provides robust AM principles to focus the municipality on its long-term commitment to achieving its service delivery and other strategic objectives. Because of this, the policy should be in place over several council terms, and the content should be kept at a high level to ensure continuity of the fundamental principles in the policy.

LAMP municipalities recommend that organizations make it clear that their AM policy is essentially a statement of principles, as opposed to a transactional policy (such as an expense policy or procurement policy).

2.3.2 Part Two: Scope

The asset management policy should indicate the scope of services and associated assets covered by the AM principles. This scope may evolve over time, and any change will be captured in periodic updates to the AM policy.

It is best to avoid referring to Tangible Capital Assets (TCA), because the definition varies for each municipality and often doesn't relate to assets covered under the AM policy. When establishing the scope of the policy, take into account the following questions and considerations:

> What services and assets will be included in the scope of your AM policy? There are different municipal functions, departments and asset groups within your overall asset portfolio. The aim is to focus the policy on the services provided, and include the assets required to deliver those services. Some municipalities chose to use a table listing the asset classes,

Intent: Template of text to use

The City/Town of _____ provides a wide range of services to the community that require the ownership and responsible operation, maintenance and rehabilitation of physical assets including land, buildings, equipment, transportation, drainage, sewer and water infrastructure.

Asset Management (AM) is an integrated approach, involving all City/Town of _____ departments, to delivering value to the community through the effective management

of existing and new infrastructure assets. The intent is to maximize benefits, reduce risk 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.

This policy outlines the fundamental asset management principles to be implemented across the City/Town of _____.

(Please see Section 2.3.3 for template text for the principles statements.)

like the one in Table 1, below. Others use paragraphs to describe the scope.

▸ The policy should apply to both existing and new future assets.

▸ How will the policy apply to assets that are owned by other agencies, but operated and maintained by the municipality?

▸ How will the policy apply to assets that are owned by the municipality, but operated and maintained by external service providers?

▸ How will the policy apply to municipally owned or controlled corporations or subsidiaries?

▸ Will the policy include natural assets, such as land, drainage channels, rivers and aquifers? There is increasing recognition of the contribution that natural assets make to service delivery, but no standard approach for incorporating them formally into asset management planning. Some municipalities are taking stock of their natural assets and budgeting for the necessary protection and maintenance, while others are leveraging them to reduce the costs and risks of service delivery.

Scope: Template of text to use

The City/Town of _____ owns a wide range of asset types that deliver services to the people of _____. Each year the city/town may receive or construct new assets. In addition, the City/Town of _____ may rely on natural assets or other assets that it does not own, in order to deliver services. This asset management policy applies to the assets owned by the city/town. Where service provision is supported by other assets not owned by the city/town, we will work collaboratively with those asset owners and promote the principles outlined in this policy.

The City/Town of _____ recognizes the importance of natural assets and will include these in its inventories and asset management practices. Examples include water bodies, wetlands and wildlife corridors.

Table 1 summarizes the services that the City/Town of _____ provides, and gives examples of the asset groups and asset types owned by the city/town that support the delivery of those services.

Table 1: Example of assets included in the scope of an AM policy

Service provided to the community (not an exhaustive list)	Example of asset group (not an exhaustive list)	Examples of asset types (not an exhaustive list)
Potable water supply	Water infrastructure	Dams, reservoirs, pipes, valves natural assets
Wastewater collection and treatment	Sewer infrastructure	Pipes, lift stations, manholes, natural assets, treatment plants
Flood protection	Drainage infrastructure	Pipes, culverts, chambers, natural assets
Transportation	Transportation infrastructure	Roads, bridges, sidewalks, traffic signals, street lighting
Recreational parks	Parks infrastructure	Playfields, playgrounds, trails natural assets
Community facilities Civic facilities	Buildings	Civic offices, public works yard, fire and police buildings, parkades, recreational and cultural buildings
Emergency response	Vehicles	Fire trucks, heavy equipment, snow ploughs
Support for departments to serve the community	IT infrastructure	Hardware, SCADA, telemetry, communication equipment

2.3.3 Part Three: Principles

Statements of municipal asset management principles are of utmost importance in an asset management policy. These statements will define the high-level approach to AM and will directly influence staff decision-making throughout all levels of the organization.

> Municipalities involved in the Leadership in Asset Management Program agreed that the following principles (or some variation of them) should be included to ensure that AM decisions reflect a long-term approach and support municipalities in becoming more sustainable and resilient:
>
> • Service delivery to customers
>
> • Long-term sustainability and environmental adaptability
>
> • Holistic "big picture" approach
>
> • Fiscal responsibility and asset management decision-making
>
> • Innovation and continual improvement

Sound AM principles drive good practice decision-making approaches and promote the desired culture and behaviours, such as collaboration and a mindset of continual improvement. The principles shape the various practices and processes embedded within the AM system and also the required skills and competencies of AM staff.

Municipalities must consider how to integrate sustainability considerations within the AM policy. A first step is to review sustainability policies and other municipal documentation and use that language to shape the relevant principles with the AM policy. If no such material exists, you can research and customize examples from other municipalities. The Glossary of Terms section in the appendix of this guidebook includes some commonly used definitions of sustainability.

Below are the policy statements developed by the LAMP municipalities. The statements will resonate differently with each municipality. It is up to your municipal staff to discuss, debate and decide which principles are appropriate for your municipality.

Principle: Service delivery to customers

Service delivery is the key purpose of municipal assets. Decision-making should be focused on delivering defined levels of service that reflect customer expectations and balance risk and affordability.

Template of text to use

The municipality will clearly define level of service objectives that balance community expectations and regulatory requirements with risk, affordability and available resources, and will do the following:

- Manage assets appropriately in order to efficiently and effectively deliver the defined levels of service.
- Monitor and periodically review level of service objectives to ensure that they meet or support community and council expectations and other strategic objectives.

The municipality will ensure transparency and accountability to the community on service delivery. This will include regular communications to council to share information on service performance as well as technical information such as asset condition.

The municipality will comply with all relevant legislative, regulatory and statutory requirements.

The City of Dieppe, NB, took its policy a step further by stating it will "strive, wherever possible, to go beyond minimal legislated solutions to improve municipal assets' resilience to social, environmental and economic changes."

The municipality will implement an AM system that incorporates risk-based and information-driven decision-making frameworks that appropriately consider the potential impacts of asset failure on ongoing service delivery.

The municipality will ensure that decisions regarding the need for new assets are made with appropriate due diligence; and that these needs are evaluated with a focus on service delivery to the community, and supported with a valid business case that articulates costs and benefits.

The municipality will prioritize and direct resources and expenditure in order to deliver levels of service and other community benefits at an acceptable level of risk.

Principle: Long-term sustainability and resilience

Services and infrastructure assets should be socio-culturally, environmentally and economically sustainable over the long term. Achieving this involves long-term planning that incorporates triple bottom line considerations, climate change awareness, and the development of resilience.

Municipal example

Sustainability & Risk Considerations — the Township shall: (a) consider investment decisions using triple bottom line sustainability criteria with respect to economic, environmental and social outcomes, (b) develop business case solutions that aim to balance risks and whole life costs while satisfying agreed upon levels of service.

Township of Langley, BC, Asset Management Policy

Template of text to use

The municipality's asset management decision-making will consider the needs of both current and future generations and the potential challenges associated with changing community demographics and expectations related to service delivery, as well as potential modifications to legislative requirements.

The municipality's asset management decision-making will consider the potential effects of climate change and other environmental changes, and how the increased severity and frequency of climatic events may directly affect levels of service. Where appropriate, the municipality will adopt a proactive approach to mitigating the potential impacts of climate change.

The municipality will consider socio-cultural, environmental and economic factors and implications when making and implementing asset management decisions.

Principle: Holistic "big picture" approach

Encouraging holistic thinking and collaborative asset management decision-making across departments and disciplines will help municipalities realize maximum value for the communities they serve.

Template of text to use

To support asset management decision-making, the municipality will take steps to connect the appropriate departments, functions and support activities in order to build effective working relationships and encourage information-sharing. These departments and functions include planning, engineering, operations, maintenance, finance and other strategic planning functions such as sustainability.

Asset management decision-making will drive optimum value for the community by focusing on the "big picture." The municipality will therefore ensure that decisions are made collaboratively and consider all life-cycle stages and the inter-relationships between asset performance, operational performance and overall service performance. Decision-making will also recognize the interconnected nature of asset systems and how decisions about one set of assets may potentially interact with or affect assets controlled by other departments or functions.

Municipal examples

Integrated Decision Making — The City will:

a. integrate the decision-making process for assets to include corporate, financial, business, land-use, community, environmental, social, technical and budgetary plans and perspectives; and

b. consider assets in a larger service delivery context not just as an isolated asset.

City of Revelstoke, BC, Asset Management Policy

Integrated and Systematic Approach — the Township shall:

a. consider assets in their value context, in terms of their interrelationships and interdependencies, as opposed to optimizing of individual assets in isolation.

b. implement and sustain asset management principles and practices across all departments and service areas within the organization by adopting a formal, consistent, and repeatable approach to the management of its assets that will ensure services are provided in the most efficient and effective manner.

Township of Langley, BC, Asset Management Policy

Principle: Fiscal responsibility and asset management decision-making

Financial challenges and constraints are a reality for municipalities, and robust asset management decision-making processes are required to make the best use of available funds to deliver services to communities.

Municipal example

The approach to service delivery is financially achievable over the long term, is not wasteful of resources, minimizes or reverses environmental damage, and continuously improves social and inter-generational equality. The approach for estimating asset investment need and developing AM strategies is based on achieving triple-bottom-line outcomes over the long term, and considers the full lifecycle of assets.

City of Revelstoke, BC, Strategic Asset Management Plan

Template of text to use

The municipality will develop and maintain appropriate plans for infrastructure renewal, for the purchase or construction of new infrastructure and for the decommissioning of redundant infrastructure. This includes:

- Developing long-term projections of investment needs.
- Applying rigorous analysis, including consideration of risk, to identify short-term investment needs.
- Implementing processes to ensure that proposed investment plans address needs efficiently and effectively.
- Implementing processes to address the operational budget implications of capital investments.
- Exploring efficiency opportunities where appropriate, including new technologies.
- Analyzing investment plans and associated funding requirements and putting in place mechanisms to ensure long-term financial sustainability.

The municipality will evaluate relevant asset investment decisions based on consideration of the whole-life costs associated with managing those assets through their entire life cycle.

The municipality will develop prioritized capital investment plans that reflect community and stakeholder expectations with regard to level of service and other strategic objectives. The municipality will evaluate the magnitude, nature and overall balance of investment plans considering the aggregate value derived for the community, affordability, willingness to pay and intergenerational equity.

Principle: Innovation and continual improvement

A culture of continual improvement will help municipalities increase their asset management maturity and deliver services to the community and stakeholders more effectively and efficiently.

2.3.4 Part Four: Responsibilities for leading implementation

The application of asset management is the responsibility of a wide range of people throughout the municipality; however, specific people will be responsible for approving the AM policy and leading its implementation.

Ideally, council should authorize the city manager to implement AM across the municipality and to allocate the appropriate resources to make this happen.

Additional details about roles and responsibilities should be explained within the AM strategy document and incorporated throughout the AM system within job descriptions.

If applicable to the municipality, the policy should be signed by the person responsible for leading the implementation of the AM policy.

Template of text to use

The municipality views continual improvement as a key part of our asset management approach and will focus on driving innovation in the development of tools, techniques and solutions.

The municipality will monitor and periodically review the effectiveness of asset management processes and the wider asset management system in supporting the delivery of strategic objectives, and will make adjustments as required.

The municipality will assess the asset management competencies required to implement the AM system and provide the necessary support, education and training to AM staff.

The municipality will review the asset management policy in conjunction with its review of the asset management strategy, every four to five years.

Council's role and responsibilities:

• Approve asset management policy

• Articulate community values and define priorities

• Approve funding and resources to implement the AM policy and associated requirements

• Approve asset funding through multi-year and long-range financial plans

The chief administration officer (CAO) is responsible for leading the implementation of the AM policy across the municipality.

Departmental managers are responsible for leading the adoption of the AM policy within their departments and for allocating appropriate resources to its implementation and associated requirements.

All staff involved in the application of asset management are responsible for observing the requirements of the AM policy.

2.4 Next steps: Communicating your policy

Once your municipality has adopted its asset management policy, it will be very important to communicate it to municipal staff and council. The City of Windsor, ON, developed a one-page communications document that outlines the key elements of its AM policy. The document is available on the city's website.

Keep in mind that getting the policy done is just the first step in institutionalizing the practice of AM in your municipality. After the

City of Plessisville, QC, completed its policy, staff recognized that their next step would be to identify a member of council who would champion AM. The city will also develop routines for the its new AM governance committee and communicate the policy internally. A bottom-up approach that engages staff in AM will help to ensure ongoing commitment and the dedication of resources to AM planning.

2.5 Additional resources and examples

The following are links to asset management policies adopted by municipalities involved in FCM's Leadership in Asset Management Program:

City of Revelstoke, BC, Asset Management Policy (2016 Statistics Canada Census population: 6,719)

Township of Langley, BC, Asset Management Policy (2016 Statistics Canada Census population: 117,285)

City of Airdrie, AB, Asset Management Policy Summary (2016 Statistics Canada Census population: 61,581)

City of Melville, SK, Asset Management Policy (2016 Statistics Canada Census population: 4,562)

City of Windsor, ON, Executive Summary of Asset Management Policy (2016 Statistics Canada Census population: 329,144)

City of North Grenville, ON, Asset Management Policy and Strategy (2016 Statistics Canada Cenus population: 16,451)

City of Dieppe, NB, Asset Management Policy (2016 Statistics Canada Census population: 25,384)

City of Edmonton Asset Management Policy (2016 Statistics Canada Census population: 932,546)

Chapter 3: How to develop an asset management strategy

An asset management (AM) strategy is an important part of a well-functioning AM system. It outlines how the AM policy will be implemented and provides details on how the AM system will help in achieving strategic goals and objectives. The audience for an asset management strategy can be both internal (municipal staff) and external (council and the public).

The AM strategy describes the key practices, processes, tools and documents that staff will use to implement the AM policy and ensure adherence to its principles. The strategy can drive real and tangible improvements in evidence-based decision-making and will enable more reliable financial forecasting and planning. An AM framework forms an important part of the strategy, because it shows how your practices, processes, tools and documents relate to each other.

> The ISO 55000 International Asset Management Standard Committee and many industries refer to the AM strategy as a strategic asset management plan (SAMP). The term "AM strategy" is used here because it has resonated more successfully with the municipal sector in Canada.

Chapter 1 of this guidebook provided an overview of the key elements of an AM system. These include the AM policy, strategy, framework and governance structure. Chapter 2 explained how to develop an AM policy. This chapter provides guidance on how to develop an AM strategy and framework for your municipality. To fully appreciate the content of this chapter and before you begin work on your strategy, it is recommended that you review chapters 1 and 2.

In this chapter:

3.1 Roadmap to developing an asset management strategy

One of the core objectives of FCM's Leadership in Asset Management Program (LAMP) was to support municipalities in better integrating social, environmental and economic sustainability considerations into asset management practices.

The AM strategy and framework are critical tools that support this integration. They promote coordinated decision-making to achieve the municipality's strategic objectives, including sustainability and resilience.

The level of effort required to develop your strategy will vary, depending on your municipality's size, resources, staff capacity and stage of asset management maturity. Your first strategy can be simple and concise and will still support your municipality in building a more cohesive approach to managing service delivery across all asset classes and service areas. For example, the small municipality of North Grenville, ON (Census 2016 population 16,451), developed a concise strategy that is less than 20 pages in length. This has enabled the city to set direction and determine its next steps in strengthening its AM practices. Larger cities that are advanced in AM may have more comprehensive strategies. For example, the AM strategies of Airdrie, AB (Census 2016 population 61,581), and Ottawa, ON (Census 2016 population 934,243), contain significantly more detail. You will find links to their strategies and some others in Section 3.3, Additional Resources.

The process for developing a strategy is similar to the one for developing a policy, as outlined in Chapter 2. Generally, you will need to take the following steps:

Identify a project sponsor. Ideally the project sponsor will be a senior municipal administrator who has the authority to direct resources and time toward the development of the strategy.

Identify a project lead. The lead may be a dedicated asset manager or coordinator. Asset management does not need to be the project lead's full-time role, especially in a small community. However, your municipality will certainly need to develop clear roles, responsibilities and reporting lines for the person designated as the lead, because he or she will be required to lead collaboration across the municipality as you gather information and develop your strategy.

Working with a consultant: If you seek help from a consultant to develop your strategy, keep in mind that your municipality needs to own its strategy and must ensure that the strategy is implemented once the consultant's work is done. The project lead should ideally be someone who will be responsible for managing the implementation of the strategy once it is developed.

Build awareness and buy-in for the AM strategy. Staff need to understand how AM relates to them, and why they should be interested in helping to develop a strategy. You can obtain buy-in through an initial workshop or working meeting with key departmental staff. It is important to communicate regularly with staff throughout the process, because they will participate in implementing the strategy when it is complete.

Collect key documents and data. The AM strategy should be aligned with a municipality's high-level policies, strategies and plans. You will also need information on your asset portfolio and associated decision-making practices. More details about the type of information to collect is presented in Section 3.2, Contents of an Asset Management Strategy.

Develop the strategy. This may involve a number of working meetings or workshops with key departmental staff and your AM committee, if you have one.

Adopt the strategy. It is very important for the top leadership in the municipality to endorse the AM policy and strategy. Municipal councils should be aware and supportive of the direction that the administration is taking with regard to AM, as reflected in the principle statements of the AM policy. This requires good communication with council. You may wish to take a phased approach by seeking approval first from your asset management committee (if you have one), and then from top-level senior management. An AM strategy may or may not need to be adopted by council — that is for senior administration to decide. Don't forget to celebrate and communicate your accomplishment in having it endorsed!

Implement the strategy. An AM strategy is a living document that provides direction for all municipal infrastructure investment decisions. You will need to continue communicating progress on your strategy to staff and council, do regular monitoring, evaluating and reporting, and make adjustments as circumstances change in your municipality.

3.2 Contents of an asset management strategy

The asset management strategy should be tailored to your specific municipal context. The structure described in this section was used by most of the municipalities in FCM's Leadership in Asset Management Program. This section outlines the main components and type of content to include. By including these elements, you will ensure that your municipality continues to connect its strategic objectives with the principles set out in its AM policy and decision-making practices.

INTEGRATING SUSTAINABILITY

To highlight the integration between asset management and sustainability, the City of Revelstoke, BC (2016 Census population 6,719), placed a simple leaf graphic beside every paragraph of its AM strategy that made an explicit connection between environmental sustainability and asset management.

3.2.1 Purpose and scope

This section of the asset management strategy explains why the strategy is necessary. It will set boundaries for how the strategy will be applied and what it is meant to accomplish.

The purpose section should:

- Confirm that the AM strategy document is intended to link infrastructure decisions to the achievement of the municipality's vision, mission, goals, objectives or other aspirational statements.

- Explicitly commit the municipality to adopting sustainability principles to guide decisions about community services and the infrastructure that supports those services.

- Explain, at a high level, how planning occurs and is coordinated across service areas in the municipality. A documented approach shows how these processes consider and help achieve the community outcomes that your municipality wants for its citizens. Without

a coordinated approach, decisions tend to be made independently in each service area, and are less likely to be aligned with overall community goals.

The scope section should:

Identify which services or assets fall within the scope of the AM strategy and which do not. Some services may be excluded because of specific characteristics, because they require little infrastructure for their delivery, or because they are to be integrated into future revisions of the AM strategy.

Identify assets that are managed through a corporation that is either owned or governed by the municipality, or under a contractual agreement to provide services for the municipality (e.g. a water utility or waste management company). If appropriate, these assets should be covered within the scope of the AM system. Often, municipal officials are involved in the management of these other assets, and the municipality can be exposed to some of the risks. The principles of AM, as outlined in your AM policy, should be included in your management contracts and agreements with these service providers. It may be helpful to include a table in the scope section that lists these organizations or service partners along with the management agreements currently in place.

3.2.2 Background

Because the audience for an asset management strategy can be both internal (municipal staff) and external (council and the public), you may wish to start this section with a short introduction that describes your municipality and the services it is committed to delivering to the community. Describe your municipality's history and actions to date in advancing sustainability and AM principles and practices in its planning and decision-making processes.

Documenting the history of AM in the municipality builds corporate memory and helps staff put into context the current methods being used to plan and manage infrastructure to

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INTEGRATING SUSTAINABILITY

Do you have natural assets in your management portfolio? Municipal natural assets include assets that provide ecosystem services and benefits, such as the urban forest, water aquifers that are (potential) sources of drinking water, and wetlands that can receive treated wastewater or act as stormwater retention areas. While not built assets, natural assets contribute to municipal service delivery, and without them greater investment would be required in grey infrastructure to provide similar services. Incorporating these assets formally into your asset management system helps ensure that they continue delivering value to the community.

sustainably support service delivery. This history can be useful to the public as well, to help them understand how decisions are made on their behalf. Your municipality can decide whether to make its AM strategy available to the public.

Below are a few things to consider including in this section, depending on your municipality's unique planning processes and experience to date:

▶ Consider including a brief explanation of what an AM system is and your municipality's objectives for implementing one. If your target audience is unfamiliar with the concept of "management systems," they may assume that an AM "system" is a software application. An AM system is much more than a software application. (See Chapter 1 for an explanation of an AM system.)

▶ Highlight any steps already taken by your municipality to build its AM system (e.g. implementing a level of service framework, creating an asset inventory, developing a state of infrastructure report, preparing a long-range financial plan, or other building blocks).

Municipal example

In its asset management strategy, the City of Revelstoke, BC, describes AM and how it relates to service delivery:

> Asset management is a business model and management system made up of many elements (called asset management practices) for the sustainable creation, acquisition, maintenance, operation, rehabilitation and disposal of assets. The most compelling reason for implementing AM — and why it is required by legislation in some countries and is gaining popularity throughout Canada — is its focus on evidence-based decision making. Asset management practices will help the City find the responsible balance (economic, environmental, social and cultural) between what it can provide and what it can afford to provide.

City of Revelstoke, BC (2016 Census population: 6,719), Strategic Asset Management Plan, p. 5

Municipal example

In the introduction to its AM strategy, the City of Ottawa describes how its comprehensive asset management (CAM) approach is evolving:

> The City has an array of strategic, long-term planning documents that complement each other and work together to direct Ottawa's future. Some examples include the City's Strategic Plan that outlines Council's priorities, the Corporate Planning Framework that demonstrates the integration of Council's priorities, the Official Plan (OP) which sets the vision for Ottawa's future growth as detailed in such documents as the Transportation Master Plan (TMP), the Infrastructure Master Plan (IMP), the Ottawa Cycling Plan (OCP), and the Ottawa Pedestrian Plan (OPP).

> Historically, these master plans have dealt exclusively with future needs without considering their funding requirements, nor the rehabilitation needs for existing infrastructure. The latest version of the Master Plan included a financial sustainability lens that reinforced the holistic approach outlined in the CAM Policy.

> The SAMP captures information prepared for various uses, by a number of different groups within the City, and transforms that information into asset-specific measures or actions that the City is actively taking or pursuing to provide residents, businesses, and visitors the services at levels that correspond to the fees and taxes they pay.

City of Ottawa, ON (2016 Census population: 934,243), 2017 Strategic Asset Management Plan, p. 3

- Consider describing your municipality's legislative landscape and how it may impact the AM strategy. For example, the *Infrastructure for Jobs and Prosperity Act* in Ontario may drive specific priorities and timelines with regard to AM system development.

- Consider describing any other internal and external drivers that have led to the municipality's interest in improving AM.

- Document whether there are previous versions of the AM strategy, and how this version is building on progress already made.

INTEGRATING SUSTAINABILITY

The background section of an AM strategy provides an opportunity to demonstrate how asset management will support the municipality's goals in becoming sustainable and resilient. You may wish to refer to municipal documents that have shaped the AM strategy, like its sustainability vision, policy, framework or plan — if you have them.

3.2.3 Strategic alignment

The main purpose of an asset management strategy is to tie the municipality's strategic goals and objectives to infrastructure planning and decision-making.

All municipalities have a variety of existing policies, processes, and other documentation that reflects and articulates the strategic direction of the municipality. These should ideally be aligned with each other. The strategic alignment section of an AM strategy should explain how the strategy is aligned with all the other policies, strategies and processes in your municipality. It should show how the municipality's strategic objectives translate into more detailed AM objectives, such as desired levels of service. The strategic alignment section helps to create the "line of sight" from your municipality's strategic

direction and objectives, to AM decision-making practices and processes, and ultimately to the activities that will take place at the service and asset level.

Highlighting and explaining the alignment of the AM strategy with the municipality's other important planning and business processes will ensure that the strategy is relevant to everyone in the municipality. This section of the AM strategy will demonstrate how the strategy relates to other municipal objectives. This will help to build buy-in for its implementation.

In this section:

- Describe the connection between your AM policy and AM strategy (i.e. the AM policy outlines the principles and requirements, while the AM strategy details how the AM policy will be implemented).

- Itemize the strategic plans and documents that inform the AM strategy (e.g. official plan or municipal development plan, corporate priorities, sustainability plan, master plans, climate change strategies, social/cultural plans, policies, etc.). You may wish to include a document map, which is a visual representation of the hierarchy of existing documents (strategic plan, municipal plan, master plans, development plans, AM policy, etc.) and their relationship to the AM strategy.

- Consider explaining how the AM strategy is related to internal policies and practices that may not be represented in public-facing documents.

- Highlight key business improvement themes and actions that may not be particular to AM but will require collaboration and an integrated approach to application. Some examples might be:
  - » Implementing an integrated risk management framework.

» Promoting integrated land use and infrastructure planning.

» Adopting a common approach to documenting investment business cases.

» Managing environmental liabilities and assets owned by the municipality. For example, many municipalities have a strategy to redevelop or remediate brownfield sites.

Figure 3.1 below is a visual representation of strategic alignment from the City of Airdrie, AB (2016 Census population 61,581):

3.2.4 Business context and analysis

Every municipality exists in an environment that affects its priorities and how it delivers services. This is its business context. This section of the AM strategy explains the municipality's business context for asset management. It should outline some of the challenges and opportunities that the AM strategy will help the municipality address.

Page 32 provides some examples of complexities and uncertainties in the operating environment that will affect how assets need to be managed to deliver services effectively.

Figure 3.1: Asset management line of sight

CITY'S VISION, MISSION AND VALUES
• Serve as the foundation guiding the city's strategic planning objectives

ORGANIZATIONAL STRATEGIC PLANS
• Ensure clear understanding of the organizational objectives and mission for stakeholders
• Contain existing strategic plans that relate to the assets (e.g. service goals, sustainability)

ASSET MANAGEMENT POLICY
• Articulates senior management commitment to asset management and continual improvement
• Provides "top down" direction regarding expectations and mandatory requirements for asset management and defines the key principles that underpin asset management in the city

SMART Objectives

ASSET MANAGEMENT STRATEGY
• Defines what the organization intends to achieve from asset management activities and by when
• Identifies and prioritizes key initiatives that support delivery of the asset management policy
• High-level overview of resources, time scales for implementation

ASSET MANAGEMENT PLANS
• Provide approach to managing the assets over the short, medium, and long term
• Outline long-term plans for the assets including service expectations, timelines and funding, and resource requirements

Line of sight

Municipal example

The business context outlined in the AM strategy can be quite concise, identifying the most important factors influencing the asset management strategy.

For example, the City of Revelstoke, BC, included a 1.5-page summary of its business context that highlights its unique context as a small, isolated mountain community. This section outlines the city's requirement "to achieve core asset management practices as defined by the NAMS International Infrastructure Management Manual (IIMM) for all its asset classes, with the exception of the following services, where intermediate practices are required:

- **Water services (to manage increasing legislative requirements)**

- **Transportation and sewer services (to manage long-term sustainability of service concerns)**

- **Managing the effects of climate change and land use changes across all portfolios"**

City of Revelstoke, BC (2016 Census population: 6,719), Strategic Asset Management Plan

The following factors will influence your AM strategy:

- The scale of services your municipality provides

- The capacity of your municipality

- Your community's needs and challenges

- The complexity of your engineering systems

- Conditions that are changing quickly (e.g. a rapidly growing population)

- A changing regulatory environment (e.g. meeting new federal wastewater regulations)

The success of your AM strategy will depend on how well you understand these factors. Each municipality is unique. Different factors will have a greater or lesser effect on the operational characteristics of your AM system. A good understanding of your business context will help you develop aspects of your AM strategy such as:

- AM governance structure, roles and responsibilities

- Business processes to be used in managing assets, based on the level of complexity required

- Strategies for understanding and managing risk and opportunity

- Requirements for building AM capability and continual improvement

Understanding your business context will also help you determine the resources and level of effort required to implement the AM strategy. The resources required to implement your strategy will depend on how your municipality chooses to respond to the challenges in its operating environment.

A SWOT or PESTLE analysis can be a useful tool to provoke thought and consideration regarding the factors affecting council's decision-making and the priorities of stakeholders. Both approaches tend to reveal how important it is to break down silos and improve collaboration between internal departments.

Your municipality may not currently understand every aspect of its context. You can state in this section that the municipality will undertake a more comprehensive business context analysis that will inform future iterations of the AM strategy.

Analysis approach	Acronym explanation
SWOT	Strengths, Weaknesses (internal)
	The strengths and weakness are internally focused. They are the strength and weaknesses of the municipality in its ability to carry out asset management best practices. For example, a strength might be "a strong stakeholder engagement strategy that underpins service level decisions." A weakness might be "limited information or understanding of climate change vulnerabilities across the infrastructure portfolio."
	Opportunities, Threats (external)
	The opportunities and threats are located externally. They are external factors that influence decision-making and infrastructure investment. For example, an opportunity might be the fact that "infrastructure grant funding is available over the next five years to improve asset management practices and climate change resiliency." Examples of threats that affect infrastructure planning might include climate change, national economic trends, and an aging population requiring increased investment to support service levels.
PESTLE	Political, Economic, Social, Technological, Legal and Environmental (typically an externally focused analysis)

INTEGRATING SUSTAINABILITY

You may wish to include your municipality's sustainability commitments and obligations as part of the business context, to frame how they will be integrated into the asset management strategy and other related documents.

3.2.5 Needs and expectations of stakeholders

This section of the asset management strategy should identify the stakeholders receiving (and possibly helping to deliver) municipal services, and their needs and expectations as understood currently by the municipality. This will inform the municipality in setting appropriate objectives and targets for levels of service.

You may wish to include generalized statements that provide context on how the municipality will establish levels of service and other objectives and how these are to be aligned with stakeholder needs and the municipality's strategic goals and objectives. If you do not yet have a lot of information about stakeholder needs, you can keep this section quite brief and high-level, and note it as an area of improvement.

Municipal example

The City of Airdrie, AB, used a modified PESTLE approach for this section of its asset management strategy to analyze its external political, economic, social and environmental context. To analyze its internal AM context, the city used an existing municipal framework that highlights the four "assets" of the organization: physical, people, financial, and information.

City of Airdrie, AB (2016 Census population: 61,581), Asset Management Strategy 2018–2023

Some of the LAMP municipalities identified the need to better understand stakeholder needs and expectations as an area for improvement in their strategies because, like many other municipalities in Canada, they are at a very early stage of engaging with stakeholders and understanding their needs related to levels of service. In some cases, the details about stakeholder needs and engagement strategies can be found within the asset management plans for specific asset classes. For example, the City of Nanaimo, BC, has a great deal of information about the transportation needs of stakeholders in the municipality because of the extensive public engagement the city did in developing its transportation master plan.

Who are stakeholders?

Stakeholders are people and organizations that can be directly impacted by, or can directly influence, the services provided by municipalities and whom municipalities must consider when making decisions about services and infrastructure planning. Council, taxpayers, voters and all those who receive municipal services are stakeholders. External stakeholders like regulatory bodies must also be considered because they represent and act on behalf of the wider community, and often impose specific mandatory requirements. Internal stakeholders, like municipal staff in different departments, must also be considered because their particular needs may influence decision-making. For example, a neighbourhood revitalization policy being promoted by another department may afford opportunities to coordinate other asset-related work, such as the replacement of underground services.

The ISO 55002 (2014b) standard for asset management groups stakeholders as follows:

- **Internal stakeholders: Employees within the organization; groups within the organization (i.e. functional groups); and shareholders, management consortiums and owners.**

- **External stakeholders: Customers, users, suppliers, service providers and contractors; non-governmental organizations, including civil society organizations, consumer organizations and media with an interest in issues related to asset management; government organizations, agencies, regulatory authorities, and politicians at all levels of government; investors or taxpayers; local communities; those in society interested in social, financial, environmental or other forms of sustainability; financial institutions, rating agencies, and insurers; employee representatives.**

Municipal example

Many municipalities are at early stages of developing effective mechanisms for internal stakeholder engagement and cross-departmental collaboration to support asset management. The City of Airdrie, AB, is using a change management approach to foster a culture of internal collaboration on asset management. Its asset management strategy has a section on internal stakeholder engagement:

> As the Asset Management System is built and practices are embedded into daily business, a Change Management approach will be utilized to foster adoption and integration of the resulting changes in process, roles and responsibilities, as well as expected outcomes.

> A Change Management Strategy was created to help identify obstacles, stakeholders and audiences. Change Management Plans and tactics have been created and are executed accordingly. Change Management tactics comprise communication, training, unique learning mediums and marketing-type campaigns.

City of Airdrie, AB (2016 Census population: 61,581), Asset Management Strategy 2018–2023

Engaging stakeholders

Some stakeholders are well-known and understood within a municipality. They commonly make their needs and expectations known to council and staff. However, not all stakeholders provide direct feedback and some may not be recognized in the establishment of priorities and objectives for decision-making unless you have carried out a formal stakeholder inventory and assessment and actively engaged with them.

Stakeholder engagement should therefore involve a mix of unsolicited and proactive approaches to seeking feedback. The feedback is then interpreted and used to inform the setting of priorities and objectives. In this section of the AM strategy, articulate how you will engage your municipality's stakeholders. Consider including the following elements:

- The type of information you will collect about stakeholders and how frequently it should be updated.

- A process to be implemented for reviewing levels of service. For example, how will "willingness to pay" studies be used to inform future level of service priorities and targets?

Mechanisms to collect stakeholder information (e.g. surveys, the municipal customer service department, media reviews, etc.) and how this information will be collated and shared to inform the setting of priorities and objectives.

What are your information needs about stakeholders?

Depending on your asset management objectives, you may need to prioritize engagement with specific stakeholders.

Segmenting stakeholders and articulating their needs now and over the longer term is revealing, because different groups of stakeholders can have very different needs. For example, senior citizens have different mobility needs than youth and working populations. In addition, changing demographics — like an aging population — may require changes to transportation services over time that will need to be considered in your municipality's AM planning.

Consider adding a gender lens to stakeholder analysis: Lesson from Stockholm, Sweden

A gender analysis can be enlightening in identifying the different service needs of women and men. A good example is the case of Stockholm, Sweden. After conducting a gender analysis related to winter snow clearing services, the city made a decision to prioritize plowing sidewalks and bike paths first, as they were deemed essential for supporting women's mobility in the city.

To help prioritize which stakeholders you would like to understand more deeply than others, consider creating a stakeholder engagement matrix that groups stakeholders, defines the degree to which they influence municipal priorities and decisions, and shows the level of engagement that is appropriate for them. This matrix could also describe the methods you will use to collect information. A basic example of a stakeholder matrix is presented at the bottom of this page.

3.2.6 Asset management decision-making approach

Every municipality has its own way of making investment decisions. The asset management strategy is the reference document that makes clear to municipal staff and council how they should make decisions in line with the underlying principles set out in the AM policy. Documenting how the municipality currently makes decisions is important for ongoing transparency and consistency across the municipality and provides the rationale and context for ongoing improvement activities.

Use this section to explain:

Your municipality's current decision-making practices and processes for achieving levels of service and other AM objectives.

How your municipality is working to improve these decision-making practices and processes (for example, by requiring life cycle costing, triple bottom line assessment or comprehensive risk assessment, or by applying a prioritization framework for projects).

When your municipality has a transparent and consistent decision-making approach in place, staff or council will be able to interpret investment needs and potential benefits of investments using a common lens. They will be able to use the same criteria to analyze the costs, performance and risk tradeoffs involved with different service delivery decisions. These criteria will also apply when allocating funding across all services.

Example of a stakeholder matrix

Stakeholder group	Type	Level of impact	Level of influence	Engagement strategy
Regulator X	External	High	High	Annual meetings
Department Y	Internal	Low	Medium	Bi-monthly meetings
Citizen group Z	External	High	High	Annual survey

INTEGRATING SUSTAINABILITY

- **Do your level of service definitions consider what is sustainable for the community?** Level of service definitions articulate the quality, reliability and availability of a service in an objectively measurable way. These definitions have often evolved over time and may not have been established based on their sustainability. Often, service levels have increased to the point where sustaining them over time requires higher levels of investment, and they may not be socially or environmentally sustainable.

As well, when conducting life cycle analysis, scheduling infrastructure improvements and making decisions on the tactical aspects of service delivery, consider the following questions:

- **Have you considered triple bottom line (TBL)** analysis to evaluate the economic, socio-cultural and environmental aspects of decisions, and to ensure that they are reflected in investment, service delivery and trade-off decisions associated with infrastructure?

- **Do you have clear sustainability criteria and weightings** as part of your decision-making process? Such weightings would generally be applied to factors including the least life cycle cost, as well as the social and environmental costs and benefits of options.

- **Does your risk assessment consider climate change and other sustainability considerations?** Risk management is a core principle in any AM system. Levels of service, cost of service, and the risk of service failures are all interrelated. Risk evaluations should not just assess the hazards that are potentially increased by climate change; they should also consider how a decision may increase the risk of contributing to climate change. How is your municipality building risk into all its decisions?

- **Do you consider environmental performance and sustainability in the asset condition assessment process?** Most infrastructure assessments assess condition and performance relative to a like-new asset and functionality. Evaluations of environmental performance and sustainability consider the asset's environmental impact relative to other options for service delivery.

- **Do you know whether your capital plan is financially sustainable over the long term?** Assets are long-lived. Their service lives often exceed human lifetimes, and certainly the employment and political terms of those involved in running and leading municipalities. Decision-making must consider a long time horizon to ensure sustainability.

The description of your decision-making approach should explain how you will:

- Define and sign off on level of service targets.
- Track service performance in each service area and report corporately.
- Incorporate and manage risk in investment planning and the development of business cases.
- Consider sustainability and whole-life costs when making investment choices.
- Evaluate and prioritize infrastructure investment projects within and across service areas.
- Set funding levels for the service areas.

If your decision-making approach is currently unclear, think about the following:

- How do the concerns of stakeholders inform and influence which assets you decide to upgrade, replace, build, etc.?
- What other triggers do you use to make these decisions?

As you collect this information, you will develop a better understanding of your municipality's current decision-making criteria. Your AM strategy can then describe a decision-making approach that the municipality is working toward, and include a schedule of implementation.

The City of Airdrie, AB, used a table to describe the strengths and shortcomings of its existing decision-making approach, shown below.

3.2.7 Asset management objectives and performance targets

This section of your asset management strategy should create a clear connection between your municipality's strategic objectives and its asset management objectives. This is how you will develop a clear "line of sight" from the top down and ensure that strategic, tactical and operational decisions about your assets support your municipality in achieving higher-level organizational goals.

AM objectives guide decision-making in each service area and help municipalities define what they are trying to achieve with their assets. Municipalities commonly use the term "levels of service" to describe their AM objectives. However, other performance measures, such as unit costs or greenhouse gas emission reductions, may also be considered AM objectives. Use this section to provide a framework for establishing levels of service and other performance measures and reporting on

Elements of Strength within the current process	Shortcomings with current process
Overarching city vision exists	Services and level of service are not clearly defined
Annually council and corporate strategy is developed	Costing of services is not comprehensive
AirdrieONE acts as a guiding document to reach community sustainability	Limited amounts of data substantiate requests
Master plans are in place for major components of the City operations; strategies from these plans feed into the planning cycle	Data analytics are limited within current system
City departments develop departmental business plans including necessary actions related to goals	Long-term effects of potential decisions are not determined and made available
Resources are assigned to maintain current services and fund new initiatives and increases/new services levels	Business case evaluation is not used for major initiatives
	No formalized method exists to compare the priority of different recommendations/requests
	Little to no checks and balances exist to ensure valid data is included in justifications

Source: City of Airdrie, AB (2016 Census population: 61,581), Asset Management Strategy 2018-2023, p. 39

performance. This framework can help your municipality be consistent about how it assesses performance across different service areas.

Usually, objectives can be classed into a few categories that all services can use to frame their own statements:

▸ **Compliance** (e.g. Our municipality will remain in full compliance with all regulatory requirements that govern our services.)

▸ **Availability/reliability** (e.g. We will provide a service availability/reliability statement for all our service areas.)

▸ **Coordination** (e.g. Our investments will directly consider other external stakeholder activities and internal projects, to minimize disruption and cost when implementing projects.)

▸ **Quality** (e.g. We will provide a service quality statement for all our service areas.)

▸ **Accessibility** (e.g. We will design our services to ensure all members of our community can access them, regardless of their disabilities.)

▸ **Sustainability:** (e.g. We will evaluate options and make decisions by directly evaluating triple bottom line (socio-cultural, environmental and economic) factors.)

Carefully considered AM objectives that align with the municipality's strategic objectives will help council and the community interpret and understand the value being delivered for the proposed expenditures.

For example, your municipality may have a strategic objective to reduce traffic congestion over the next 10 years by promoting a modal shift from vehicular traffic to public transportation. Your AM objectives will need to reflect that strategic objective, and you may choose to define level of service outcome statements and measures that directly influence AM decisions. The following are some examples of level of service outcome statements and measures that you could use to evaluate based on the strategic objective of reducing traffic congestion.

Municipal example

The City of Windsor, ON, sees asset management as a strategic opportunity in its efforts to address challenges related to climate change and has incorporated an AM objective to support actions that will help the city adapt to climate change and reduce greenhouse gas emissions. Its Asset Management Philosophy and Framework states:

> Asset management provides a substantial opportunity to address a changing climate over the long-term. Using the best available science and proven innovation along with provincial and federal guidance documents, the City will identify climate risks and determine how these risks may impact a community asset over its intended life. Climate change and climate change activities or actions must be considered while managing both physical and natural assets, as well as ensuring (or improving) the level of service being delivered.

> It will be important to determine how a changing climate may affect the Triple Bottom Line or Life Cycle Costing of a community asset. Measures for mitigating climate change will also be considered. Staff will have a general understanding of how climate change impacts community assets.

City of Windsor, ON (2016 Census population: 329,144), Asset Management Philosophy and Framework, p. 17

Accessibility:
- Level of service outcome statement: Community residents can easily access the public transportation system without utilizing personal vehicles.

- Level of service measure: Percentage of people living within a five-minute walk of a public transit route.

Reliability:
- Level of service outcome statement: The public transportation system delivers reliable on-time performance.

- Level of service measures: Percentage overall on-time performance for all transit routes. Percentage peak hour on-time performance for express routes.

3.2.8 Asset management framework

The asset management framework is the part of the AM strategy that shows how the various parts of the AM system interconnect and work together to achieve municipal goals through the management of infrastructure. Some municipalities include a section in their strategy, called "AM processes and practices" or "AM system," that includes the AM framework.

This section does the following:

1. It provides a reference map against which staff in individual service areas can align their own practices and processes.

2. It promotes the consistent application of corporate practices, processes and tools across the municipality.

AM frameworks are useful in communicating the AM system to stakeholders and staff. They are typically made up of two core elements:

1. An illustration of the municipality's coordinated AM activities and practices in a process map, diagram or graphic.

INTEGRATING SUSTAINABILITY

Consider whether your AM processes and tools support integrated decision-making and the achievement of strategic goals for sustainability:

- Are staff trained to consider and understand sustainability principles, policy, concepts, options and solutions? Training programs and awareness initiatives are key enablers for implementing any change. Staff must have the knowledge and ability to embed sustainability into their AM activities.

- Do you have sustainability champions engaged across the municipality? Champions are the mentors and cheerleaders who help others learn, encourage staff and celebrate success. They act as advocates for building sustainability principles, policy and concepts into the AM system. Success is more likely over the long term when an internal champion takes ownership of the change.

- Does your municipality have a culture of sustainability? Senior management can foster a culture of sustainability by reinforcing its importance as a core value, and by profiling sustainability projects and celebrating successes in internal and external communications.

Municipal example

The City of Airdrie, AB, has included in its AM strategy a section called "AM System," which features:

- An AM framework diagram
- The document hierarchy that guides AM decisions
- A description of the processes for assessing, planning and implementing AM
- A description of the information technology systems that support the AM system

City of Airdrie, AB (2016 Census population: 61,581), Asset Management Strategy 2018–2023

2. A description of each component that also explains the functional relationships between components and with other municipal practices. Some municipalities put this information in a table that identifies the processes, tools and documents applicable to each element of the framework, including a description of the purpose or intended outcome of each.

There are various guidance materials on how AM systems should be structured, and many examples of AM frameworks (see the examples at the end of this section). The important point to keep in mind is that municipalities have different structures and processes, and your framework will need to reflect the characteristics of your municipality.

Your municipality can incorporate many enablers (tools and processes) that help your AM system to function well. Examples of enablers include communications, training, knowledge sharing, change management, and information technology systems.

Examples of AM frameworks

Some municipalities create their own framework illustrations, while others use standard frameworks such as the Asset Management British Columbia framework diagram, the Institute of Asset Management framework or other options within the best practice literature.

Consider the following in designing your framework:

> Choose one that best reflects the actual processes and practices in your municipality.

> In addition to the visual diagram, document how activities are coordinated across your municipality so that staff (and council) understand their contribution to the overall process.

Some examples are shown below.

Figure 3.2: Asset Management for Sustainable Service Delivery: A BC Framework

Source: Asset Management for Sustainable Service Delivery, by Asset Management British Columbia https://www.assetmanagementbc/framework

Figure 3.3: Institute of Asset Management framework : IAM Conceptual Model

Source: IAM Asset Management - an Anatomy Ver3, 2015, Page 16 - theIAM.org/AMA
©Copyright The Institute of Asset Management

Figure 3.4: City of Ottawa Comprehensive Asset Management Framework

Source: City of Ottawa

For more ideas and guidance about what to include in the framework section of your strategy, see the examples of asset management strategies provided in Section 3.3, Additional Resources.

3.2.9 Key asset management improvement initiatives

Implementing asset management practices is a long-term journey and requires a patient and planned approach. Continual improvement is a core aspect of AM practice. It is important to assess the relative maturity of your municipality's current practices, understand what areas you'd like to improve, and prioritize enhancements to your AM system that will be implemented over time.

Use this section of the AM strategy to describe your improvement plan, which will likely include a number of stand-alone projects that come together to build and reinforce the different parts of your AM system.

Keep in mind that municipalities do not need to be advanced in all areas of their AM system. Most municipalities will need to adopt a staged approach over several years to develop competence in all areas. You should structure your improvement plans over the short, medium and long term, based on available resources and funding.

Municipal example

The Municipality of North Grenville, ON, identified the following improvement activities in its AM strategy:

- Expand the scope of the current AM Plan to include all Municipal assets;
- Improve data collection and refine the service life of data;
- Formally put in place preventative maintenance programs;
- Enhance the alignment of the AM Plan and the Long Term Financial Plan and all other relevant plans;
- Develop a risk management policy and framework associated with assets as well as with service delivery; and
- Develop a level of service (LOS) framework

Municipality of North Grenville, ON (2016 Census population: 16,451), Asset Management Policy and Strategy (2017), p. 16

The initiatives your municipality commits to undertake over time can apply to the whole municipality or to individual service areas. They are often captured in a multi-year roadmap plan that includes a schedule for completion, identifies a person responsible for the completion of each task, and states the milestones or expected outcomes against which each action will be evaluated in the future.

You may find it useful to conduct a formal gap assessment to highlight potential areas for improvement. These assessments can identify gaps relative to best practice and can also help you establish the level of practice your municipality will seek to achieve. The general rule of thumb when working with assessments and roadmaps is that achieving excellence is an aspirational goal, but not necessary or possible in all areas of AM. However, your municipality should aim to be competent and apply good practices suitable to its own context.

> The Municipal Asset Management Program of the Federation of Canadian Municipalities developed an asset management readiness scale that allows municipalities to assess their progress on asset management. It is a simple, free tool that municipalities of any size can access online from FCM's website.

3.2.10 Asset management roles and responsibilities

Effective AM requires collaborative, multidisciplinary approaches across the whole municipality. In order to successfully implement and embed its AM system, a municipality needs:

- Buy-in and visible endorsement from top management.

- A governance structure that ensures the right people are assigned to the right roles, and understand their roles, responsibilities and accountabilities within the AM system.

- Delegated staff with the required competencies to implement the specific functions and improvements required in the AM system.

Use this section of your strategy to identify who is accountable and responsible for implementing the AM system across the municipality. Chapter 4, How to Develop an Asset Management Governance Structure, provides detailed guidance on this.

INTEGRATING SUSTAINABILITY

In developing asset management roles and responsibilities, consider the following:

Are the staff responsible for AM also knowledgeable about, and committed to, sustainability principles?

Are there sustainability staff and planners at the AM table? Having staff that are responsible for advancing sustainability within a municipality increases the likelihood of it being embedded within the AM system.

3.2.11 Asset management strategy risks and opportunities

Every strategy is only as good as its execution, and course changes are often needed as risks and opportunities arise during implementation. For this reason, when you develop your asset management strategy, you should consider and document the potential risks and opportunities that may require action. You will need to monitor them as you implement the strategy.

There are a large variety of risks and opportunities you may wish to include in this section. Depending on your municipality's capacity, it may be beneficial to develop specific plans to mitigate risks and exploit opportunities. Some examples of risks and opportunities are provided below.

Risks

- Lack of engagement and buy-in from staff may inhibit implementation of proposed changes and improvements planned as part of the AM strategy.

- Documented decision-making processes and objectives may not align with council and stakeholder expectations.

Opportunities
- Neighbouring communities may be willing to collaborate and share the cost of service delivery in some areas.

- Improved technology or other innovations may create new ways to deliver services with very different or less costly infrastructure.

3.2.12 Continual improvement, monitoring and innovation

This section of the asset management strategy describes how the municipality will monitor progress in implementing the AM system and how it will adjust course if necessary. A good monitoring system encourages continual improvement and demonstrates the achievement of objectives. It is a good idea to document the frequency and manner in which monitoring and reporting will be done.

What gets measured, gets done. Without this check in your AM strategy, there is an increased risk of poor implementation.

Consider the following when developing your performance monitoring system:

▸ Seek out opportunities to use existing data and monitoring activities to inform your understanding of system performance. Minimize the level of new effort for monitoring programs.

▸ Create metrics that are SMART (Specific, Measurable, Achievable, Realistic and Time-bound). This helps ensure that the monitoring system is meaningful and can be clearly understood by staff.

▸ Don't over-measure. Pick some key areas you wish to focus on and monitor these. Use proxies if necessary. Resources are limited in municipalities and you only need to have

INTEGRATING SUSTAINABILITY

How will you better integrate sustainability into your asset management practice over time? In your efforts toward continual improvement, consider including initiatives that will improve alignment of AM practices with sustainability principles in your municipality. Consider the following questions:

• Are you documenting how sustainability objectives are incorporated into your AM system? This will substantially increase the likelihood of them being tracked, assessed and achieved over time.

• Are you communicating to council and the public regarding municipal performance on service delivery and sustainability goals? Sharing information on performance and celebrating successes helps build buy-in and reinforces a culture of sustainability in the community, and ensures that your municipality has support for investing in AM.

enough monitoring to be confident that you have a clear understanding of system performance.

▸ Solicit ideas and new ways of doing things through regular polling and feedback from those involved with the AM system. Innovation often happens spontaneously on the shop floor or front lines of service delivery.

See the examples of asset management strategies provided as links in Section 3.3, Additional Resources, for ideas on how your municipality can approach monitoring and continual improvement.

Once you've completed this section, your strategy is ready to be approved! Chapter 5 provides some tips on building support for your AM policy and strategy, as you embark on its implementation.

3.3 Additional resources

Examples of asset management strategies and frameworks

City of Revelstoke, BC (2016 Census population: 6,719), Strategic Asset Management Plan (2017)

Township of Langley, BC (2016 Census population: 117,285), Asset Management Framework (2017)

City of Airdrie, AB (2016 Census population: 61,581), Asset Management Strategy 2018–2023

City of Joliette, QC (2016 Census population 20,484), Stratégie de gestion des actifs, available in French only

City of Ottawa, ON (2016 Census population: 934,243), Strategic Asset Management Plan 2017

City of North Grenville, ON (2016 Census population: 16,451), Asset Management Policy and Strategy (2017)

City of Windsor, ON (2016 Census population: 329,144), Asset Management Philosophy and Framework (2017)

Chapter 4: How to develop an asset management governance structure

Chapters 2 and 3 provided guidance on developing your asset management (AM) policy and strategy. It is important to remember that the policy and strategy are not end points in your AM efforts. You must also put governance mechanisms in place to ensure that people are accountable and responsible for implementing, maintaining and continuing to improve the AM system.

This chapter provides guidance on developing and documenting the governance structure of a good practice, organization-wide AM system. It provides a benchmark for the municipal sector based on the experience of the municipalities involved in FCM's Leadership in Asset Management Program (LAMP).

This chapter does not provide guidance on the structure, roles and responsibilities required for managing service delivery in specific service areas.

In this chapter:

Each municipality has its own organizational structure and accountability requirements. The guidance in this chapter aims to help you build an AM governance structure that aligns well with your current business processes and accountabilities. You will need to decide whether to have your governance structure approved as a stand-alone document or include it in your AM strategy. Your decision may depend on when you plan to develop and put in practice your proposed governance structure, and whether this coincides with the timing of your AM policy or strategy or both.

4.1 Goal and purpose of asset management governance

Your AM governance structure will help your municipality to:

> Formalize AM as a business model in the municipality.

> Promote and foster a culture that supports AM.

> Ensure that the appropriate functions and departments are involved in the development and implementation of the AM system.

> Support coordinated decision-making aligned with objectives.

> Guide managers in the implementation and application of the AM system.

> Oversee, prioritize and direct the program of work required to implement your AM system.

> Ensure that AM is consistently implemented and embedded in day-to-day business.

> Maintain oversight and control of the development, implementation and improvement of the AM system.

> Measure the ongoing contribution of the AM system to the municipality's goals and adjust content and direction if necessary.

> Refine your AM objectives to maintain alignment with evolving corporate strategy.

Goal and purpose: Template of text to use

• The goal of governance is to set appropriate priorities and objectives for asset management for the City/Town of _____ and to ensure that they are achieved. It governs the actions and processes that create consistent and stable AM practices and policies across the organization. This will ensure a robust, transparent and accountable approach to managing assets and will promote the long-term sustainability of service delivery.

• The purpose of this document is to clarify the roles, responsibilities, authorities and accountabilities of individuals and departments regarding asset management at the city/town.

Insights from the LAMP municipalities

"Governance needs to clearly show that while responsibility or accountability might fall to one individual or team, the implementation and support involves a multidisciplinary team across the organization."

City of Ottawa, ON

"Designing the right governance structure, and being aware of where you're already at, is very important in taking any step forward."

City of Windsor, ON

4.2 Principles of asset management governance

The LAMP participants developed the following principles, which are intended to guide the design and implementation of an asset management governance structure:

▶ Inclusive and equitable cross-functional representation

▶ Clarity regarding accountability and responsibility

▶ Clear leadership in setting direction and in developing, implementing and improving the AM system

▶ Promotion of competence, capacity and consistency across the organization

▶ Empowerment of staff, and innovation and openness to change

▶ Transparent decision-making, sustainability and long-term orientation

▶ Integrity and fairness in adjudication and conflict resolution between departments

▶ Active management of risk, and continual improvement

The governance principles developed by the municipalities involved in FCM's Leadership in Asset Management Program are intended to foster an organization-wide and consistent approach to asset management that supports sustainability goals.
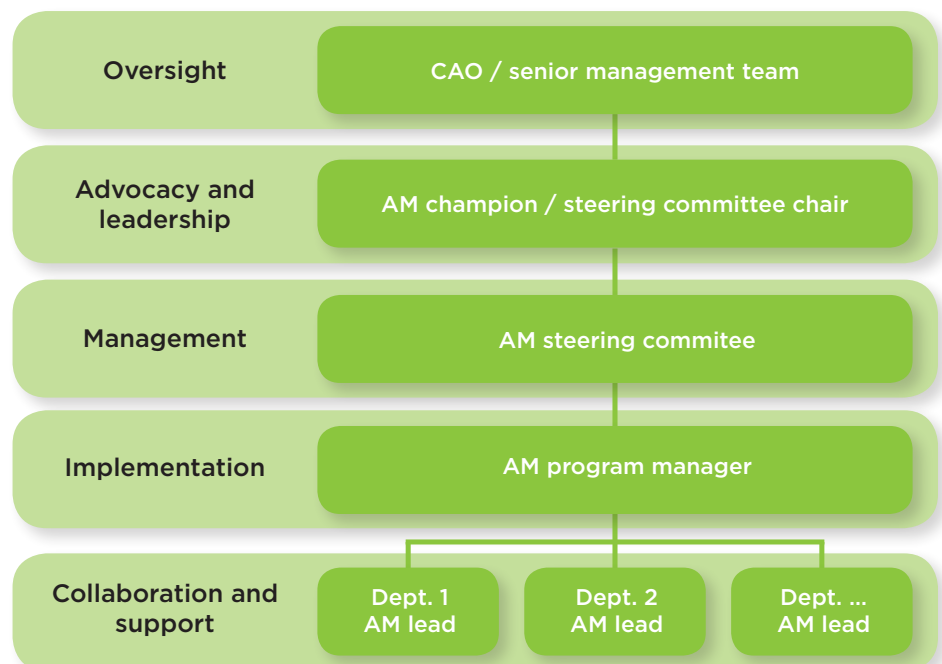
4.3 Governance structure

In order to establish good governance of your AM system, it is recommended that you create a hierarchical structure similar to that shown on the sample organizational chart below. This particular structure is generally applicable to municipalities of any size, with any level of AM maturity, model of local government, organizational structure, or resource capacity.

Thechief administrative officer (CAO) is generally responsible for setting the high-level vision and objectives and establishing and maintaining the underlying governance structure.

The AM steering committee is responsible for providing leadership in delivering this high-level vision and associated objectives. The steering committee should generally include senior managers representing the major business functions included in the scope of your AM system.

Figure 4.1: Example of a typical asset management governance structure

Oversight	CAO / senior management team
Advocacy and leadership	AM champion / steering committee chair
Management	AM steering commitee
Implementation	AM program manager
Collaboration and support	Dept. 1 AM lead — Dept. 2 AM lead — Dept. … AM lead

In order to be effective, the committee should be charged with overseeing the development, implementation and continual improvement of your AM system. The committee should meet the following requirements:

1. Be accountable to top management for results.

2. Be comprised of director-level representatives or department leads covering all aspects of the AM system, including:

   • finance

   • engineering and public works

   • planning and development services

   • corporate services

   • geographic information systems, information technology, and information management

3. Have the authority to establish specific priorities and objectives, and to direct resources toward those priorities and objectives.

The size and makeup of your steering committee will depend on your municipality's size and organizational structure.

These may include challenges related to size and resource capacity, and challenges related to organizational structure.

Challenges related to size and resource capacity: The AM steering committee must provide leadership and strategy and must focus on the "big picture." As far as possible, it should avoid making managerial decisions and getting involved in the day-to-day implementation of the AM strategy.

The larger the municipality, the easier it is to define the boundaries. In a larger municipality, a governance or advisory body governs, the senior management team manages, and the rest of the staff engage in day-to-day planning and operations.

But for many municipalities, particularly small ones, the lines between governance, management, and day-to-day planning and operations are easily blurred, as they are closely interrelated and commonly handled by the same staff or team.

Structure adaptations

Depending on your municipality's size, you may wish to adapt your governance structure to be more flat than the one shown in Figure 4.1. In smaller municipalities, the advocacy and leadership, management, and implementation functions may be handled by the same AM committee. Be careful to ensure that responsibilities are shared among all the people involved.

It can be difficult for staff who have two roles — both governance and day-to-day management and operations — not to get bogged down with short-term issues and as a result lose sight of (and time for) longer-term strategic issues. In these situations it is essential to find an effective way of balancing governance, management and operations. One important solution for small organizations is to define a very clear purpose and agenda for governance meetings. It is also essential to identify

an AM champion or coordinator who will ensure that governance meetings are focused appropriately and initiatives continue to move forward.

Challenges related to organizational structure: A steering committee must include adequate cross-functional representation. Organizational structures can create silos between departments, and the steering committee must cut across these boundaries. This is vital in ensuring that cross-functional processes and tools are appropriate and effective. It is also necessary in ensuring that the AM system connects all the departments and functions necessary for sustainable service delivery, such as business planning, long-term strategic planning, short-term asset planning, capital program governance, capital delivery, operations and maintenance, asset information, and finance.

INTEGRATING SUSTAINABILITY

Some municipalities, like the City of Windsor, ON, have already found significant benefit from including their sustainability coordinator within their asset management steering committee.

"Asset management provides an opportunity for sustainability to be embedded in corporate decision-making. This integration eliminates the common reality of sustainability staff having to lobby for specific actions on an ad hoc basis. For example, adopting a city-wide requirement to include energy and carbon costs as part of operating costs enables climate considerations to be embedded in the decision-making process to support broader corporate climate goals."

Karina Richters, Supervisor, Environmental Sustainability and Climate Change, City of Windsor, ON

4.4 Roles and responsibilities

Asset management is a business model that requires governance to implement and sustain it. The governance activities shown in the following table will drive implementation throughout your municipality and ensure that AM is aligned with your overall strategic objectives.

Practice/process	Description
AM strategy and policy	Developing an AM policy and AM strategy consistent with the strategic plan that provides sufficient information, direction and guidance to develop AM objectives and associated plans.
AM program development, Iimplementation and management	Establishing an organizational structure for implementation of the AM system with defined roles, accountabilities, and responsibilities for achieving AM objectives.
Continuously improving AM	Monitoring and reporting on achievement of AM objectives. Ongoing review and assessment of the effectiveness of the AM system and identification of and prioritization of areas for improvement and associated tasks.
Sustainable practices	Periodically assessing the AM program to ensure outcomes support the municipality's sustainability objectives (e.g. financial, social, and environmental).
Managing risk	Managing opportunity and risk in the AM system.
Stakeholder consultation/ communication	Coordinating the planning, programming, and implementation of improvement actions across the organization.

Your governance framework must include a clear description of the governance roles, accountabilities and responsibilities that you have outlined in your organizational chart. This may form the terms of reference for the different parties in your governance framework. See the example in the table below.

Group	Description and role	Responsibilities
Council and chief administrative officer (CAO)	The council is made up of the elected representatives for the municipal organization and the CAO is their appointed executive. Council has the following role in AM governance: a. Act on behalf of and represent the interests of stakeholders. b. Establish the vision, service mandates and corporate management policies. c. Adopt, review and update the AM policy and ensure that an AM strategy is in place. d. Maintain the necessary corporate capacity to support the elements and practices of an AM system. e. Set priorities and articulate community values to city administration. The CAO has the following role in AM governance: a. Act on behalf of and represent the interests of council. b. Provide direction to the AM steering committee.	The CAO has the following responsibilities: a. Implement the AM policy, AM strategy and supporting AM system. b. Establish an AM steering committee, with representation from each service area and business area; and appoint an asset management coordinator (AMC) to serve as chair of the steering committee. c. Define the AMC's responsibilities, and delegate responsibility to the AMC to act as a champion for AM within the organization. d. Ensure that staff are provided with sufficient resourcing, financial support, training and tools to manage risk and support the elements of sustainable service delivery. e. Commit to the implementation and continual improvement of AM practices, processes and tools to support the achievement of the city's organizational objectives. f. Schedule and complete periodic internal audits and management reviews to assess the effectiveness of the AM system in achieving the AM objectives and supporting organizational objectives and council priorities.
Senior management team (SMT) Possible role holders: • General manager of engineering and community development • General manager of administration and community services	The SMT is the executive leadership of the corporation (the most senior group of administrative officials). The SMT's role is to work collaboratively across the organization as follows: a. Advise on strategic issues related to corporate decision-making. b. Generate solutions to organizational challenges. c. Provide direction on corporate-wide projects and initiatives. d. Empower employees based on the corporation's core values.	The SMT has the following responsibilities: a. Establish the AM objectives. b. Ensure robust and transparent decision-making and administration of service delivery. c. Provide appropriate and timely support to the asset management coordinator (AMC) and steering committee. d. Advise the AMC and AM steering committee on strategic issues related to corporate decision-making. e. Generate solutions to organizational challenges related to the implementation of AM. f. Ensure consistency of AM practices and processes across departments, including adoption and application of common principles of sustainability and AM. g. Empower employees based on the city's core values and priorities.
AM champion (AMC) Possible role holders: • Director of engineering and public works • Director of finance	The AMC is the principle advocate and sponsor of the AM program in the corporation.	The AMC has the following responsibilities: a. Chair the AM steering committee. b. Report on the progress, capacity, effectiveness and sustainability of the AM system to the CAO.
AM steering committee Possible role holders: • Director of finance • Manager of parks operations • Manager of water resources • Manager of planning and community development • Sustainability manager/coordinator	The AM steering committee is a direction-setting and decision-making committee that acts on behalf of the CAO and represents the interests of the organization. The steering committee is accountable to the senior management team and provides assurance that corporate requirements are being implemented. The AM steering committee has the following role: a. Champion the AM program within the corporation. b. Provide direction to service and asset managers. c. Monitor trends and sustainability of the AM system and recommend improvements. d. Ensure that AM business processes and decision criteria adequately integrate different parts of the organization and address barriers to sustainability (e.g. integration of infrastructure and land use planning).	The AM steering committee has the following responsibilities: a. Prioritize the AM improvement plan. b. Coordinate and oversee corporate AM initiatives where integration across business units or service areas is desired, or where a standardized approach is required. c. Make recommendations on, and manage, the content of the AM policy and AM strategy, including the AM framework. d. Take any appropriate action necessary to ensure the smooth integration within and between AM system implementation and improvement projects. e. Advocate for AM within the organization, leading by example and setting expectations within teams. f. Manage the development of AM capacity and competency within the organization (i.e. increase the ability to do this work in-house). g. Monitor the progress and performance of the plans for AM program development and implementation, including line-of-sight between corporate and AM objectives. h. Conduct management reviews and internal audits of the AM system.
Program manager / AM coordinator Possible role holders: • Infrastructure assets manager • Department managers	The program manager is accountable to the AM steering committee for managing the implementation of the AM improvement plan, and for the sustainment and improvement of the AM system.	The program manager's responsibilities are to: a. Project manage the delivery of the prioritized AM improvement tasks, including the selection and leading of cross-divisional task-specific teams. b. Provide technical advice related to the AM system to asset managers and department staff. c. Collect tactical and operational-level feedback on the AM system performance, needs and improvement priorities. d. Coordinate AM training for staff.
AM network and implementation teams Possible role holders: • Asset managers • Technical specialists	The AM network and implementation teams are cross-departmental teams of AM change leaders and technical specialists, accountable to the program manager. These teams lead the development, implementation and improvement of different aspects of the AM system.	The responsibilities of the AM network and implementation teams are established as required by the program manager.

Some municipalities prefer to show the responsibility of the different role holders in the governance framework by using a RACI diagram linked to the various AM practices like the one shown below. RACI stands for Responsible, Accountable, Consulted, Informed.

Practice or process	Related accountabilities	Senior management team	AM champion	Steering committee	Program manager	AM network
AM strategy and policy	1. Lead discussions with council regarding the scope, objectives and policy goals for AM.	A R				
	2. Set AM policy and strategy (including principles, AM objectives etc.).	A		R		
	3. Identify key requirements and objectives for the AM policy and ensure alignment with other corporate objectives/plans.		A	R		
	4. Advise on strategic issues related to corporate decision-making, including ensuring that adequate investment planning and prioritization processes, criteria and guidelines are in place to support long-term cross-asset optimization and short-term prioritization and co-ordination of work programs.		A	R		
	5. Generate solutions to organizational challenges.		A	R		
	6. Provide direction on corporate-wide projects, initiatives and disputes.		A	R		
	7. Advocate and provide authentic leadership / leadership by example.	R	R	R	R	R
	8. Empower employees based on the city's core values.	R				
AM program development, implementation and management	1. Oversee the AM governance processes and structures within the organization.	A		R		
	2. Ensure that approved policy is properly and effectively implemented.		A	R		
	3. Approve municipal-wide AM priorities and resources.		A	R		
	4. Establish corporate AM program direction and set priorities.		A	R		
	5. Define and communicate AM roles and responsibilities.		A	R		
	6. Ensure practice consistency across the organization, as applicable and appropriate.			R		
	7. Ensure integration of the AM system with corporate policies, standard operating procedures, and management systems.	A		R		
	8. Understand, make decisions and coordinate various AM programs, projects and initiatives that have a broad corporate scope and influence.				A	R
	9. Maintain the necessary corporate capacity (including, but not limited to, resourcing, financial support, staff competencies, business processes, data and integrated information systems) to manage risk and support the elements and practices of the AM system.	A R				
	10. Develop corporate data governance. This includes creating guidelines and standards for collecting and storing asset data throughout the organization. It also includes documenting data systems being used for AM, and information about the content and quality of available information.				A	R
	11. Champion the AM program within the corporation.	R	R	R	R	R
Continual improvement of AM	1. Ensure that the implementation of the AM system serves the purpose and objectives of the AM policy.			A	R	
	2. Ensure that AM status/maturity assessments are completed on a regular basis to identify gaps and recommend improvement actions.			A	R	
	3. Undertake performance and quality reviews to monitor the achievement of AM objectives and ensure that the AM system is achieving intended outcomes.			A	R	
	4. Ensure that an improvement plan/roadmap is developed and maintained with clear targets, prioritized improvements, and well-specified deliverables.			A	R	
	5. Maintain peer relationships and understanding of evolving good practices, and ensure that the city's AM program is appropriately aligned with these good practices.			A	R	
	6. Steward and continually improve corporate AM program documents (policy, strategy, guidelines, standards, etc.).			A	R	
	7. Define and support activities that will sustain AM across the organization.				A	R
	8. Manage AM competency, capability and capacity within the organization.	A		R		
	9. Develop necessary training programs for development and ongoing support of the AM program.			A	R	
	10. Monitor and manage the effectiveness of the overall AM system in achieving and supporting organizational objectives.		A	R		
Sustainable practices	1. Establish sustainability goals for the AM program.			A	R	
	2. Assess whether AM outcomes are meeting the organization's sustainability goals.			A	R	
	3. Ensure that energy efficiency, other carbon footprint reduction initiatives, climate change adaptation and resilience, and other relevant council sustainability policies or goals are included in the asset management plans.			A	R	R
	4. Ensure that adequate corporate direction on long-term planning assumptions and sustainability policies is developed and provided to planning and investment teams.	A R				
	5. Ensure that the long-term plan is updated and aligned with the AM objectives.			A	R	
	6. Ensure the integration of long-term planning and triple bottom line (TBL) into AM practices.			A	R	
Risk management	1. Identify and manage risk in the AM system.			A R		
Stakeholder consultation/ communication	1. Identify, engage and inform internal stakeholders.		A	R		
	2. Identify, engage and inform external service and investment partners.		A	R		
	3. Oversee external stakeholder engagement practices.			A	R	
	4. Provide a communication/translation interface between political and administrative elements (via CAO).		A	R		

A = Accountable; R = Responsible

4.5 Risks when transitioning to your new governance structure

Implementing a new governance framework requires careful planning and consideration of the barriers and risks to success. The challenges and risks will be specific to each organization, but some common risk factors to think about include:
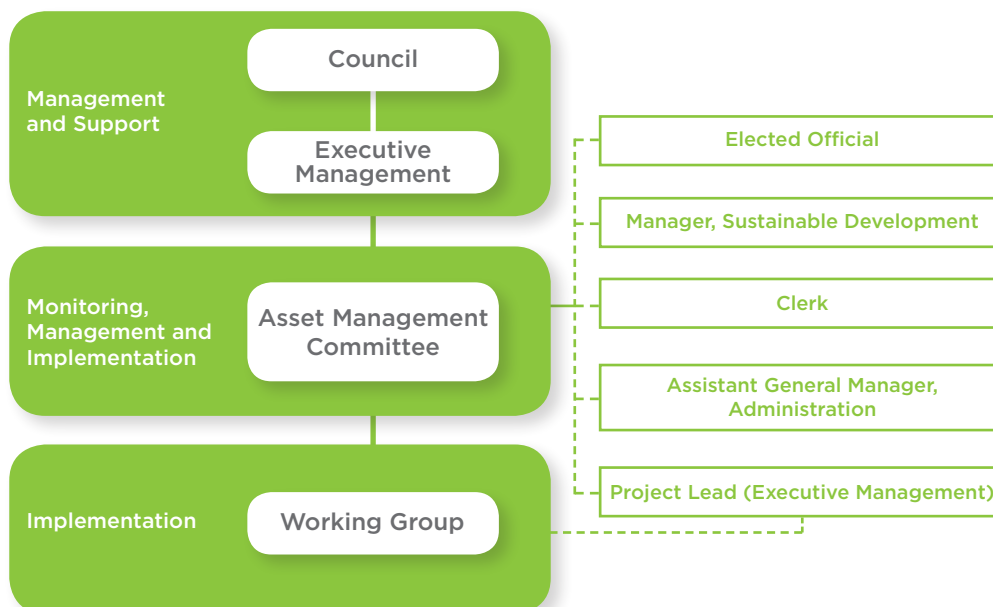
1. The level of AM awareness and readiness for change within the organization.

2. The degree of understanding of the AM roles and responsibilities throughout your municipality.

3. The size and geographic spread of your municipal staff and any resulting challenges in communication and coordination.

4. Attitudes to change within various parts of your municipality.

5. Perceptions of authority and bias amongst staff (particularly relevant when selecting the AM champion).

6. The capacity for existing staff to take on additional responsibilities and the ability of your municipality to fund and fill new positions such as the AM program manager or coordinator position.

Many of the above risk factors can be addressed by developing a communication and change management strategy at an early stage — one that is specifically focused on articulating a clear vision for asset management. It is also very valuable to find a champion who can build relationships with the prospective members of the governance structure, advocate for this vision and explain the requirements for governance through individual and group meetings.
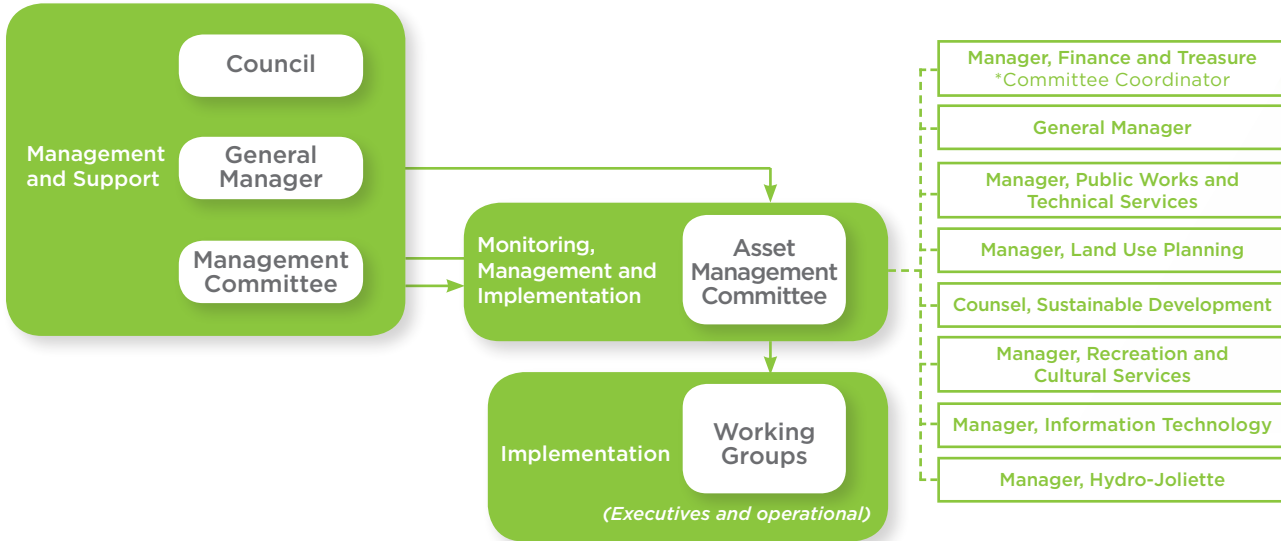
4.6 Examples of governance structures

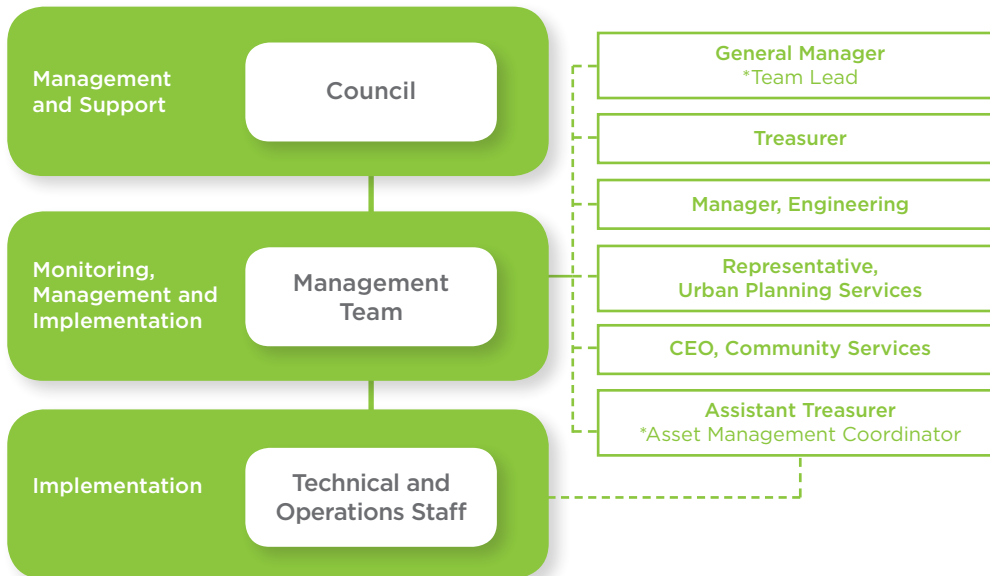Below are governance organizational charts developed by three LAMP municipalities:

Governance structure — City of Plessisville, QC (2016 Census population: 7,195)

Governance structure — City of Joliette, QC (2016 Census population: 20,484)

Management and Support
- Council
- General Manager
- Management Committee

Monitoring, Management and Implementation
- Asset Management Committee

Implementation
- Working Groups *(Executives and operational)*

- Manager, Finance and Treasure *Committee Coordinator
- General Manager
- Manager, Public Works and Technical Services
- Manager, Land Use Planning
- Counsel, Sustainable Development
- Manager, Recreation and Cultural Services
- Manager, Information Technology
- Manager, Hydro-Joliette

Governance structure — City of Dieppe, NB (2016 Census population: 25,384)

Management and Support
- Council

Monitoring, Management and Implementation
- Management Team

Implementation
- Technical and Operations Staff

- General Manager *Team Lead
- Treasurer
- Manager, Engineering
- Representative, Urban Planning Services
- CEO, Community Services
- Assistant Treasurer *Asset Management Coordinator

4.7 Additional resources

City of Melville, SK: Asset Management Governance Framework (2016 Census population: 4,562)

City of Revelstoke, BC: Asset Management Roles and Responsibilities (pp. 33–37) (2016 Census population: 6,719)

City of Airdrie, AB: Governance Structure, Roles and Responsibilities (pp. 56–63) (2016 Census population: 61,581)

Chapter 5: Building support for your asset management policy and strategy

This chapter provides guidance on how to build support for your asset management (AM) policy and strategy, so that AM becomes embedded into decision-making in your municipality. It includes tips on communicating to council and staff regarding AM.

In this chapter:

5.1 Why communicate your asset management policy and strategy?

In developing your asset management policy, strategy and governance structure, you have taken a big step toward a more strategic and consistent approach to your infrastructure investment decisions. In order to build support for your policy and strategy and ensure that council and staff adhere to its principles and practices, it will be critical to ensure that they understand their roles and responsibilities.

Every municipality has a different approach to internal and external communications, and different resources and capacity. Use the questions below as a guide to determine the approach that will work best for your municipality. Consider:

- ✓ Do we need a communications plan for AM?

- ✓ Who will develop it?

- ✓ What will be the key messages? Are they different for each department?

- ✓ Who will be responsible for sharing information about AM (e.g. the CAO, each member of the AM committee, each department head)?

- ✓ How will we communicate information on AM to staff (e.g. through email, newsletters, departmental meetings or workshops) and how frequently will we do it?

- ✓ How will we keep council engaged and informed about AM (e.g. through quarterly or semi-annual briefing notes or through presentations on progress)?

5.2 Understanding the perspectives and interests of council and staff related to asset management

A range of people in your municipality will be involved in asset management, either at the level of strategic decision-making, in management or at the operational level. While they have very different roles, they will all need a clear understanding of how they should contribute in order for your AM system to work.

Communication is more effective when the key messages appeal to the interests and perspectives of their target audiences. In addition, making progress on AM often requires a change management approach, because staff will be required to adopt new business processes and practices.

The LAMP municipalities of Dieppe, NB, Joliette, QC, Bromont, QC, and Plessisville, QC, took some time to think about the interests and motivations of council, the chief administrative officer or city manager, and the staff in different municipal departments. The charts below list some examples of the perspectives they identified. You may wish to consider these examples as you develop communications strategies and activities to support change across your municipality.

What key messages, education or training would you develop for each group in your municipality?

5.2.1 Understanding council perspectives

Key issues and obligations
- Offer citizens a level of service and added value
- Respect the strategic plan
- Adopt and follow the sustainable development plan
- Maintain a balanced budget

Asset management benefits
- Better spending control
- An improved long-term planning approach
- A global vision of needs
- Transparency through comprehensive information
- A decrease in unforeseen expenditures

Corporate objectives
- Preside over a city that shines and differentiates itself from others
- Maintain the city's attractiveness
- Lead a city that adheres to standards and maintains its eligibility for federal funding
- Minimize risk

Personal objectives
- Getting re-elected by citizens
- Having projects within the municipal boundaries
- Maintaining a sense of transparency in the decision-making process
- Note: Asset management may be seen as a threat because it holds elected officials in check

Influence areas
- The city's strategic direction and senior management
- The reputation of the city
- Relationship with other orders of government and stakeholders
- Dialogue with the public and the media
- Access to infrastructure programs

Asset management experience
- Varies across Canada
- May have broad knowledge of the concept without knowing full scope
- May have had to react to crises and emergencies
- Topic may have arisen or been central in annual budget debates

5.2.2 Understanding senior management perspectives

Key issues and obligations
- Implement the council's vision by respecting the strategic plan
- Oversee the administration of the municipality
- Implement policies and maintain regulatory compliance

Asset management benefits
- Better control and knowledge of the status of assets and expenses
- Improved long-term planning and stability
- Ability to explain issues and challenges
- Indirect support to human resources management

Corporate objectives
- Develop the municipality and continually improve quality of life
- Leave a positive legacy
- Retain internal expertise and develop staff
- Empower managers to improve service delivery

Personal objectives
- Being recognized as a good manager and peer leader
- Being in control and not letting chance affect planning
- Applying innovative management practices
- Maintaining peer and council trust

Influence areas
- Mobilization of the management team and council
- The culture of the organization, which affects the internal political dynamics of council and the administration
- Relationships with partners and stakeholders
- The investment plan and budget

Asset management experience
- Varies, may include submission to council of asset management plans and long-term financial plans
- Accountable to council
- Challenging decisions about trade-offs when finalizing investment plans

5.2.3 Understanding the perspectives of the finance department

Key issues and obligations
- Prepare financial reports and capital asset account
- Design revenue collection plans and pricing rates
- Balance and manage debt
- Submit the budget to council

Asset management benefits
- Improved monitoring of operating costs
- Streamlined cost savings
- Long-term forecasting visibility of needs
- Improved dialogue with council
- Mitigated financial risks

Corporate objectives
- Respect standards and complete audits
- Report on the fair value of assets
- Understand cash flow needs
- Avoid spending spikes

Personal objectives
- Maintaining peer and council trust
- Avoiding controversy
- Maintaining license and advancing professional career

Influence areas
- Financial structure (debt and reserve)
- Financial accounts and books
- Financial strategy
- Budget preparation, submissions and approvals

Asset management experience
- Varies, may include development of a long-term financial plan derived from an asset management plan
- Development of an investment plan

5.2.4 Understanding the perspectives of management

Key issues and obligations

- Work in accordance with standards, regulations, and policies
- Operate as per departmental budget allocations
- Maximize the quality of service delivery

Asset management benefits

- Access to information that supports analysis and development of recommendations to senior management and council
- Improved and structured dialogue on finances and operations

Corporate objectives

- Conduct projects that support the community and that are on-time and on-budget
- Support sound selection and approval of projects by council

Personal objectives

- Maintaining peer and council trust
- Avoiding controversy
- Conducting complex projects on time and within prescribed budgets

Influence areas

- Project identification and development
- Budget preparation and departmental operational program

Asset management experience

- Varies, may include development of asset management plans or strategies
- Life cycle, risk, and asset-related analysis
- Customer service and cost management

5.2.5 Understanding the perspectives of urban planners

Key issues and obligations
- Showcase the city by developing the built environment and judicious bylaws
- Plan land use to support a sustainable living environment

Asset management benefits
- Access to information for analyzing the long-term impact of development
- Improved and structured dialogue regarding development vs. maintenance

Corporate objectives
- Have development plans approved
- Simplify the development permit process

Personal objectives
- Being recognized by peers for planning that leverages best practices and maximizes the quality of life of the community

Influence areas
- Strategic planning of the city
- Zoning and development permits, land use
- Relationship with developers
- Community engagement and visioning

Asset management experience
- Varies, may include some knowledge of the concept without full knowledge of its scope
- Annual budget debates regarding the maintenance of existing infrastructure vs. development

5.2.6 Understanding the perspectives of public works staff

Key issues and obligations
- Maintain business licenses, assets and project tracking
- Provide service and resolve any service delivery issues despite constraints
- Communicate relevant field information to management
- Implement the decisions of others

Asset management benefits
- Better projects and day-to-day operations planning
- Clarity of tasks and better quality of the information required
- Awareness of other services to better coordinate maintenance needs of assets

Corporate objectives
- Have the resources and the time to maintain assets and levels of service
- Comply with operating permit requirements and preserve them
- Reduce the number of complaints

Personal objectives
- Being involved in, and consulted on, the business of the city
- Being recognized as an important resource for the effective operation of the city

Influence areas
- The city's ability to provide services and complete projects (critical human resource factor)
- The image of the city locally and the satisfaction level of the citizen
- Maintaining operating licenses
- Producing quality information needed for asset management

Asset management experience
- Maintenance and repair
- Validation of technical studies with knowledge of the field history
- Awareness of citizens' perception of the levels of service delivered

5.2.7 Understanding the perspectives of sustainability staff

Key issues and obligations
- Build the legacy for the next generation and respect the sustainable development plan
- Encourage adaptation to climate change through risk management
- Ensure management of natural assets, including any legislative requirements

Asset management benefits
- Life cycle management approach in decision-making
- A tool to integrate sustainable development objectives throughout the municipal administration

Corporate objectives
- Make the city shine as a sustainable development leader
- Create a pleasant living environment that is equitably funded
- Become a "green city"

Personal objectives
- Ensuring that everybody has a stake in the issue of sustainable development
- Being able to convey ideas to others while being well-understood

Influence areas
- Strategic planning with council and the community
- Consultation and awareness internally and externally about sustainable development issues
- Developer and council initiatives

Asset management experience
- Varies, may include creation of a greenhouse gas emission inventory
- Identifying or advocating for more expensive "green" projects with long-term potential impacts vs. less expensive ones with short-term impact
- Internalizing the costs of environmental externalities

5.3 Additional resources

Examples of presentations to council

Kings County, NS, presentation to council

Municipality of North Grenville, ON, presentation to council

Appendix: Abbreviations and glossary of terms

Abbreviations used in this guidebook

AM = asset management

AMP = asset management plan

FCM = Federation of Canadian Municipalities

ISO = International Standards Organization

LAMP = Leadership in Asset Management Program

SAMP = strategic asset management plan

Glossary of terms used in this guidebook

This list includes terms commonly used in asset management and reflects the language agreed to by participating municipalities from FCM's Leadership in Asset Management Program.

An **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. (Source: ISO 55000:2014)

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. (Source: LAMP municipalities, 2017)

An **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. (Source: ISO 55000:2014)

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 organizational objectives should be set out in an AM policy. (Source: ISO 55000:2014)

An **asset management (AM) strategy**, also referred to as a **strategic asset management plan (SAMP)**, is documentation that specifies: how organizational 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. (Source: ISO 55000:2014)

An **asset management (AM) framework** is a basic structure underlying a system, concept or text (Oxford Dictionary, 2018). The LAMP municipalities used the term "AM framework" to refer to a high-level overview of their AM system, often in the form of a graphic illustration, 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 about its AM objectives, AM system and application of AM practices. Governance in

general refers to how society, or groups within it, organize to make decisions. (Source: Institute of Governance, Canada, 2018)

An **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. (Source: ISO 55000:2014)

Climate change adaptation refers to actions taken to help communities and ecosystems cope with changing climate conditions. (Source: United Nations Framework Convention on Climate Change, 1992)

Climate change mitigation refers to a human intervention to reduce the sources or enhance the sinks of greenhouse gases. (Source: United Nations Framework Convention on Climate Change, 1992)

Community refers to everyone that lives in, works in, operates businesses in or visits a municipality. Community can also be segmented into specific stakeholder groups (e.g. residents, industry, developers, small businesses, etc.).

Ecosystem services are broadly defined as the aspects of ecosystems that provide benefits to people. For example, streams are a natural asset that provide a stormwater management service of conveyance and flow control. These benefits and services may include processes such as climate regulation, stormwater reduction and nutrient cycling as well as recreational, aesthetic and cultural benefits.

Infrastructure refers to the physical assets developed and used by a municipality to support its social, cultural and economic services. (Source: LAMP Municipalities, 2017)

Levels of service 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. (Source: ISO 55000:2014)

Life cycle cost is the sum of the acquisition cost and ownership cost of a product over its life cycle — it reflects the evolution of a system, product, service, project or other human-made entity from conception through retirement. (Source: AM Body of Knowledge (AMBOK), AM Council of Australia, 2018)

Maintenance is the process of preserving a condition or situation or the state of being preserved (Oxford Dictionary, 2018). Maintenance can be planned/scheduled or reactive.

Municipal natural assets are the stock of natural resources or ecosystems that is 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. (Source: Defining and Scoping Municipal Natural Assets, Municipal Natural Assets Initiative, BC, 2017)

Rehabilitation refers to works to rebuild or replace parts or components of an asset to restore it to the required functional condition and extend its life. This could also incorporate some modification. (Source: AM Body of Knowledge (AMBOK), AM Council of Australia, 2018)

Replacement refers to the complete replacement of an asset that has reached the end of its [useful] life so as to provide a similar or agreed-upon level of service. (Source: AM Body of Knowledge (AMBOK), AM Council of Australia, 2018)

Resilience is the capacity to recover quickly from difficulties (Oxford Dictionary, 2018). A resilient community has the capacity to survive and adapt to chronic stresses and acute shocks, like population growth or decline, aging populations, influxes of new immigrants, economic swings, or climate change impacts like severe storms, flooding or melting permafrost. It requires a holistic understanding of the systems within a community and their interdependencies and risks. Local governments can use asset management to become resilient by moving from a reactive approach that deals with stresses as they arise, to a more proactive one that anticipates and considers these stresses during planning. (Source: *Building Sustainable and Resilient Communities with Asset Management*, FCM 2018)

Strategic asset management plan (SAMP): See definition for asset management (AM) strategy.

Sustainability is meeting the needs of the present without compromising the ability of future generations to meet their own needs (Environment and Climate Change Canada). Achieving sustainability means making sure we are making the right decisions today that will have a positive effect in the long term. The three main pillars of **sustainable development** include economic growth, environmental protection, and socio-cultural equity. (Source: United Nations Brundtland Commission)

Alternative definitions:

Sustainability is based on a simple principle: Everything that we need for our survival and well-being depends, either directly or indirectly, on our natural environment. To pursue sustainability is to create and maintain the conditions under which humans and nature can exist in productive harmony to support present and future generations. (Source: US Environmental Protection Agency)

Sustainable development is about maintaining or improving the standard of living by protecting human health, conserving the environment, using resources efficiently and advancing long-term economic competitiveness. It requires the integration of environmental, economic and socio-cultural priorities into policies and programs and requires action at all levels — citizens, industry, and governments. (Source: Environment and Climate Change Canada)

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. (Source: City of Vancouver Engineering Department)

Triple bottom line expands on the traditional view of an organization's financial bottom line by measuring 1) socio-cultural factors, 2) economic impact to the community, and 3) environmental factors, and committing to include all dimensions in decision-making.

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 takes certain costs that are usually overlooked into account, such as environmental impact and social costs. (Source: **www.investopedia.com**)

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