Development of Asset Management Policy, Governance and Capacity

Participant Workbook

This initiative is offered through the Municipal Asset Management Program, which is delivered by the Federation of Canadian Municipalities and funded by the Government of Canada.

fcm.ca/assetmanagementprogram

Canada FCM FEDERATION OF CANADIAN MUNICIPALITIES FÉDÉRATION CANADIENNE DES MUNICIPALITÉS

About FCM

The Federation of Canadian Municipalities (FCM) is the national voice of municipal government. In leading the municipal movement, FCM works to align federal and local priorities, recognizing that strong hometowns make for a strong Canada.

About AUMA

Founded in 1905, the Alberta Urban Municipalities Association (AUMA) represents 269 urban municipalities including cities, towns, villages, summer villages, and specialized municipalities. AUMA works with federal and provincial governments and business and community stakeholders on a broad range of issues to strengthen the economic, social, cultural, and environmental vitality of its member municipalities.

About RMA

The Rural Municipalities of Alberta (RMA) is an independent association representing Alberta's 69 counties and municipal districts. Since 1909, the RMA has helped rural municipalities achieve strong, effective local government.

About IAMA

Infrastructure Asset Management Alberta (IAMA) represents the greater community of any person, organization or agency engaged in or has an interest in infrastructure asset management.

The 'community' is supported by the IAMA Working Group which is a voluntary group of representatives from associations, local governments, agencies, private industry and/or first nations brought together to recognize and integrate the administrative, technical, operational, financial, and planning aspects of asset management.

Table of Contents

Contents

Welcome

Welcome to Development of Asset Management Policy, Governance and Capacity. This course is designed to help you, as municipal staff, complete the asset management process for your municipality. It will include a one-day workshop in February, a two-day workshop in April/May, and a one-day workshop in September, with guided support in between. You will receive additional content at each workshop that will build on your knowledge and assignments that will support the development of asset management capacity in your organization.

This course is intended to build on your understanding of asset management and to help your municipality develop an asset management policy, strategy, and internal asset management team. As you progress through the course, you will see that the Federation of Canadian Municipalities (FCM) Municipal Asset Management Program (MAMP) Asset Management Readiness Scale (hereafter referred to as the AMRS) is a great resource to support municipalities in improving their asset management practice. After this course, not all municipalities will be at the same level on the AMRS; however, all participants should take away the skills and knowledge required to progress on the scale.

Some participants may already be familiar with asset management, while others may be new to the subject. This course will allow all participants to build their knowledge and skills and share their experiences with their colleagues and peers. The agenda includes opportunities for group discussions and exercises, as well as assignments that can be completed after the course to help you build your municipality's asset management capacity.

Your participation in the course is invaluable to you and your colleagues. Over the next few months, you will share your thoughts, insights, and experiences. We will also be asking for your feedback through evaluations at each workshop. Your responses will help us continually improve this material for future deliveries.

Using the Workbook

The following icons will help you to navigate the workbook and presentation and workbook.

Learning Goal

Specific learning outcome to be achieved.

Activity

Individual or group exercises designed to put learning into practice.

Glossary

Definitions of words and phrases used in the course material.

Did You Know?

Interesting facts and insights on asset management.

Try it out

Actions, questions, or perspectives to put into practice back at work.

Resources

Additional reference materials and tools related to the topic. Web addresses for the resources can be found at the back of the workbook.

Reflection

A place to write your own reflections and insights on how you might apply a concept or idea to your own municipal circumstances.

Module 1—Define Asset Management

After completing this module, participants will achieve the following learning goals:

- Define asset management, service, risk and cost
- Articulate the benefit of asset management and the role it plays in sustainable service delivery
- Describe the tools used in an asset management process and what they are used for
- Describe the implementation of asset management

LEARNING GOAL: Define asset management, service, risk and cost

Municipalities in Alberta are empowered to provide a range of services to their communities through provincial legislation, specifically the Municipal Government Act (MGA). A major component of service provision is taking care of the assets that make those services possible. An asset is a physical component of a system that enables a service or services to be provided. For example, pipes are the assets that deliver water service to homes, roads and traffic lights are the assets that make transportation possible, and recreation centres are assets that allow recreation services to be provided to the community.

Municipalities have been managing assets for a long time. However, asset management is more than just managing assets — it is a systematic, organized, and integrated approach.

Activity

1. As a group, develop a 3-minute presentation on the definition and benefits of asset management. Make the benefits as specific to your municipalities as possible. Include something unique in your presentation to make it interesting. Ideas include: an anecdote from your municipality, "top 5 myths about asset management", etc.

Asset management is a way of thinking about how assets are used to deliver services to a community and its citizens. Asset management helps a community make sure that its physical assets can deliver the levels of service that councils have committed to. Asset management allows a community to examine the services it delivers, understand and manage the risks it faces, and take a holistic view of its assets. Asset management is about making sure communities are sustainable into the future.

"The process of making decisions about the use and care of infrastructure to deliver services in a way that considers current and future needs, manages risks and opportunities and makes the best use of resources"

Handbook & Toolkit for Alberta Municipalities

Asset management is about using systems and processes to balance **cost, risk,** and **level of service** to make informed **decisions** that make sense for your community in the long run. Asset management is not just for large communities. All municipalities make decisions about their assets. The systems and processes don't need to be extensively detailed or expensive; you can start with what you have. Your municipality likely already using processes for things like planning and budgeting. Asset management is about evaluating and updating those processes to ensure they systematically consider the right kind of information and take a long-term perspective.

WHAT ASSET MANAGEMENT IS:

- a process,
- a means to an end,
- practices for good decisions,
- an ongoing process.

WHAT ASSET MANAGEMENT IS NOT:

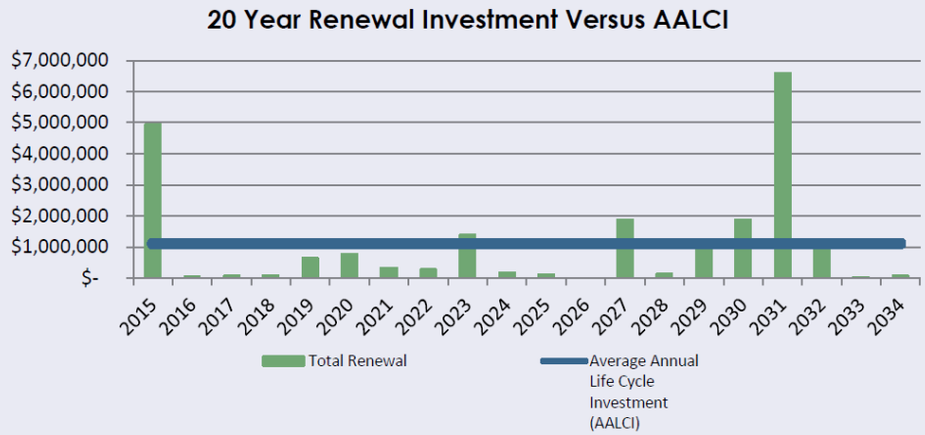
- a single project or plan,
- an end in itself,
- a software program

Asset management means focusing on things like:

- The purpose of your organization and how assets support community goals
- Value, purpose, and long-term outcomes of assets
- Managing risks and understanding the context of risks
- Holistic approaches to budgeting
- Collaboration across municipal service areas and with service partners

When many people think about asset management, they think about developing inventories of assets, doing condition assessments, and undertaking maintenance management tasks. They think this is the job of someone in public works and that they don't need to be involved. Asset management does involve those tasks, but more importantly, it is about connecting asset lifecycle activities to the bigger picture. It requires the integration of information from planning, engineering, public works, and finance.

Renewal investment is the investment needed to replace or renew existing assets that have reached the end of their service life. For example, if a pipe was constructed in 1940 and is expected to have a useful life of 80 years, the full cost of replacing that pipe would be shown in 2020. The total cost shown for each year is the total cost of replacing all assets in a community that are at the end of their service life. It is common to see spikes because often significant infrastructure investments are made at the same time and so the infrastructure reaches the end of its service life at the same time.



Graphic from Building Community Resilience Through Asset Management: A Handbook and Toolkit for Alberta Municipalities.

Average Annual Life Cycle Investment (AALCI) is the average annual investment needed to renew or replace assets at the end of their service life. It's the amount that a municipality would save each year in reserves if the strategy was to pay for the replacement of the assets in full at the end of the assets lives. For example, if a segment of pipe cost $80,000 and the pipe is expected to last 80 years, you would theoretically save $1,000 per year for the life of the pipe so you could pay to replace it at the end of 80 years. The total AALCI for a municipality is the sum of the average for all infrastructure. Since it is very uncommon for municipalities to fully fund replacement of infrastructure from reserves, this is more of a theoretical value that is used for communication and planning purposes only.

This is a common approach to considering the amount that will need to be invested in assets over time. The sample chart below shows the renewal investment and AALCI for a town's asset.

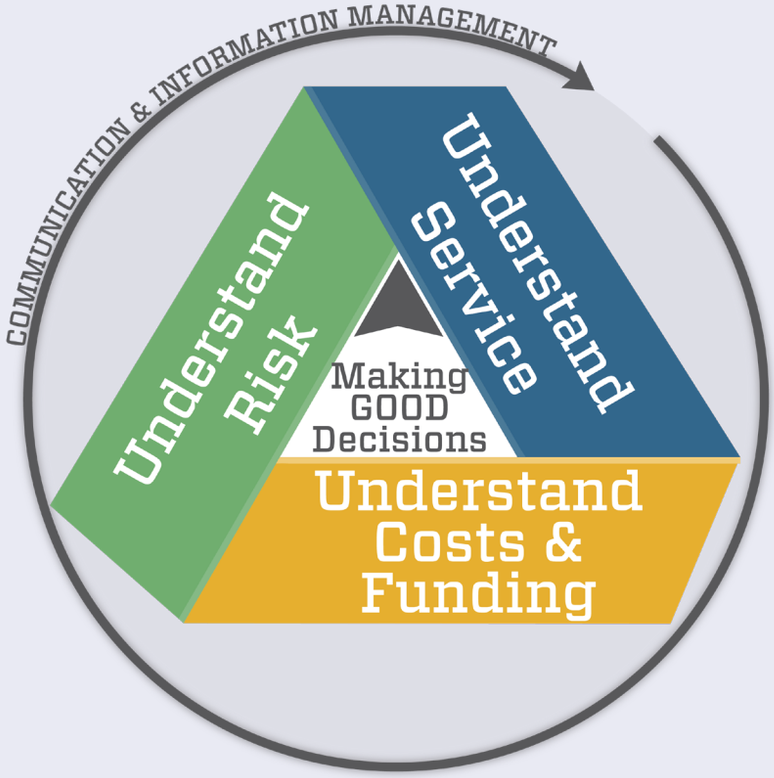
Group Discussion

Do you have this kind of information in your community?

How would you respond to this if you received this information about your community's infrastructure?

Key discussion point

Asset management is a scalable process of ongoing continuous improvement. The purpose of asset management is not to eliminate your deficit, the purpose is to manage it by understanding and evaluating trade-offs between service, risk, and cost.



Source: Alberta Handbook & Toolkit

There are lots of ways of approaching asset management – but at even the most basic level, asset management is always about informed decisions with an understanding of service, risk, and cost.

The difference between an entry level approach to asset management and a mature, in-depth approach is not what content is considered, but increased data accuracy, levels of analysis, integration, documentation, and formalization of processes.

Try it out:

Different people often hold different perceptions of what asset management means based on their role and responsibilities. Ask your coworkers what they think asset management means, and how it could help your community.

Service

Sustainable service delivery is at the centre of asset management. Having asset management processes in place will help you to be clear on what services you're providing, at what level, and how the service needs may change over time. Constituents are the recipients of services and will therefore have an important role in determining what services will be delivered and to what level. It is important that constituents are engaged somehow in these decisions – either directly or through their elected officials. However, decisions about service delivery should always be made in the context of the cost of delivering services and the associated risks.

The **level of service** is a measure of the quality, quantity, and/or reliability of a service from the perspective of residents, businesses, and customers in the community.

Understanding service means having a consistent understanding of:

- The types of services you provide;
- The groups of residents, institutions and businesses you provide them to;
- The level of service that is currently delivered (performance); and
- The level of service that you're aiming to provide (target)

Levels of service ultimately link back to what customers experience and care about. Municipalities can practice thinking critically about level of service and understanding service through a community lens. A strong understanding of level of service needs to be clear and consistent among council, staff, and the public.

Activity

1. What are the services you provide in your community?

2. Why do you provide those services?

3. Who are your service delivery partners – currently and in the future?

4. What mechanisms do you use to define and communicate the level of service?

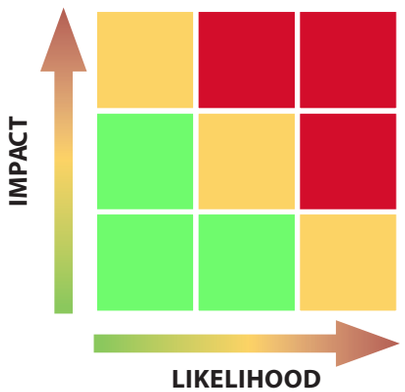
5. Where is there some lack of clarity about the level of service the community provides or is aiming to provide?

Risk

Risks are events or occurrences that will have undesired impacts on services. When assessing risk, it is important to consider the impact of the risk and the likelihood of occurrence.

Understanding risks and where they are is important to managing assets effectively. Risks cannot be entirely eliminated, and sometimes mitigating risks can be expensive. As an organization, you may decide that some risks should be tolerated. Tolerating risks is perfectly acceptable, as long as it is an informed decision to tolerate risk.

Risk = Impact × Likelihood



Asset risk describes the risk of an asset failing to perform the way you need it to deliver a service. For example, a pipe bursting, roadway washing out, or lagoon reaching capacity all describe types of asset risks.

Strategic risk describes a change that would affect your ability to achieve municipal objectives. For example, the public works manager retiring without a transition plan in place, a declining revenue base, or changing regulations are strategic risks.

Managing risk is not always as straightforward as eliminating risk, and every community and asset has a different level of **risk tolerance**. In some cases, a community can mitigate risks but not eliminate them altogether. For example, a community that faces drought conditions each

summer can enact water conservation measures and educate the public, but may not be able to prevent the need to enforce water restrictions. In other cases, the level of risk maybe manageable, but a municipality may choose to tolerate the risk because other priorities are more urgent. For example, a side road in poor condition may be a nuisance for the small portion of the population that uses it, however, investment in repairing the road may be delayed to pay for the cost of repairing a burst pipe.

Asset management involves the consideration of a community's risk tolerance: the level of risk the municipality can reasonably handle. Attempting to reduce risk as much as possible is prohibitively expensive, and unnecessary. Municipalities and their constituents understand that things aren't going to be perfect 100% of the time – but the important things need to be pretty good most of the time. Your risk tolerance will be informed not just by the magnitude of the risk (the consequence it will have and the likelihood that it will happen) but also the cost of managing or reducing the risk. This is an example of a trade-off between risk and cost.

Climate change is an example of both asset and strategic risk. It is an asset risk because changes to temperature and weather patterns may impact the ability of your infrastructure to perform as it was intended to; for example, increased rainfall may overwhelm your stormwater system because it was built for a different capacity and range of events. Climate change is also a strategic risk because it changes the assumptions under which services are delivered, which may force your community to draw resources away from some goals towards others. For example, if your community's water source is becoming compromised by hotter, drier conditions, resources may need to be shifted to find another water source or better secure the existing one.

Risk management refers to the process of identifying and assessing risks, identifying and evaluating actions that can be taken to reduce risk, and implementing the appropriate actions. Risk management is an iterative process, meaning that the desired result is achieved through repeated efforts, rather than through a single action.

Activity

How is risk identification and risk management identified in your capital plan? How is risk tolerance set in your community? Is there consistent understanding of which risks are acceptable risks, and which are not?

Cost

In asset management, costs include the financial and human resources required throughout the lifecycle of the asset. We intuitively understand that there is a connection between cost, level of service, and risk, but we often limit our considerations to the immediate situation. When considering cost in trade-offs, it's important to think about the following considerations:

- Replacement costs of current assets and the timeline for these costs
- Capital costs of new assets and timeline for these costs
- Expected operating and maintenance (O&M) costs for current and new assets
- Actual operating and maintenance costs for current assets
- Relationship between capital cost and O&M costs (full lifecycle cost)
- Past and projected trends in O&M costs over time
- Revenue sources for future capital and operational costs

Activity

1. How does your capital planning process evaluate trade-offs between service, cost, and risk? What is working well in this respect, and what could be improved?

2. How are revenue sources evolving in your community, and how might that impact service sustainability in the future?

There is no 'right answer' when it comes to evaluating trade-offs. What is important is that there is information and a process available to consider the trade-offs effectively for today and the future.

LEARNING GOAL: Articulate the benefit of asset management and the role it plays in sustainable service delivery

Benefits of Asset Management

Asset management helps municipalities deliver services effectively, efficiently, and in a way that protects the long-term interests of the community. It helps you to deliver the services that are important to your community, get the biggest bang for your buck from your assets, and set your community up for success.

Align the organization with things that matter most.

At its core, asset management is about service delivery. Effective service delivery requires that priorities are set and decisions are made through a lens of what matters to constituents in the short and long term. It also helps reduce duplicate work and unnecessary interruption to constituents' access to certain services. For example, asset management would help a community prioritize projects that align with the community's vision and priorities outlined in its strategic plan, or help prioritize a water main replacement based on risk to service outages and coordinate such work with road projects to minimize traffic disruption and lifecycle costs identified in the community's transportation master plan. Asset management should integrate and align with other municipal plans.

Defensibly prioritize projects and allocate resources.

Asset management helps communities decide what infrastructure needs to be replaced, when, and how much needs to be saved for infrastructure renewal. Taking a systematic approach supports efficient use of resources and equips a community with strong evidence that can be used to communicate why decisions are made, particularly when the need for investments is unclear or controversial to the public. For example, asset management can be used to help a municipality identify the need for water main replacement throughout the community, and plan for these costs. It can also be used to evaluate competing priorities, such as a town hall upgrade or the development of a recreation trail.

Systematically manage risks to service delivery.

Asset management supports the management of both **strategic risks** and **asset risks** – leading to sustainable service delivery. For example, many communities in Alberta face risks related to their roads. There are risks that specific roads will fail because they are in poor condition (asset risk) and there is an overall concern that deteriorating road conditions will lead to complaints from the public and potential safety issues (strategic risk). There isn't enough money to fix all the roads, especially given all the other financial demands on the community (also a strategic risk). The level of service for roads is decreasing and there are weight restrictions on some roads with no plans to correct them (risk to service sustainability). Asset management helps a community identify overall funding needs for sustainable service, prioritize where and when money should be spent repairing roads to appropriately manage risks, identify how much should be saved for long-term maintenance, and understand how to effectively respond to public complaints.

Demonstrate accountability to community.

Asset management establishes a clear and systematic approach to making decisions, prioritizing resources, and planning for the future, which in turn demonstrates municipal accountability. For example, asset management will help a municipality explain to a small (but vocal) group.

Position your community to take advantage of provincial or federal government incentives.

There may also be opportunities to align with government incentives for asset management. Provincial and federal governments are increasingly looking for indicators that a local government is practicing asset management in grant applications. The 2014-2024 Gas Tax Agreement between Canada and Alberta included requirements that Alberta develop an approach to asset management. In 2016, the federal government approved Alberta's approach, which includes the following components:

- Publishing an inventory of current asset management tools and resources
- Supporting the development of new tools that support asset management
- Enhancing existing advisory services and training opportunities
- Assessing existing gaps and expanding tools and resources where required
- Reviewing corporate planning requirements as part of the MGA review

ASSET MANAGEMENT IN OTHER PROVINCES

Each province has committed to making progress in asset management through their respective Gas Tax Agreements with Canada, and each province is choosing their own approach. For example, in British Columbia, the emphasis is on making progress on achieving outcomes defined in the BC Asset Management Framework. In Ontario, there are requirements to have specific asset management plans that demonstrate their infrastructure funding needs. The specific provincial requirements may change over time as each province learns what is effective in their context.

Activity

1. What are the most important objectives for your community to achieve from asset management?

2. In the next one year?

3. In the next five years?

4. Into the future?

LEARNING GOAL: Describe tools used in an asset management process and what they are used for

Asset management isn't just about planning and policy documents. However, as part of a robust process, these can support decision-making by documenting community goals related to assets and providing a roadmap for how to achieve these goals. We're going to spend some time reviewing the different tools available to guide asset management and how these are used. It is not necessary to have all of these documents to practice asset management. You can start with where you are and build your practice, for example, using an asset management lens in decision-making, building an inventory, and starting the asset management planning process. For reference, examples of policies and strategies can be found in the Resources section.

Asset Management Policy

An asset management policy is used as the connection between council's strategic guidance and staff's operational processes. Asset management as a practice touches on many parts of a municipality's operations, and so there are various ways a municipality may choose to adopt policy related to asset management. A municipality may choose to develop a standalone asset management policy, or may choose to develop or update a series of policies related to areas like finances, human resources, training, etc. to incorporate an asset management lens.

The specific way that policies are organized is not important (whether asset management is covered in one policy, or many policies) – as long as it makes sense for your municipality and the policies are followed. The content and purpose of the policies are important though. Policies related to asset management should accomplish the following:

- Outline an organization's commitment and mandated requirements for asset management
- Link to the organization's strategic objectives
- Be shaped by the organization's values and priorities, as well as community objectives
- Outline principles to guide decision-making about assets (for example, incorporate lifecycle costing, adopt a risk based approach to setting priorities, etc.)
- Outline the corporate approach to funding and financing asset acquisition, renewal, and operations and maintenance

Council's role is to provide the direction and strategic guidance that is captured in the policy.

Asset Management Strategy

As part of developing and maintaining asset management practices, council may be asked to endorse an asset management strategy. The asset management strategy is primarily for staff use, but council may provide input on the document. Council's endorsement is an important signal that the implementation of the strategy is important to the municipality. Implementing the strategy may require some re-alignment of staff and financial resources, so it is important that council knows about the asset management strategy being adopted. The asset management strategy should accomplish the following:

- Outline the framework and approach for implementing the asset management policy/ policies
- Serve as the conceptual structure for the asset management system (series of practices and processes developed by the organization)
- Define the key components of the asset management system and interactions with other organizational processes (such as capital planning, budgeting, financial planning, etc.)

- Identify objectives (specific, measurable outcomes required of assets and asset management) and reporting requirements
- Provide an overview of current corporate assets, services, risks, costs, and funding
- State status of corporate asset management practices
- Identify goals (the general intent of your strategy, what you want to achieve at a high level) and timelines for the goals
- Outline the approach that you will take to improve asset management practices
- Outline relationships between other corporate initiatives or plans (such as the Municipal Development Plan, the Integrated Community Sustainability Plan, the Intermunicipal Collaboration Framework, etc.)

Asset Management Plan

An asset management plan supports the implementation of the asset management strategy. An organization may have one asset management plan, or it may have one for each grouping of assets. It is unlikely that council will be involved in the development of the asset management plan – council's direction should be provided through the policy and strategy. However, it is important for council to know whether or not the municipality has an asset management plan(s), and how these plans have been used to support processes like capital planning and budgeting. Asset management plans may also be useful in providing information about cost, service, and risk to support council in evaluating trade-offs in decision-making. Staff may provide updates on the progress of the asset management plan.

Asset management plans will do the following:

- Outline specifically how asset management practices and processes will create, maintain, and renew infrastructure and other assets
- Provide comprehensive information about assets, their condition, and how they are performing
- Identify the current level of service performance and desired level of service
- Categorize asset risks and strategic risks
- Define capital and operational projects required to deliver service and mitigate risks
- Define current and projected costs and funding
- Provide a timeline for implementation
- Articulate the consequences of not following the plan

Software

For some people, when they think about asset management, they immediately think about databases, inventory, and the never-ending quest for good data. Data and information are important—good data ensures that your decisions are based on a solid understanding of your assets. However, it is important to remember that data is just one component of asset management, and data collection is an ongoing process that you can start and improve over time.

Tools are important, but asset management software is best used when there are good processes in place already. Before investing in new software, figure out what your organization needs by reviewing what data you have and what you need to collect and keep track of moving forward. For more considerations in selecting a software, see FCM's questions to ask before your municipality considers asset management software, which is included in the resources section of this binder.

This section will review various aspects of data and information involved in asset management. It is not meant to provide a comprehensive review of how to collect, store, and use data – that will be up to staff in your organization.

Collecting data is often a major hurdle to asset management, but it can start simply and does not have to be overwhelming.

Activity

1. Look through example policies and strategies provided in the Appendix section at the end of your binder. Evaluate what you like and don't like about each, and why

LEARNING GOAL: Describe implementation of asset management

One of the most common questions about implementing asset management is where to begin. Implementing asset management can start with whatever step makes most sense for your organization. Understanding what is driving the desire to implement asset management and what you want to achieve can be helpful in this decision. However, if you're still not sure where that might be, a potential pathway has been outlined below. This pathway shows you where to start, and is also a roadmap for continuous improvement.

Regardless of where you start, if the data, plans, policies, software, and tools that you create don't impact the decisions made about asset construction, operation, maintenance, or replacement, then you are not actually implementing asset management. Just developing a plan or policy alone is not implementing asset management.

Implementation

1. Identify a champion and build a team

   Building a team and the support network you need (internal and external). The team should include someone who knows about finance, operations, planning, and engineering. The champion needs to be able to bring people together and keep it going.

2. Assess assets

   Bring together available information on your assets to get a high-level snapshot of what you own, the level of service you're delivering, asset risks, and costs. Compile it into a central inventory or location. Use the information you have as a start. You can improve it later.

3. Assess asset management practices

   As a team (and maybe even more broadly) assess your current practices related to understanding services, risks, and costs, and making decisions. You might already be doing asset management in certain areas, but calling it something else. AssetSMART is an assessment tool that can be used for this assessment.

The minimum factors for success are:

A champion

You need someone who can drive asset management forward. The department or title of this person doesn't matter, but they need to be good at bringing people together.

A team

The champion will be supported by a cross departmental team. At a minimum, the team should include someone from finance, public works, engineering, and planning.

Support from management and council

Since asset management is ultimately about decision making, it is very difficult to be successful in implementing asset management without support from management and council. You might not have this support from the very beginning, as some up-front work might be needed to frame the issue and build buy-in. You shouldn't invest much time or money in developing expensive plans or collecting data without senior support.

4. Identify priorities for improvement

   Based on your assessment of assets and asset management practices, select priorities for improvement. These might be capital or operational projects to mitigate risk or increase service, or they might be initiatives for improving understanding of service, risk, or costs and funding.

5. Implement and monitor

   Implement what you've planned to address your top priorities. This might include capital projects, conducting maintenance, updating or maintaining data, or developing policies, strategies, or plans.

Ongoing decision making

Alignment with regional service delivery

Many communities have assets that also contribute to regional service delivery – for example, some communities own the sanitary sewer collection in town that connects to a regional treatment facility that services several communities. When making decisions about these shared assets, it is important to think about the impacts to the decisions about the individual municipality's assets, and vice versa.

For example, if some of the communities that connect to the regional wastewater treatment facility started to experience increases in infiltration and inflow to their collection system during rainfall events, the regional facility's ability to handle the increased capacity demands would be reduced. This could eventually trigger the need for a facility expansion. Since that facility is a shared asset, the risk and cost associated with changing the service would need to be shared by all parties. Alternatively, the municipalities that are experiencing the increases in infiltration and inflow could investigate ways to improve their collection system to reduce infiltration and inflow contributions to the regional system. Both of these approaches are ways to address the challenge of increased infiltration and inflow, and should be evaluated with an asset management mindset on the scale of the individual municipality as well as with service delivery partners.

Communication for good decision making

To realize all the efforts put into developing your asset management team and tools, it is critical to be able to communicate information in a way that they understand, so that they can use what you prepare in their decision-making. Your council may not have the same background in infrastructure design and management that you do, so you need to be able to communicate with them about assets and asset management in a way that relates back to the services being provided to the public. You can help your council in many ways, such as:

ENGAGING COUNCIL IN ASSET MANAGEMENT

"Council has the final say in major decisions about service, risk, and cost – and therefore it is critical that council is informed and engaged on an ongoing basis about asset management."

Alberta Handbook & Toolkit, pg. 23

- Raise council's awareness of asset management. Educate them on what you are learning in this course as well as others you may have taken;
- Hold briefing sessions with your council to share general information on asset management and engage them in discussions about the state of the community's services and assets and how that translates to service delivery to the public;

- Encourage your council to consider level of service and risk when making decisions on planning, service, and financial matters. Continue to link levels of service to cost, ensuring that they fully appreciate that higher service increases cost, and vice versa;
- Highlight the links between council's strategic priorities and asset management
- Discuss the needs of the organization to start implementing an asset management policy and asset management strategy. Ensure that they are aware of the need for a cross-functional team: although this may require resources, it will ultimately lead to better and more sustainable outcomes;
- Engage your council in a discussion over the significant risks that face your community, and what you are doing to manage them. Ensure that they are aware of the role they play in risk management; and
- Report annually on the state of your assets: ensure council knows their condition and what long-term investment may be required.
- Celebrate successes in asset management with your council, including milestones met, costs saved by extending asset lifecycles, or processes that were made easier due to progress in asset management.

Try it out:

Include an update on your attendance at this course in your next council meeting, including the specific benefits that your community will see out of improving asset management. Ask your council about how they think asset management could help them in their role as decision-makers.

Discussion Point

Your asset management team may not be limited to your municipality. By thinking beyond our local areas, we are able to collaborate with our neighborhoods to achieve greater economies of scale and better service delivery. There are many services that can be delivered across municipalities or regions, such as water, sewer, and solid waste. Municipalities can share the costs and risks associated to their assets, while delivering a more consistent level of service throughout the region.

Asset management systems can help you and your partners in service delivery identify where there are services that could be better shared and to work together to make the most efficient use of your pooled resources.

Partnering with your neighbors to create intermunicipal agreements promotes regional cooperation, can reduce the costs and risks of a service, and increases the level of service.

Reflection:

Which services are you currently delivering regionally? How are decisions about that service made? Do you see opportunities to incorporate asset management principles into these decisions?

Information Management

Appropriately accurate information is an important support to good decision-making. To support those decisions, information must be collected, consolidated, organized, and accessed by those that need it – it's all about getting the right information to the right people, at the right time.

Source: Alberta Handbook & Toolkit

1. Collecting Information

Asset management practices involve collecting and consolidating information about the municipality's assets and services so that it's available to inform decision-making. This information doesn't need to be perfectly accurate – starting with even anecdotal information or estimates from knowledgeable staff provides value to decision-making.

The level of detail will depend on your needs and resources. For example, if you are trying to develop a long-term projection of what your asset replacement costs might be, assets can be grouped into large and general categories – there is no need to get into specific details because things will change over time and your aim is only to develop an estimate to help you plan. However, if you're trying to decide which water mains should be replaced over the next two years, you will need more specific and accurate detail about size, location, fittings, connections, and condition.

You may have high levels of detail for some types of assets, and low levels of detail for other types of assets – it all depends on what is needed to reasonably inform decisions.

2. Consolidation and organizing Information

Once information is collected, it needs to be consolidated so that it can provide a snapshot of the state of the organization's assets and is accessible for decision-making. The information should be compiled and organized in a way that is appropriate to the municipality. Specialized software may be preferred, but basic Geographic Information System (GIS) information with an Excel inventory can be good enough for many small communities, and a great place to start for some larger communities.

3. Storing and Accessing Information

Staff should know what information is available, how accurate it is, and what limitations there are to the information. When information is shared or accessed across departments, there should be effective communication about information needs.

4. Updating and Improving Information

Information will need to be updated as circumstances change. Regular updates ensure that information remains usable. Again, council's role is not to update or improve information; council supports staff and provides the resources they need for updating and improving information, e.g., through budgeting for resources to support asset management practices.

Information doesn't need to be completely accurate, it needs to be appropriately accurate. What is appropriate depends on the nature of the decisions it will be informing. High stakes decisions require higher accuracy information. For example, having the accurate location of water main valves is important because valves need to be accessed quickly in the event of a main break. But having the precise location of every park bench in the city is less important; it's likely sufficient to know the number of benches in each park.

This is a process of continuous improvement – information doesn't need to be perfect from day one.

Activity

1. What do you envision implementation of AM will look like at your organization?

2. What are some ways you think you might be able to measure implementation of AM?

5. Opportunities to use existing data

"There is a perception that asset management requires a lot of detailed data about all of your assets – but this information can be time consuming and costly to collect. Just like asset management, information management is a process of continuous improvement. It's best to start by pulling together all of the data and information you already have to see what it tells you about your services, risks, and costs, and then to prioritize improving information where it's going to make the biggest improvement to your decision-making."

Alberta Handbook and Toolkit, pg. 19

Start where you are! Assessing the data you have to work with today is part of assessing your current state of asset management. Information will need to be updated as circumstances change, Regular updates ensure that information remains usable.

In this course, we will not be getting into the specifics about developing your asset inventory. If you would like to learn more, refer to the *Alberta Handbook and Toolkit, pg. 23*.

Module 2 – Define human and financial resources required for asset management

After completing the module, participants will achieve the following learning goals:

- Describe the roles and responsibilities of stakeholders in asset management
- Describe the attributes of a successful asset management team
- Estimate Financial Resources Required for AM

LEARNING GOAL: Describe the roles and responsibilities of stakeholders in asset management

Asset management is collaborative in nature and there will be many different stakeholders that play a role in driving the AM system.

Council	• Champions asset management in the community. • Provides leadership through setting direction and relevant policies. • Acts as a steward of community services. • Supports building community resilience. • Considers asset management information and mindset in day-today decision-making. • Allocates resources towards asset management through budgeting.
CAO	• Employee of, and accountable to, council. • Responsible for working with administration to implement council direction. • Directs and supports staff in developing appropriate asset management processes and systems and shares information with council on asset management progress.
Staff	• Develops and implements asset management practices. • May be involved throughout the asset management process, including background research, data collection and management, community engagement, risk analysis, level of service reviews, capital planning, and monitoring of practices. • Accountable to the CAO, not council.

Community constituents **(including residents, businesses, and institutions)**	• Receive services. • Pay rates and taxes. • Are the "why" of service delivery. • When community members are unhappy, the elected official may be their first point of contact. Information and accountability are important to the relationship between the elected official and community members. Asset management helps to provide this information and demonstrate accountability.
Partners **(such as other municipalities, other levels of government, or private service providers such as EPCOR Utilities)**	• May work with the municipality to deliver a service. In this case, the municipality will still need to steward sustainable service delivery. • Partnerships may be used to deliver services to the public, or even to achieve asset management objectives, such as an up-to-date database of asset information. • An Intermunicipal Collaboration Framework may identify opportunities and strategies for partnership among municipalities. • In cases where partnerships relate to infrastructure-based services, it is important to identify who in the partnership will be responsible for asset management of joint assets.
Consultants	• May be hired to provide specialized asset management services or for other aspects of service delivery where asset management may be relevant (e.g. establishing utility rates, etc.).
Federal and provincial governments	• Have implemented incentives for municipalities to develop asset management processes. • Communities receiving grants from other levels of government may be required to demonstrate their need for the investment by describing their asset management practices.

Activity

Explain the role of each group, who could be a part of each group, and the implications on the success of the AM strategy:

1. Council and chief administrative officer (CAO)

2. Senior management team (SMT)

3. AM champion (AMC)

4. AM steering committee

5. AM implementation teams

6. AM cohort learning network

Activity

1. What will you need to do to build organizational support for your AM policy and strategy?

LEARNING GOAL: Describe the attributes of a successful asset management team

Asset management is intended to build your municipality's capacity to make better organizational decisions. Communication and information management are a key focus of this practice and lay the foundation of AM practices. Decision-making is improved when the right people have the right information at the right time.

In order to support this goal, requires a process of communication and ongoing information management – supported by a culture of teamwork. Asset management is not about having perfect information. It is about ensuring that decisions are made using the best information available, and then improving information where appropriate.

> "Making decisions requires that the right information reaches the right people at the right time. Working across disciplines and departments is required to make this happen."
>
> *A Handbook & Toolkit for Alberta Municipalities*

Building a team

Asset management processes can be scaled according to the size and capacity of any municipality. You don't need to be a big city to have an asset management team, though your team will look different from theirs. It's important that each municipality designs an asset management system that meets their organizational needs and abilities.

Municipalities with smaller staff and capacity will probably have asset management embedded into departments, whereas larger municipalities may have a specific role dedicated to asset management. Either way is acceptable, and still forms a team!

When building your AM team, it is helpful to keep in mind what you will be trying to achieve and what resources you will need to get there. Some communities may choose to appoint or hire a project leader that is dedicated to the task of asset management whereas other communities will draw on existing staff to take on leadership roles within their department. In both circumstances, a culture of teamwork and communication is necessary to deliver the most pertinent information for decision-making.

Cross-functional groups will reflect the size of your community: in smaller communities, it may mean the CAO and the public works manager working together; and in bigger communities, it may mean having a representative from each relevant department meeting regularly. Regardless of the number of participants on your team, you will need cross-functional representation and a champion to drive initiatives forward.

Your AM team will require a minimum involvement of staff who have knowledge in the following areas:

- finance
- public works
- engineering
- planning

All these different perspectives will probably have different objectives for asset management. For example, finance may want to explore long-term financial planning, and public works may want to investigate a new system for organizing and directing repair work. This is absolutely ok – and is actually necessary – for your AM team. Having an interdisciplinary team helps to identify the bigger picture of an approach that can meet multiple, diverse objectives.

Building corresponding competency in people and leadership

Building a team that will lead the implementation of the AM system will require setting up cross-functional groups with clear accountability and ensuring adequate resourcing and commitment from senior management and council. In addition to identifying the players (or roles) that are needed on the team, you also need to think about the competency and skills of these players.

When considering the competencies of your AM champion and team, keep in mind these key attributes for success:

- Leadership qualities, ability and influence to motivate the broader team towards improvement in asset management,
- Equipped with an understanding of asset management and how it connects from policy to specific activities,
- Ability to communicate asset management approaches, progress, and challenges to others throughout the organization,
- Clear accountability and commitment to working together to advance asset management.

Additionally, the successful AM team will also possess the following characteristics:

- Ability to work together and promote a culture of communication,
- Considers and gives weight to all the perspectives and functions that are represented,
- Collective sense of accountability to asset management and improvement in asset management.

Resourcing and commitment

You probably have a dream team in mind for your AM strategy. It's important to think through what resources and support they'll need in order to be successful. This includes both the hard things like financial resources required, as well as the softer things like support for committing part of their time to asset management, as well as opportunities for training and skill building, and a support network that they can bounce ideas off.

Council plays a critical role in setting the tone for what is important in a municipality. Council's leadership is influential and can be very impactful in moving an organization along in developing and implementing asset management practices. Ensuring that you have Council's support to secure the resources and support for your AM team, as well as to support required policies and strategies, are vital steps to making sure that staff's efforts will lead to meaningful results.

Activity

1. How have you assigned responsibility for AM in your organization to date? What do you have that is working well, that can be leveraged? What gaps do you need to fill?

LEARNING GOAL: Estimate Financial Resources Required for AM

The basic requirements to getting started

Starting your asset management plan may not be as hard as you think. However, there are a few basic steps that you will want to complete before launching your asset management strategy:

1. Identify a champion that is committed to driving your asset management practice forward. The most important attribute of a champion is their ability to mobilize their team to work collaboratively.
2. Identify a team that will support the project across departments of your organization. Specifically, you will need to draw on expertise representing finance, public works, engineering, and planning.
3. Ensure there is support from management and council.

The success and viability of an AM system depends on the commitment from council to support the resources required for the development and implementation of the asset management process. Before expending time and money in developing expensive plans or collecting data, ensure there is support from senior management and council. Securing council support for the initial development of the system and for future years of operation and investment will help ensure that there is adequate momentum to move forward. If your council is currently not aware of asset management and its benefits, some basic investment may be needed to raise awareness with council before they are able to make the informed decision to commit their support to asset management.

No matter how you decide to build your team, it is important to understand the investment in resources, staff time, and other investments that your AM strategy will require. Understanding these inputs will help you create a realistic budget that is defensible to council, meets your team's needs, and aligns your team for success.

Levels of investment

"In building asset management practices, investments may include data collection and management, software programs, staff time, and/or consultants. Each of these resources can cost either a little or a lot – depending on how much infrastructure you have, the current state of your data, and what your needs are" (Handbook & Toolkit for Alberta Municipalities).

The level of investment that is made will determine what how much time it will take to reach your asset management goals. However, this will not necessarily have a bearing on your success. For example, if you consider a bicycle versus a helicopter as different levels of investment in your asset management system, both will get you to where you need to go. However, the helicopter will get you there faster and cost a lot more than a bicycle.

THE BICYCLE. Costs basically nothing. Gets you moving, but not that fast.

Use the tools in this toolkit to get started with incorporating asset management into decision making with the information you already have.

THE BUS. Entry level option that gets you where you need to go.

Invest in some training or some advisory support to help you understand where you're at and develop a tailored roadmap for moving forward with carefully selected initiatives.

THE CAR. More options for going where you want, but costs more.

Invest in data management tools, collecting condition data for critical assets or those near the end of their life. Develop or update infrastructure plans.

THE HELICOPTER. Gets you wherever you want, quickly. Really expensive and special operations skills required. May be excessive if your needs are basic.

Comprehensive system of complete and current data for all assets, integrated with financial systems and maintenance management systems. Detailed asset management plans for all asset classes and an integrated corporate level asset management plan.

Source: Alberta Handbook & Toolkit

Not all organizations require a high level of complexity to meet their asset management needs. Identifying what you need from asset management will help you understand how much it might cost.

Try it out:

Talk to neighbouring communities to see what they've done for asset management, and if they have some information or tools that can be shared and leveraged.

When you're thinking about what resources you'll need to get your asset management systems going, make sure you're thinking about:

- Staff time and capacity: how much time will members of our asset management team need to focus on asset management? Do they have that time available currently? Do they have the skills they need to do this, or do they need some training?
- Systems, processes, and tools: do we need to invest in any tools to support our efforts, such as an asset management software? Do we need to hire some specific external help to help us develop new processes, perform assessments, or develop plans?

Once this level of investment is decided, it is crucial to ensure that there are adequate resources to support staff to meet the desired outcomes.

"Asset management processes are most effectively built through continuous improvement, so you may start at the entry level and make small investments over time to improve your systems and processes. The important thing is to get started (Handbook & Toolkit for Alberta Municipalities)."

Module 3 – Articulate current state and conditions for success

After completing the module, participants will achieve the following learning goals:

- Define measuring and monitoring in the context of asset management
- Describe the five competency areas of asset management AND assess current state on the AMRS
- Define conditions for success

LEARNING GOAL: Measuring and monitoring

How will you know when you are successfully implementing asset management, or if you need to course-correct?

Developing a process to measure and monitor the status of asset management objectives and practices is key to maintaining momentum, especially at the start of your asset management journey. In asset management, you can measure and monitor progress in the process, the actions, and the outcomes.

The process: this includes the organizational tools and systems you have in place to implement asset management, like your policy, strategy, and team. You can measure progress in your processes using tools like the AMRS, or Asset SMART.

The actions: this includes specific activities you complete, and the (usually) quantitative measurements that go with them. Examples of things to measure include lane-km of road repaired, length of pipe replaced, or facilities refurbished.

The outcomes: this speaks what impacts your processes and actions have on the services that are delivered. Examples of outcomes include fewer reactive or emergency repairs, and therefore fewer interruptions to service, or staff are able to complete more repairs in the course of a year, because their work is more directed. A great tool for measuring outcomes is the Service Sustainability Assessment Tool, available on the Asset Management BC website: https://www.assetmanagementbc.ca/resources/#toggle-id-12 (under the "Service Sustainability Assessment Tool"

Here are some questions to help you think through what success in asset management looks like for you:

1. Assess current state - Where are we now?

   When assessing current state, it is important to think about all the areas that contribute to asset management. There are several comprehensive tools available for you to use to assess your current state, including the FCM AMRS and AssetSMART.

2. What direction do we want to go?

   Your asset management approach needs to be in alignment with your organization's higher goals. This is where your asset management policy and objectives provide strategic direction and connection, without getting into the details of exactly how you're going to get there.

3. How do we want to get there?

   You may want to tackle all facets of asset management at once, or you may want to focus your efforts on improving things one at a time. Either way is acceptable – as long as it is realistic and achievable. Articulating an asset management strategy and roadmap can help you identify the intermediate milestones and corresponding measurements in between your current and desired states.

Remember: asset management is a journey, not a destination. Successful implementation of asset management is much less tangible (or glamorous!) than cutting a ribbon on opening day of a new facility. Thinking about how you want to measure progress at the beginning of your journey will make it much easier for you to feel successful and communicate your progress to others.

Continual improvement, monitoring and innovation

Creating SMART goals

SMART metrics are helpful in practical implementation of your asset management strategy and roadmap. Periodically measuring the same things in the same ways can clearly communicate progress.

Some examples of SMART goals for asset management:

- By the end of the summer, we will collect all of our hard copy drawings into a centralized place, and will contact an external consultant to learn about what it will take and how much it will cost to turn this information into a GIS database.
- By the end of the third workshop in this series, we will have a draft asset management policy that is ready to be taken to council.
- Starting at our next council meeting, we will add a regular asset management item to the agenda to update council on our progress in asset management.

A SMART goal is:

Specific – how will we know when we have achieved our objective?

Measurable - how will we communicate progress?

Attainable – is this something that we can achieve from our current state?

Relevant – is this important to those that are affected?

Timely – when are we going to do this by?

Did You Know:

FCM's Building Blocks of Asset Management contains an action checklist and action planning worksheet that could provide some inspiration for your own SMART metrics.

Key areas to measure

How do you know what's important to measure? The simple answer is, you measure what's important!

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

FCM's How to develop an asset management policy, strategy, and governance framework, pg. 45

An example:

You've decided you are going to develop your first asset management policy.

How will you know if you're successful?

- Council passes the policy
- Staff use the policy to guide the development of asset management plans that directly consider level of service, risk, and cost

> While every municipality's goals for asset management may be different, many of the learnings and experience gained through the implementation of asset management are transferrable. Talking to your neighbours about their experience in implementation could go a long way in helping you craft your implementation approach, and vice versa.

Soliciting feedback

You will probably not be completely successful in everything you try to implement. Soliciting feedback from those affected by changes to evaluate whether you're on your way to achieving your objectives provides you with valuable information to either confirm your approach, or to guide you in course-correcting.

Remember: It is unreasonable to expect that you will get things right the first time, every time. Often we require the information gathered through an unsuccessful effort in order to know what we need to do to be successful.

Did You Know:

There are several communities of practice across Canada, including Infrastructure Asset Management Alberta (IAMA). IAMA represents individuals in organizations in Alberta who are interested in asset management, providing opportunities to share knowledge, learn, and network.

Data and information

Information can support you in quantitative measurement of your asset management progress. Some important things to know the status of include:

- Asset inventory data – completeness of inventory and condition information
- Performance data – for assets and/or services
- Financial Information – historical costs, expenditures, and funding

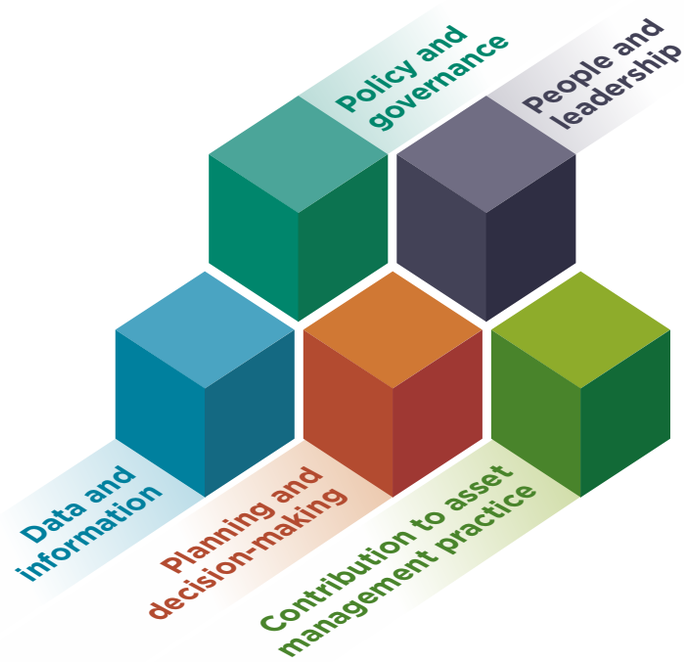
LEARNING GOAL: Describe the five competency areas of asset management AND assess current state

FCM's Asset Management Readiness Scale identifies five competencies that are required for successful asset management:

- **Policy and governance:** Putting in place policies and objectives related to asset management, bringing those policies to life through a strategy or framework, and then measuring and monitoring implementation over time.
- **People and leadership:** Setting up cross-functional groups with clear accountability and ensuring adequate resourcing and commitment from senior management and elected officials to advance asset management.
- **Data and information:** Using asset data, performance data, and financial data to support effective asset management planning and decision-making.
- **Planning and decision-making:** Documenting and standardizing how the organization sets priorities, conducts capital and operations and maintenance planning, and decides on budgets.
- **Contribution to asset management practice:** Training and staff development, sharing knowledge internally and participating in external knowledge sharing.

Start here

FCM's Asset Management Readiness Scale helps local governments measure progress on asset management in five **competency areas**. Each of these competencies is a building block. Together, the five building blocks form the practice of asset management.



These five competencies are key for sustainable service delivery. Asset management is not just about doing one thing — it is about building a robust understanding of asset needs and implementing good practices for caring for those assets. For a community to do this successfully, it must build skills and practices in each of the competency areas.

Definitions for key asset management terms can be found in the Key Concepts section of this document.

The five competencies

Policy and governance: By developing this competency, your organization is putting in place policies and objectives related to asset management, bringing those policies to life through a strategy and roadmap, and then measuring progress and monitoring implementation over time.

This competency helps you create the policy structure in your organization that lays out your asset management goals and how they will be achieved, leading to organizational alignment and commitment.

People and leadership: By developing this competency, your organization is setting up cross-functional teams with clear accountability and ensuring adequate resourcing and commitment from senior management and elected officials to advance asset management.

Asset management requires integration of multiple perspectives. At a minimum, your asset management team should be a representation of people who understand finance, decision-making, and the planning and operations of each relevant service area. This competency helps you create and sustain connections across teams and build leadership in asset management.

Data and information: By developing this competency, your organization is collecting and using asset data, performance data and financial information to support effective asset management planning and decision-making.

This competency helps you improve your data management practices so that you have the information you need about your assets when you need it.

Planning and decision-making: By developing this competency, your organization is documenting and standardizing how the organization sets asset management priorities, conducts capital and operations and maintenance (O&M) planning, and decides on budgets.

This competency helps you implement asset management, by ensuring that asset management policies, objectives and information are consistently informing organizational plans.

Contribution to asset management practice: By developing this competency, your organization is supporting staff in asset management training, sharing knowledge internally to communicate the benefits of asset management, and participating in external knowledge sharing.

This competency helps you build your organization's overall asset management practice by ensuring that internal stakeholders are well-informed and that your organization stays current with, and contributes to, leading practices, training and education.

Start here **4**

Activity

1. Refer to the FCM Asset Management Readiness Scale at the end of this section. As a group, think through each competency area and evaluate your community's current state.

Reflection:

Who else in your organization would have a relevant perspective to include in evaluating your current state on the Asset Management Readiness Scale?

Levels and outcomes

Each of the five competency areas is organized on a progressive scale of five levels. Each level is further broken down into three **outcome areas**. The outcomes describe milestones in asset management from initial investigation of practices, to adoption, and, eventually, to full integration of asset management practices into daily routines. **Each of these three outcome areas need to be achieved before a level has been achieved.** Referring to the outcomes described at each level can help you set goals and objectives, and design initiatives.

Outcome area A

Outcome area B

Outcome area C

The Asset Management Readiness Scale helps municipalities assess where they are and identify the areas they need to work on. Asset management is a journey and every community will be at a different stage in terms of which competencies they have developed, and which they have not yet focused on.

Learn more

FCM provides resources on asset management through the FCM's website.

Communities of practice are also great resources for additional asset management support. You can find a list of Canadian asset management communities of practice on the Asset Management Canada website.

Getting started

If your community is just getting started on asset management, and you're not sure how to get to Level 1 on the Asset Management Readiness Scale, we recommend you check out FCM's The Building Blocks of Asset Management: A How-to Guide for Reaching Level 1 of the Asset Management Readiness Scale.

Continual improvement

If your community's asset management practices are under way but you want to dig deeper into certain concepts or understand how asset management documents work together, we recommend FCM's How to Develop an Asset Management Policy, Strategy and Governance Framework: Set Up a Consistent Approach to Asset Management in Your Municipality, published on FCM's website in 2018.

Completing the Asset Management Readiness Scale for your community

Follow these steps to undertake the Asset Management Readiness Scale assessment for your community:

1. Bring together a cross-functional team of staff from the departments that are relevant to your asset management practices. The Asset Management Readiness Scale assesses the asset management practices across your whole organization — not just the practices related to one asset class. Therefore, it is important that a cross-functional team complete the Asset Management Readiness Scale, not one individual or one department.[1]

2. For each competency area, read through the descriptions of outcomes for each level. Make sure that everyone is on the same page about what they mean.

   You can start with the competency that resonates the most with your team. You do not need to go through the competencies in a specific order; they all work together.

3. Discuss your organization's current state in relation to each outcome and identify what has already been achieved.

4. Select the outcomes that describe where your organization is today. Use your outcome selections to determine your organization's level for the overall competency. You have completed a level once all outcomes for that level have been achieved. If you are still working on one or more of the outcomes for a level, select the previous level to indicate that you have fully achieved all outcomes in that level.

   If you are just getting started in a certain competency, select "Working on Level 1." If you're not sure how to start working on that competency, check out FCM's **The Building Blocks of Asset Management: A How-to Guide for Reaching Level 1 of the Asset Management Readiness Scale**.

5. Use the assessment page at the end of the Asset Management Readiness Scale to write down your levels for each competency area, document how you've achieved those levels, and identify potential actions for improving your organization's asset management practices.

You will get the most out of the Asset Management Readiness Scale by taking the time to work through it as a team and by thinking critically about where your organization is today. Assessing yourself at a lower level does not mean you are not managing your assets, only that you have work to do in formalizing your asset management program. Remember that this is a work in progress!

Over-assessing your organization's achievement will make it more difficult to understand where you should focus your efforts, resources and funding. It may also make it more difficult to identify areas of progress or communicate to staff and council the need for continued improvement in asset management.

1 In some communities it may be appropriate to include knowledgeable council members in conducting this assessment.

Using the results

The results of your self-assessment on the Asset Management Readiness Scale can be used to support your community's asset management practices in several ways:

1. Identify priority areas of improvement to help you plan for staff time and resource allocation.

2. Design initiatives to improve asset management practices based on which outcomes you want to work on.

3. Track your progress over time so you know if your activities are helping you improve, or if you need to make some adjustments.

4. Report on the achievement of outcomes to a variety of stakeholders: the internal team, CAO, council, FCM and other funders.

5. Use the shared language of the Asset Management Readiness Scale to talk to other municipalities about where they are and what they did to get there.

Planning for improvement

Each organization's progress in the competencies will depend on a unique group of factors. There is no need to progress through each competency to the same level. You may currently be much further along in some competencies than in others.

Additionally, your municipality may choose to aim for higher levels in some competencies than in others. For example, your community may aspire to reach Level 3 in data and information, Level 4 in planning and decision-making and Level 2 in policy and governance. Keep in mind that Level 4 of the Asset Management Readiness Scale is roughly aligned with the requirements of the ISO 55000 standard — which is a significant accomplishment.[2] It may not be necessary for your municipality to achieve the higher levels in the scale to meet the needs of your community.

2 Note that ISO 55000 has specific content, documentation, and review requirements that are not always explicitly included in this scale. For example, ISO 55000 has specific requirements on what information needs to be included in a policy, strategy and asset management plan. It also includes specific requirements around continuous improvement. If you are pursuing the ISO 55000 standard, you should refer directly to the ISO 55000 requirements.

Asset Management Readiness Scale

Policy and governance

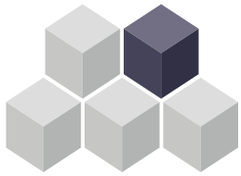
By developing this competency, your organization is putting in place policies and objectives related to asset management (AM), bringing those policies to life through a strategy and roadmap, and then measuring progress and monitoring implementation over time.

	Outcomes: Select the outcomes that your organization has achieved.				
Outcome areas	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Policy and objectives	☐ Senior management is committed to formalizing an **AM program**.	☐ We have drafted an **AM policy**. ☐ Senior management and council have endorsed the **AM policy**.	☐ We are starting to use our **AM policy** to guide our actions.	☐ We manage assets and services in accordance with our **AM policy** and organizational objectives.	☐ We continue to validate and refine our corporate, service and AM objectives based on the evolving needs of our community.
Strategy and roadmap	☐ We have identified the benefits that we want AM to deliver, and the benefits support organizational objectives.	☐ We have a strategy for our **AM program**. ☐ We have a draft **roadmap** that outlines our approach for the next 1 to 3 years.	☐ We have a **roadmap** that details the actions for implementing our **AM strategy** over the next 3 to 5 years.	☐ We are achieving our **AM policy** objectives. The necessary workflows, documents, and reporting tools are in place. ☐ We update our **roadmap** to address evolving needs.	☐ We follow our **roadmap** and continually improve our AM practices. ☐ We document improvements to our AM practices.
Measurement and monitoring	☐ We have identified short-term actions that will demonstrate early progress on AM.	☐ We are collecting baseline data on our current AM practices.	☐ We have established performance measures to monitor our asset management progress, outcomes, and the benefits to our community.	☐ We use performance measures to monitor AM progress, outcomes, and benefits.	☐ We monitor performance and use the feedback to prioritize and make ongoing refinements and improvements to AM practices.

Readiness level: You have achieved a readiness scale level when your organization can demonstrate achievement of all outcomes for that level.

Readiness level	Working on Level 1 ☐	Completed Level 1 ☐	Completed Level 2 ☐	Completed Level 3 ☐	Completed Level 4 ☐	Completed Level 5 ☐

People and leadership



By developing this competency, your organization is setting up cross-functional teams with clear accountability and ensuring adequate resourcing and commitment from senior management and elected officials to advance asset management.

	Outcomes: Select the outcomes that your organization has achieved.				
Outcome areas	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Level 5**
A **Cross-functional teams**	☐ We have identified the representation we need on our cross-functional **AM team**.	☐ We have a cross-functional **AM team*** that guides the planning and implementation of our **AM program**.	☐ Our **AM team*** works within our organization to lead, communicate, and support AM improvements and organizational changes.	☐ Our **AM team*** is permanent and tasked with guiding and supporting AM across the organization on an ongoing basis.	☐ Our **AM team*** guides and supports the ongoing improvement of AM within the organization.
B **Accountability**	☐ We have a champion who has been tasked with planning for our **AM program**.	☐ Our **AM team*** has a documented mandate to develop our **AM program**, which is outlined in a terms of reference and a one- to three-year **roadmap**. ☐ Our **AM team** is accountable to senior management and council.	☐ Our **AM team*** is accountable for implementing our **AM program**. ☐ AM roles and responsibilities are included in staff job descriptions.	☐ We have operationalized AM roles and responsibilities across our organization.	☐ We document changes to AM roles and responsibilities as needed to support our evolving requirements.
C **Resourcing and commitment**	☐ Council knows that resources must be dedicated to exploring the requirements for **AM** and for drafting an **AM roadmap**.	☐ Council demonstrates buy-in and support for AM and allocates resources (funding or staff time) to further develop the **AM program**.	☐ Council champions AM as a core business function and has approved funding to continue **AM roadmap** activities.	☐ Council funds ongoing AM monitoring and enhancement.	☐ The **AM team** measures and monitors progress. ☐ Council demonstrates commitment to ongoing improvement of AM practices.

Readiness level: You have achieved a readiness scale level when your organization can demonstrate achievement of all outcomes for that level.

Readiness level	**Working on Level 1** ☐	**Completed Level 1** ☐	**Completed Level 2** ☐	**Completed Level 3** ☐	**Completed Level 4** ☐	**Completed Level 5** ☐

* Note: Larger organizations may have both an AM team responsible for implementation and an AM steering committee to provide direction and oversee the work. Smaller organizations may group these functions together. This outcome may be better suited to an AM team or an AM steering committee, depending on the organization. In some small communities the AM team may be as few as two people.

Data and information

By developing this competency, your organization is collecting and using asset data, performance data and financial information to support effective asset management planning and decision-making.

	Outcomes: Select the outcomes that your organization has achieved.				
Outcome areas	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Level 5**
A **Asset data**	☐ We have **asset inventory data**, including approximate quantities of assets within most asset groups. ☐ We have some anecdotal information on asset condition. Some age information exists.	☐ We have a **basic inventory** of most **critical assets**, including information on general asset properties such as size, material, location and installation date. ☐ We are moving our data to a centralized location for use by the **AM team** (note: this does not require AM software). ☐ We have defined **critical assets** and have some information on asset condition for these assets.	☐ We have a consolidated, **basic inventory** of all assets. ☐ We have defined life cycle investment requirements for **critical assets**. ☐ We have standardized condition rating systems defined for most asset groups. ☐ We have asset condition information on all **critical assets**.	☐ We have expanded **inventory** data for some assets ☐ We have evaluated the life cycle investment requirements associated with **critical assets**. ☐ We update data according to cycles defined in our **AM plans** or **strategy**.	☐ We have expanded **inventory data** for most assets. ☐ We have evaluated the life cycle investment requirements associated with most assets.
B **Performance data**	☐ We have informal or anecdotal approaches for measuring asset or service performance.	☐ We have some information on performance of **critical assets**, collected from a variety of sources.	☐ We have defined **level of service** measurements for some service areas. ☐ We have captured data on current **level of service** performance for some service areas. ☐ We have reviewed service levels and asset performance with council.	☐ We have defined **level of service** measurements for critical service areas. ☐ We communicate the results from our **level of service** measurement program to staff and council regularly.	☐ We have defined **level of service** measurements for most or all service areas. ☐ We continually improve how we collect data on **level of service** performance.

	Outcomes: Select the outcomes that your organization has achieved.				
Outcome areas	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Financial information	☐ We have **financial information** on our assets, supporting minimum PS-3150 reporting requirements.*	☐ We have major capital renewal and operating & maintenance (O&M) expenditure data for some assets. ☐ We have a strategy to link AM and **financial information**.	☐ We have capital (new and renewal) and O&M expenditure data for most assets. ☐ We have linked AM and **financial information** for all **critical assets**. ☐ We can demonstrate the gaps between forecasted infrastructure needs and current spending levels.	☐ We understand the cost of sustaining current **levels of service** for all **critical assets**.	☐ We understand the trade-offs between investment and the **level of service** we deliver and use this to optimize our financial plans.

Readiness level: You have achieved a readiness scale level when your organization can demonstrate achievement of all outcomes for that level.

Readiness level	**Working on Level 1** ☐	**Completed Level 1** ☐	**Completed Level 2** ☐	**Completed Level 3** ☐	**Completed Level 4** ☐	**Completed Level 5** ☐

* PS-3150 is the Public Sector Accounting Board's standard guiding the treatment of tangible capital assets.

Planning and decision-making

By developing this competency, your organization is documenting and standardizing how the organization sets asset management priorities, conducts capital and operations and maintenance (O&M) planning, and decides on budgets.

	Outcomes: Select the outcomes that your organization has achieved.				
Outcome areas	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Level 5**
A **Documentation and standardization**	☐ Our asset planning approaches vary across the organization.	☐ Our departments follow a similar but informal asset planning approach. ☐ We evaluate investment needs and priorities based on a mix of structured and ad-hoc practices and criteria.	☐ We have a structured asset planning approach, but application is inconsistent. ☐ We set priorities using criteria based on organizational goals and objectives.	☐ We employ a consistent structured asset planning approach for each of our **critical services**. ☐ We set priorities using criteria that are fully aligned with our organizational goals and objectives.	☐ We employ a consistent structured asset planning approach for all services. ☐ We adapt our planning approach and criteria to align with evolving organizational goals and objectives.
B **Asset management plans**	☐ Our approach to asset renewal focuses on reacting to basic needs (e.g. growth, regulations and known problems). ☐ We evaluate priorities based on available information, staff experience, and input from council and management.	☐ We have draft **AM plans** for some asset classes, with forecasted financial needs based on estimated data.	☐ We have **AM plans** for **critical services**, based on a mix of estimated and actual data. ☐ Our **AM plans** include available information about **level of service** (current and target) and **risk** management. ☐ Our **AM plans** identify short-term issues and priorities.	☐ We have **AM plans** for most services based on actual data. ☐ Our **AM plans** include basic needs forecasting and **risk** management strategies for **critical assets**. ☐ Our **AM plans** are based on both short- and long-term issues and priorities. They balance short-term service objectives with longer-term goals and **risks**. ☐ We keep our **AM plans** up to date through normal business.	☐ We have **AM plans** for all services based on actual data. ☐ Our individual **AM plans** are integrated across services. ☐ Our **AM plans** include needs forecasts and **risk** management strategies for most assets. Plans address **risks** to both service and business goals.

	Outcomes: Select the outcomes that your organization has achieved.				
Outcome areas	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Budgets and financial planning	☐ We prepare annual capital and operating budgets based on historical values. ☐ We deal with new needs reactively, as they occur.	☐ We prepare annual capital and operating budgets based on a mix of historical values and new priorities.	☐ We prepare an annual capital budget based on an annual assessment of current needs. ☐ We have a 3-year **capital plan** that addresses short-term issues and priorities.	☐ We prepare annual needs-based capital and operating budgets that are based on an annual assessment of **risks** and current needs. ☐ We have a 5-year **capital plan*** and update it annually. ☐ We update our **long-term financial plan** (at least 10-year) annually and understand the risks associated with our investment gap.	☐ We prepare multi-year needs-based capital and operating budgets that are based on our short- and mid-term needs. ☐ We take a structured approach to address in-cycle changes.

Readiness level: You have achieved a readiness scale level when your organization can demonstrate achievement of all outcomes for that level.

Readiness level	Working on Level 1 ☐	Completed Level 1 ☐	Completed Level 2 ☐	Completed Level 3 ☐	Completed Level 4 ☐	Completed Level 5 ☐

* Communities may benefit from long-term capital plans that extend beyond five years to ten years or more.

Contribution to asset management practice

By developing this competency, your organization is supporting staff in asset management training, sharing knowledge internally to communicate the benefits of asset management, and participating in external knowledge sharing.

	Outcomes: Select the outcomes that your organization has achieved.				
Outcome areas	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Level 5**
A **Training and development**	☐ Our AM training and development approach is informal and largely driven by the personal initiative of staff. ☐ Some staff conduct targeted research, seeking out basic information on AM concepts and techniques.	☐ Our AM training and development requirements are defined by management based on short-term needs. ☐ Selected staff are trained on basic AM concepts. ☐ Council has opportunities to increase their understanding of AM concepts.	☐ We provide all staff with basic AM awareness training. ☐ Some staff undergo training on advanced AM concepts specific to their roles and responsibilities. ☐ Staff and council are able to communicate the value of AM in their own words.	☐ We define AM knowledge and skill requirements. A training plan is in place for all positions. ☐ Council, management and staff receive role-appropriate AM training to establish needed capacity across the organization.	☐ We train select staff members as internal experts to support the ongoing development of organizational capacity. ☐ Proactive, role-based training serves as a support for career development and succession planning.
B **Internal communication and knowledge sharing**	☐ We are aware of the need to mitigate the risk of losing information held in the minds of long-term staff.	☐ We mitigate the risk of losing information held in the minds of long-term staff, through improved record keeping.	☐ A culture of knowledge sharing is emerging internally, supported by official initiatives. ☐ We collect and maintain AM knowledge resources. ☐ We communicate the benefits of AM internally to staff and council.	☐ A culture of knowledge sharing exists and is supported by a mix of formal and informal initiatives. ☐ We disseminate AM knowledge resources within the organization.	☐ We capture AM knowledge and it flows freely throughout the organization. ☐ Staff leverage internal and industry knowledge and leading practice resources.

	Outcomes: Select the outcomes that your organization has achieved.				
Outcome areas	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Level 5**
External communication and knowledge sharing	☐ We are investigating AM-related organizations and resources.	☐ Staff or elected officials attend AM-related events. ☐ We share basic information on current capital projects with the public.	☐ We are members of one or more AM organizations and actively share our AM experience. ☐ We share basic information on our assets, the services we provide, and future needs with the public.	☐ We are actively involved in AM organizations and present at AM events. ☐ We share information with our peers on our experience, innovations and lessons learned. ☐ We rely on the data from our **AM program** to explain decisions to the public.	☐ We are a thought leader on AM within the municipal sector. ☐ We are active in coaching others to improve the overall body of AM knowledge. ☐ We communicate the benefits of AM to the public.

Readiness level: You have achieved a readiness scale level when your organization can demonstrate achievement of all outcomes for that level.

Readiness level	Working on Level 1 ☐	Completed Level 1 ☐	Completed Level 2 ☐	Completed Level 3 ☐	Completed Level 4 ☐	Completed Level 5 ☐

Source: Government of Nunavut

LEARNING GOAL: Define conditions for success

You've learned a lot today about what asset management is, why it's important, and what the minimum requirements are for getting started. Now what?

The objectives of this course are to advance participants in their asset management capacity, specifically in the areas of establishing and developing your asset management team, policy and strategy. Take some time to think through how you can take what you've learned back to your organization, and how you can work together with your neighbours to progress with each other's support

Reflection

1. How will the development of a policy and strategy draw on each of these asset management competencies?

2. How will you know if your AM Policy, Strategy and Team are successful?

3. For an AM policy and strategy to be successful in your organization, what attributes must it have?

4. What are other critical factors for success?

5. What would you hope to achieve through this program, and what might you need to do in between group sessions as a community?

6. Can you do any of these things with the support of your neighbours?

Reflection:

What did you learn today that surprised you? What would you like to know more about?

Looking forward…

The next workshop is going to focus on developing your asset management team and strategy. This workshop will provide you with the time and space to work on these things as a team, with access to tools, resources, and the experience of your neighbours and the facilitators.

Tasks to complete before the next workshop:

- Identify your asset management champion
- Talk to council about asset management, and provide an update on what you learned at today's workshop
- If you have one, review your asset management policy with your champion. If you don't have one, talk to your champion about what an asset management policy could look like for your municipality, and review the sample policies provided in the resources section.
- Check in with your neighbours to share progress and experience

Glossary

Asset: A physical component of a system that enables a service, or services, to be provided.

Asset life: The period from asset creation to asset end-of-life.

Asset life cycle: The stages involved in the management of an asset.

Asset management: A process of making decisions about how infrastructure is used and cared for in a way that manages current and future needs, considers risks and opportunities, and makes the best use of resources.

Asset management lens: Integrating asset management practices into decision-making. Specifically, thinking about what information is available, what additional information is needed, what trade-offs are being made, and what are the community's long-term goals and needs.

Asset management plan: Documented information that specifies the activities, resources, and timescales required for an individual asset, or a grouping of assets, to achieve the organization's asset management objectives.

Asset management policy: Outlines an organization's commitment and mandated requirements for asset management.

Asset management roadmap: Step-by-step plan guiding the actions, responsibilities, resources, and timescales to implement the asset management strategy and deliver asset management objectives.

Asset management strategy: Outlines an organization's approach for implementing the asset management policy.

Asset management implementation plan: Direction, framework, and approach for implementing the asset management policy to support strategic objectives and sustainable and effective service delivery.

Asset management system: The set of policies, people, practices, and processes that are used in asset management. An asset management system is not a software program.

Asset portfolio: Assets that are within the scope of the asset management system.

Asset register: A database or document containing specific information about the assets owned or controlled by an organization.

Asset risk: The risk of an asset failing to perform the way you need it to (e.g. a pipe bursts).

Average annual life cycle investment (AALCI): The average annual investment needed to sustain an existing asset over its service life and replace or renew the asset once it reaches the end of its service life.

Level of service: Levels of service statements describe the outputs the organization intends to deliver to customers and other stakeholders. Levels of service typically relate to service attributes such as quality, reliability, responsiveness, sustainability, timeliness, accessibility and cost.

Life cycle costs: The total cost of an asset over its life, including capital, operation, maintenance, renewal, and decommissioning costs.

Likelihood: The probability that an event might happen.

Maintenance: Any activity performed on an asset to ensure it continues to deliver an expected level of service until it is scheduled to be renewed, replaced, or disposed of.

MAMP Readiness Scale: A tool developed by the Federation of Canadian Municipalities that guides the assessment of a municipality's current asset management practices and can serve as a structure for evaluating your progress as you develop a strong asset management program and approach.

National Round Table for Sustainable Infrastructure: The NRTSI was formed in 2015 as an expert resource on infrastructure; a non-partisan body that facilitates the understanding of infrastructure needs and helps to define issues of national priority as well as identify and/or develop and disseminate tools to address these issues.

Operation: The act of utilizing an asset. Typically consumes materials and energy.

Renewal (or asset renewal): The replacement or refurbishment of an existing asset (or component) with a new asset (or component) capable of delivering the same level of service as the existing asset.

Renewal investment: The total investment needed to replace or renew existing assets that have reached the end of their service life.

Risk: The chance that conditions or events may occur to cause an asset to fail.

Risk tolerance: The capacity to accept a level of risk, dependent on the likelihood and severity of consequences, and the existence of other priorities that require more immediate investment.

Strategic risk: The risk of a change occurring that impedes your ability to achieve your overarching strategic goals (e.g. hot, dry conditions put pressure on your ability to provide water service).

Sustainable service delivery: Ensuring that municipal services are delivered in a socially, economically, and environmentally responsible way, and that decisions today do not compromise the ability of future generations to meet their own service needs.

Appendix - Sample Policies

Appendix – Sample Policies

Policy #1

PURPOSE

To set guidelines for implementing consistent Asset Management processes within the municipality. The following terms are used within this policy and are defined as follows:

Asset Management: an integrated, lifecycle approach to effective stewardship of infrastructure assets to maximize benefits, manage risk and provide satisfactory Levels of Service to the public in a Sustainable manner. The majority of the services that the municipality provides are related to Asset Management.

Engineered Assets: assets that have been constructed and are owned by the municipality (e.g., watermains, roads, streetlights, buildings), land that is owned by the municipality and supports assets (e.g., land under roads or buildings), or land that is undeveloped and owned by the municipality. These assets must be operated, maintained, managed, and, with the exception of land, ultimately replaced as they wear out.

Level of Service: the service level delivered to the public by the municipality. This can take the form of the selection of services that are provided (e.g., bike lanes, doggie bags, or a new pool), the standard of infrastructure in place (e.g., concrete sidewalks versus gravel paths), or the standard to which an asset is maintained (e.g., the frequency of scheduled curb sweeping). The desire of Council or the public for a particular Level of Service will directly affect utility fees or taxation.

Natural Assets: naturally occurring land or subsurface features which perform or support service delivery to the municipality (e.g., the aquifer, which filters and stores water, and the creeks, which convey and treat stormwater run-off). This category also includes artificial features that mimic naturally occurring features (e.g., ditches, ponds and wetlands). If these assets did not exist, Engineered Assets would be required to provide these services. Natural Assets must be operated and maintained but, if managed appropriately, require no replacement.

Risk: analysis of the 'likelihood' and the 'consequences' of a given event. Establishing the risk associated with lower infrastructure performance due to Levels of Service or postponement of asset replacement will identify system vulnerabilities and assist in prioritizing work. For example, puddles on a gravel walkway may have a high likelihood of occurring but the consequences are not significant. In comparison, an ageing sanitary main may have a high likelihood of failure and the consequences of a break may be significant.

Sustainable: meeting the needs of the present without compromising the ability of future generations to meet their own needs. In relation to Asset Management a sustainable approach takes into consideration the current and future benefits and costs of existing and new assets or services.

OBJECTIVE

To ensure adequate provision is made for operations, maintenance and long-term replacement of major Engineered and Natural Assets by:

2.1 Maintaining assets in the most natural, energy-efficient and reliable manner that cost the least to operate over the life cycle of the asset;

2.2 Ensuring that the municipality's services and infrastructure are provided in a Sustainable manner, with the appropriate Levels of Service to all users within the municipality;

2.3 Managing Engineered and Natural Assets by implementing appropriate Asset Management strategies and appropriate financial resources for those assets;

2.4 Fostering an environment where all municipal employees take an integral part in overall management of municipal assets by creating and sustaining Asset Management awareness throughout the organization through training and development;

2.5 Ensuring resources and operational capabilities are identified and responsibilities for all areas of Asset Management are appropriately assigned;

2.6 Continually seeking opportunities for improving efficiencies in operations, maintenance and asset replacement practices;

2.7 Demonstrating transparent and responsible Asset Management processes that align with established best practices; and

2.8 Meeting legislative requirements for Asset Management.

BACKGROUND

3.1.1 Council's vision and goal for the community includes providing a safe, livable, Sustainable and economically vibrant community underpinned by well managed and maintained infrastructure assets. These assets include but are not limited to efficient transportation networks, an economical and reliable water distribution network, a safe and reliable sewage collection system, reliable information technology systems, appropriate fleets, and accessible parks, recreation and civic facilities.

3.1.2 The municipality is committed to implementing a systematic Asset Management methodology in order to apply appropriate Asset Management best practices across all areas of the organization. This includes ensuring that assets are planned, created, operated, maintained, renewed and disposed of, where appropriate, in accordance with the municipality's Levels of Service priorities.

3.1.3 As of December 1, 2017, the municipality owns and operates approximately $20 million (historic costs) of Engineered Assets to support its core business of delivery of service to the community. Although the equivalent values have not been established, the municipality also recognizes the additional and significant contribution made by Natural Assets in the delivery of service to the community.

3.1.4 Asset Management is the core business of the municipality and appropriate Asset Management is required to achieve our strategic service delivery objectives.

3.1.5 Adopting Asset Management principles will assist Council in achieving its strategic plans and long term financial objectives.

3.1.6 A strategic approach to Asset Management will ensure that the municipality delivers the appropriate Level of Service through its assets.

PRINCIPLES

3.2.1 A consistent Asset Management Strategy will be used for implementing systematic Asset Management and appropriate Asset Management best practices throughout all departments of the municipality.

3.2.2 Levels of Service will continue to be determined and refined in consultation with the community.

3.2.3 All relevant legislative requirements together with social, economic and environmental impacts are to be taken into account in Asset Management.

3.2.4 Asset Management principles will be integrated within existing planning and operational processes.

3.2.5 Natural Assets are recognized by Council as performing essential service delivery and will be identified and managed in a similar manner as Engineered Assets.

3.2.6 Asset Management plans will be developed for major service/asset categories. The plans will be informed by community consultation and financial planning and reporting.

3.2.7 An inspection regime will be used as part of Asset Management to ensure agreed service levels are maintained and to identify asset renewal priorities.

3.2.8 Asset renewals and Levels of Service defined in adopted Asset Management plans and long term financial plans will form the basis of annual budget estimates with the service and risk consequences of variations in defined services levels and budget resources detailed in budget documentation.

3.2.9 Asset renewal plans will be prioritized and implemented progressively based on agreed Levels of Service and the effectiveness of the current assets to provide that Level of Service.

3.2.10 Systematic and cyclical reviews will be applied to all asset classes and are to ensure that the assets are managed, valued and depreciated in accordance with appropriate best practices.

3.2.11 Future life cycle and replacement costs for all asset categories will be established with a goal to be completed by 2019.

3.2.12 Life cycle costs will be reported and considered in all decisions relating to new services and asset classes and upgrading of existing services and asset classes as soon as they are established.

3.2.13 Training in asset and financial management will be provided for relevant staff.

SCOPE

This policy applies to all municipal activities.

LEGISLATION

All aspects of Asset Management within the municipality shall be conducted in accordance with applicable legislation.

RELATED DOCUMENTS

Asset Management Strategy and associated Asset Management Plans (to be developed).

RESPONSIBILITIES

Asset Management is a corporate responsibility that involves all staff and members of Council in the effective implementation of Sustainable service delivery.

7.1 Council is responsible for:

7.1.1 adopting this Asset Management Policy and future updates;

7.1.2 allocation of resources;

7.1.3 providing high level oversight of the delivery of the organization's Asset Management strategy; and

7.1.4 ensuring that organizational resources are appropriately utilized to address the organization's strategic plans and priorities.

7.2 The Chief Administrative Officer has overall responsibility for:

7.2.1 developing Asset Management strategies, plans, and procedures, in conjunction with the management team;

7.2.2 reporting to Council and updating the community regularly on the status, effectiveness, and performance of work related to the implementation of this Asset Management policy; and

7.2.3 considering and incorporating Asset Management in all other corporate plans (e.g. Strategic Plans).

7.3 The Director of Engineering will be responsible for:

7.3.1 ensuring that the most up to date information on the municipality's Natural and Engineered Assets is gathered and maintained in the municipality's Geographical Information System (GIS) as well as other software and databases;

7.3.2 using industry standard unit costs and service lives for all infrastructure components, taking into account variations due to unique local conditions;

7.3.3 establishing infrastructure replacement strategies through the use of full life cycle costing principles;

7.3.4 establishing operations and maintenance policies to deliver Levels of Service and extending the useful life of assets;

7.3.5 where possible, integrate engineering and financial asset requirements into a single asset register; and

7.3.6 in consultation with other Directors, prepare Asset Management Plans and strategies for each asset type.

7.4 The Director of Public Works and the Director of Parks and Cultural Services will be responsible for:

7.4.1 maintaining and managing infrastructure assets at defined levels; and

7.4.2 conducting ongoing reviews and implementing changes to realize efficiencies in operations and maintenance practices.

7.5 The Director of Planning will be responsible for:

7.5.1 ensuring that standards, goals and objectives in the Official Community Plan and other bylaws, policies and plans are consistent with Sustainable Asset Management principles;

7.5.2 providing Council with the full life-cycle costing impacts of proposed community amenities and variances to development standards; and

7.5.3 in consultation with other Directors, determine if the projected revenues from incremental as well as full build out of the municipality, as outlined in the Official Community Plan, will support over time the assets necessary to provide established Levels of Service to the Community.

7.6 The Director of Finance will be responsible for:

7.6.1 planning financially for the appropriate level of maintenance for assets to deliver established Levels of Service with the goal to extend the useful life of municipal assets;

7.6.2 establishing financial plans for consideration by Council that will ensure stable, long-term funding for replacement, renewal and/or disposal of assets;

7.6.3 valuing and depreciating assets in accordance with appropriate best practices; and

7.6.4 integrating financial reporting requirements with the municipality's asset inventory register.

REVIEW DATE

This policy has a life of 4 years. It will be reviewed in 2019.

Policy #2

POLICY OBJECTIVE

The purpose of this policy is to ensure that the municipality implements asset management practices that enables a coordinated, cost effective and organizationally sustainable approach across the municipality to:

- Achieve the Council's vision of "a vibrant community which values a high quality of life, balancing rural heritage with a diverse economy"
- Ensure long-term sustainability and to demonstrate fiscal stewardship.

SCOPE

This policy applies to the lifecycle management activities of physical assets that are owned by the municipality, which may have a material impact on the capital and/or operating budget. This policy is the bridge between the Organizational Strategic Plan and the Asset Management Strategy.

DEFINITIONS

Asset means a physical object that is a significant economic resource and provides the delivery of a program or service.

Asset Management means the process of making decisions about the use and care of infrastructure to deliver services in a way that considers current and future needs, manages risks and opportunities, and makes the best use of resources.

Life-cycle means the time interval that commences with the identification of the need for an asset and terminates with the disposal of the asset.

Tangible Capital Asset as per the municipality's Tangible Capital Asset (TCA) Policy ADM-57 means non-financial assets having physical substance that are acquired, constructed or developed, including land, land improvements, roads, buildings, vehicles, equipment, water mains, sewer mains, and capital assets acquired by capital lease or through donation, which meet or exceed thresholds set out within that policy.

Asset Maintenance means the regular activities conducted to keep an asset functioning in its intended state. Maintenance activities are not capital investments.

Asset Renewal means the refurbishment or major maintenance of an asset that represents a capital investment and substantially extends the life of an asset.

Asset Replacement means the replacement of an asset that represents a capital investment.

Long-term Financial Plan means a plan that documents the process of aligning financial capacity with long-term service objectives.

PRINCIPLES

Forward Looking: The municipality shall operate in manner that takes into account the financial effects on future generations and considers changing community circumstances and external economic risks to ensure a vibrant community for generations to come.

Operations Efficiency: The municipality will manage the assets in a manner that ensures that public resources are put to the best possible use and that full cost of asset ownership is considered in decision making.

Service: The municipality shall operate and manage the assets to ensure service delivery to the community in a manner that considers quality of life, long term costs and risks.

POLICY STATEMENTS

Asset Acquisition: Decisions to acquire new assets will be based on an understanding that the asset supports the long term goals of the community and that the full life cost of ownership has been considered and incorporated into future operating and financial plans.

Asset Maintenance: For each asset, efficient maintenance strategies will be implemented that considers sustaining the desired service levels and seeks to minimize risk and the life cycle cost of ownership.

Asset Renewal/Replacements: Decisions to renew or replace an asset will consider risk (probability and consequences of asset failure), life cycle cost and the impacts to the level of service.

Funding for Asset Renewals/Replacements: A long term financial plan will be maintained which considers the renewal and replacement of existing infrastructure and the impact to taxation and user fees. The timing for asset renewal/replacement will balance risk with cost and levels of service.

The long term financial plan will identify how asset renewals/replacements will be financed, whether be it through current revenues, reserve funds or borrowing.

Asset Disposal: The utilization and function of all assets will be considered periodically together with the cost of operating and maintaining. Assets will be disposed of where it is determined that community resources can be applied to other uses with greater benefit.

RESPONSIBILITIES

Council

- Approves Asset Management strategies and plans, as required, alongside strategic planning
- Approves asset funding through the annual budget

Corporate Asset Management Steering Committee

- Is appointed by Senior Management and consists of a minimum of one representative from each department with asset ownership as well as one representative of the Planning Department.
- Provides a forum for discussion of asset management strategy, integration and best practices
- Leads the development of corporate asset management tools and practices and oversees their application across the organization

Departmental Asset Management Owners

- Responsibility for Asset Management functions
- Create and implement Asset Management Strategies
- Create and implement Asset Management Plans
- Liaises with Corporate Finance on financial matters

Corporate Finance

- Provides financial direction to the departments
- Responsible for the stewardship of the financial assets and records

REFERENCES

Municipal TCA

Municipal Strategic Plan

Municipal Vision/Guiding Principles

Building Community Resilience through Asset Management

Policy #3

PURPOSE

To provide the framework for the development of the municipality's Asset Management capability that supports the delivery of sustainable community services through the management of its assets.

POLICY

The following actions will help guide the municipality as it develops its Asset Management Plans:

- Determine and maintain the replacement value of assets
- Determine and maintain the condition of assets and their expected service life
- Maintain and manage assets at defined levels to support public safety, and Council's Mission
- Establish optimum asset renewal and replacement strategies that are informed through the use of life cycle costing and risk analysis
- Plan financially for the defined level of service
- Plan for and provide stable long term funding to renew and/or replace assets including their de-commissioning
- Consider the effects of climate change
- Report to Council regularly on the status and performance of the work related to asset management.

POLICY PRINCIPLES

The key principles of asset management are outlined as follows:

The organization shall:

1. Make informed decisions, identifying all revenues and expenses (including operations, maintenance, renewal, replacement, and decommission) associated with asset decisions, including additions and deletions.
2. Articulate and evaluate trade-offs, and record the basis for a decision.
3. Integrate corporate, financial, business, technical and budgetary planning for assets.
4. Maintain organizational accountability and responsibility for asset inventory, condition, use and performance.
5. Consult with customers.
6. Define and articulate asset performance, maintenance and replacement standards and outcomes.
7. Optimize the use of available resources.
8. Manage assets sustainably considering the municipality's environmental, social and economic responsibilities and the life cycle costs of assets.
9. Consider the effects of climate change in the design, renewal and replacement of assets.
10. Consider the criticality of the services provided and minimize the risks of disruption.
11. Develop and demonstrate improvement towards best practices.
12. Report on the performance of its Asset Management Program.

CITY OF PRINCE GEORGE

POLICY

Asset Management

City Government – Sustainable Infrastructure, Sustainable Fiscal Management and Organizational Excellence

Approved by Council: December 03, 2012

Purpose:

To provide the framework for the development of the City's Asset Management capability that supports the delivery of sustainable community services through the management of its assets.

Policy:

The following actions will help guide the City as it develops its Asset Management Plans:

- Determine and maintain the replacement value of assets
- Determine and maintain the condition of assets and their expected service life
- Maintain and manage assets at defined levels to support public safety, and Council's Mission
- Establish optimum asset renewal and replacement strategies that are informed through the use of life cycle costing and risk analysis
- Plan financially for the defined level of service
- Plan for and provide stable long term funding to renew and/or replace assets including their de-commissioning
- Consider the effects of climate change
- Report to Council regularly on the status and performance of the work related to asset management.

Policy Principles

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Capital Asset Management Strategy 2016 – 2020

CITY OF Selkirk

Where it all comes together

Table of Contents

Introduction

This strategy has been developed to fulfill the strategic gap identified by the City of Selkirk's *Creating Value from our Physical Assets* report which was prepared while the City developed its first asset registry database. While City Administration worked through the technical challenges of building the foundation for its Capital Asset Management Program (CAMP), it recognized that it required a guiding document to articulate the philosophical framework for the program. This articulation is rightfully the role of Council, the trustees of the City's assets.

This document has been created to define and clarify a broad vision and philosophical framework for the City's Capital Asset Management Program. Arising from this strategy the City will create governance and other policy tools which will refine, codify and implement the vision captured in these pages.

Asset Management Defined

According to Asset Management BC, Asset Management is an integrated process, bringing together skills, expertise, and activities of people; with information about a community's physical assets; and finances; so that informed decisions can be made, supporting sustainable service delivery.

In the context of the City of Selkirk, and for the purposes of this strategy, asset management is defined as the systematic practice of using human and financial resources to plan, source, construct, operate, maintain, renew and decommission infrastructure and equipment to sustainably deliver municipal services that manage risk, achieve regulatory requirements and meet the reasonable expectations of citizens.

Program vs Plan

While some municipalities have hired consulting firms to assist with the creation of an Asset Management "Plan", the City of Selkirk has determined that it would develop a Capital Asset Management "Program" internally. This small distinction in text represents a dramatically different philosophical approach to this work. Whereas a plan is time limited, having a definite beginning and ending, a program does not. Whereas a plan speaks to achieving a specific goal or outcome, a program speaks to achieving a set of enduring behaviours or practices.

Choosing to build a program, rather than just a plan, reflects the City's understanding that capital asset management must become a core function of the municipality. It reflects an understanding that the City must enact fundamental changes to its structure, its operation and even its organizational beliefs to maximize the benefits asset management offers.

Capital Assets vs Asset

The term capital asset management and asset management are often used interchangeably. The City of Selkirk chooses to use the term capital asset rather than simply asset, to provide a clear distinction between physical equipment and

infrastructure that is deemed “material”, that is to say substantially valuable enough to include it in a comprehensive asset management program. For example, a truck is a capital asset but a torque wrench is not. Both are assets, and both should be protected and managed but the expense of including smaller, less valuable assets like a torque wrench in a robust asset management program would far outweigh the expected return.

For this strategy, asset management is generally used to refer to the overall practice, whereas capital asset management is used to reference the City’s specific program and practices.

The Drivers of Change

Asset management, as a distinct and formal practice, has been a growing topic of discussion within the municipal sector for the past decade. For the City of Selkirk, this discussion began in 2011 with the final report of the City’s Development Fee Taskforce where City administration was tasked with the development of a robust infrastructure funding model and the redevelopment of the City’s financial reserve system to support the model.

The taskforce identified the significantly aged City infrastructure and the underfunded nature of the City’s financial reserves as “a clear and present danger” to the City’s sustainability.

As a long-established urban centre, the City of Selkirk has a significant amount of municipal infrastructure. Much of this infrastructure was constructed in the middle of the last century and is nearing the end of its designed service life.

With a declining population, stagnated tax base and aged infrastructure nearing the point of failure, the City recognized that the social and financial health of the municipality was in jeopardy.

Using data collected by the Province of Manitoba, basic financial analysis revealed that the City of Selkirk had some of the lowest valued municipal infrastructure of any City in Manitoba (See Figures 1 & 2 below).

Figure 1: Non-Financial Assets to Assessment

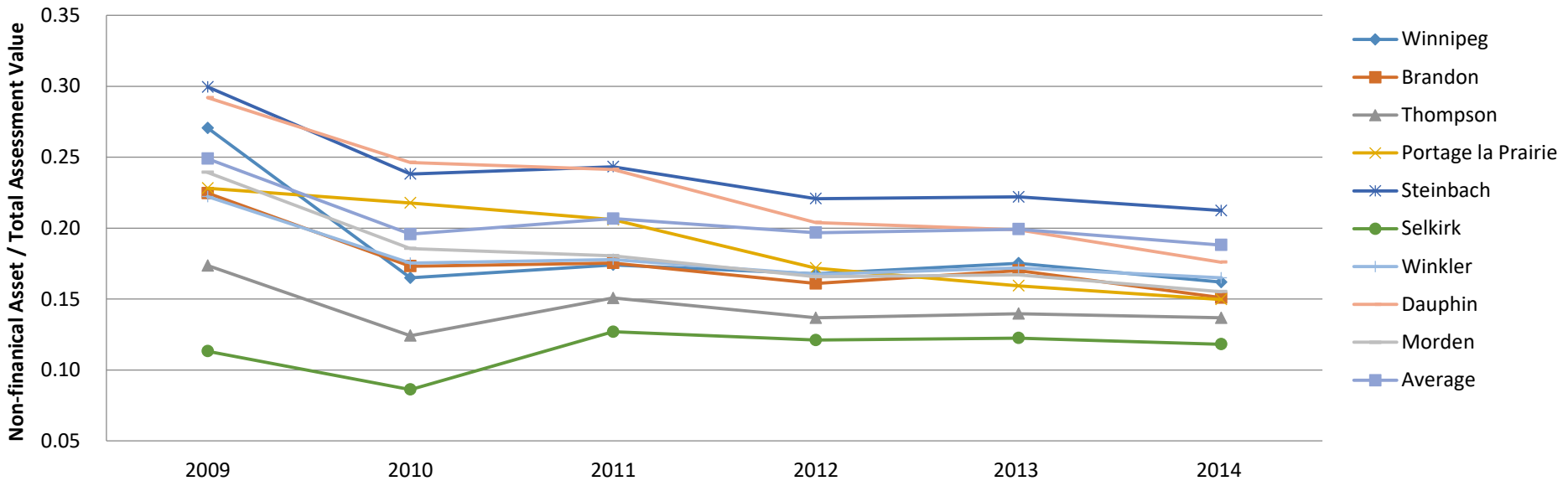
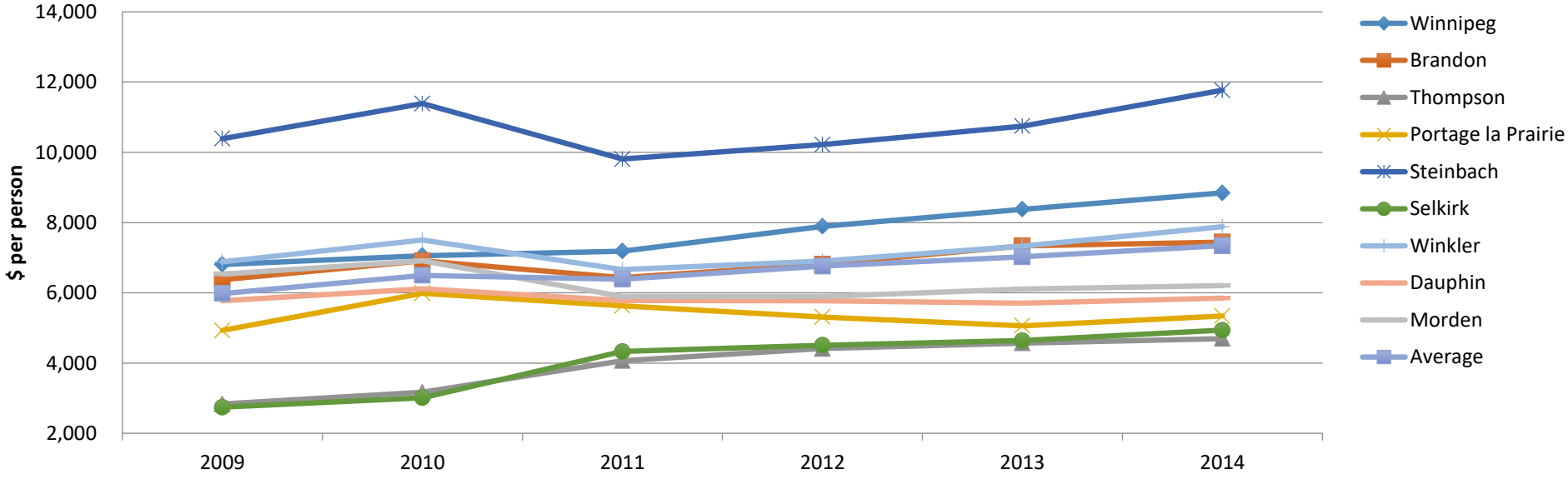


Figure 2: Non-financial Assets per Capita



Asset Management is a Strategic Priority

Given the state of the City's infrastructure and the threat to the community sustainability, Council decided a dramatic change to the way the City manages its infrastructure was necessary. As such, Council included asset management in the City's Strategic Plan.

Under strategic priority 3B, the City is committed to ensuring adequate funding for all city-owned assets. This priority calls for the creation of a management plan that considers "Selkirk's long term needs for maintenance and renewal, and ensures adequate funds are set aside in reserves to cover the expected costs."

Under strategic priority 4A, the City is committed to more active management of its capital assets. This priority calls for the creation of a comprehensive asset management program and is the catalyst for this strategy.

Selkirk's Strategic Plan can be found at myselkirk.ca/city-government/city-council/selkirks-strategic-plan/

A Requirement of Funding

Beyond the City's own recognition of importance, the Government of Canada has identified Asset Management as a key deliverable of municipal government. In the most recent Gas Tax agreement with the Province of Manitoba, the Federal Government made the completion of an asset management plan a prerequisite for Manitoba municipalities seeking Gas Tax funding in 2018 and beyond.

Getting Started

In 2014, City administration undertook a preliminary review of the developing municipal asset management sector and included the creation of an asset registry in its 2015 business plan.

Throughout 2015, the CAMP project team, designed and built an asset registry database for a selection of core asset classes, including roads, sidewalks, buildings, water mains, and sewer mains. Each asset was identified, categorized, measured and had its condition evaluated. All of this data was collected and populated into the database.

Throughout this process, administration developed the internal understanding and capacity to complete this work. Tools, processes and practices were researched and documented to chronical the technical aspects of the program. The results of this effort are captured in the City's first CAMP report entitled *Creating Value From Our Physical Assets*. This report will form the foundation for the

development of formal capital asset management policies and procedures.

Moving Forward

Building off the work completed in 2015 and 2016, the City of Selkirk will implement the work outlined in this strategy to complete the City's Capital Asset Management Program.

Vision

"A city that, through the responsible management of its infrastructure, meets the needs of its citizens today without compromising its ability to meet the needs of its future citizens."

Key Objectives

Through the development and implementation of this strategy, the City seeks to achieve the following objectives which will help it deliver on its vision:

1 Establish a systematic and robust Capital Asset Management Program for the City of Selkirk.
2 Empower City Administration to establish policies, practices and procedures and to source and allocate the resources necessary, to maintain city infrastructure at standards set out by Council.
3 Be recognized as a Manitoba leader in the area of asset management.
4 Embed capital asset management and municipal sustainability into the daily operations of the City of Selkirk.

Guiding Principles

As the City implements this strategy it will encounter situations it did not anticipate and will be forced to make decisions that it did not contemplate. When faced with these unexpected "forks in the road", the City will depend on the following principles to help guide its path:

1. Municipal infrastructure should be constructed, maintained and decommissioned in a manner that ensures the social, environmental and economic sustainability of the City.
2. Municipal infrastructure must facilitate and deliver municipal services that meet the needs and reasonable expectations of citizens.
3. Capital asset management is a core municipal responsibility.
4. Leading practices and industry standards shall form the basis for capital asset management policy, procedures and practices.
5. Municipal infrastructure is the foundation for community economic development and the quality of life for all citizens.
6. Municipal infrastructure is a "common good" and therefore must be managed transparently allowing all citizens to objectively evaluate its condition and value.

Strategic Priorities

With finite resources available, it is important to recognize that successful implementation of a capital asset management program will require a focus on those policy choices that the organization believes will best deliver on the objectives of this strategy. The following are the City's capital asset management strategic priorities:

Build Staff Capacity

While it is possible to hire external consultants to undertake many asset management functions, the City of Selkirk chooses to train and develop the capacity of its internal human resources to build and manage its program. While this process is slower and more expensive in the short-term, it supports the deep integration of asset management and sustainability principles into the everyday operations of the City. This deep integration will make the program more effective, resilient to staff and governance changes, reduces the dependency on expensive consultants to maintain the program, and ensures the City's program benefits from the continuing evolution of this field in "real-time".

Develop a Culture of Sustainability

With robust asset management tools and a deep understanding of asset management practices and principles, the City will be better prepared to make decisions that promote the long-term sustainability of the community. From the governance level to the front-line employee, asset management processes encourage thinking beyond immediate needs and short-term solutions. The City of Selkirk chooses to consider the long-term social, environmental and economic impacts of its decisions.

Integrate Asset Management into Core City Operations

The City has a number of establish systems, programs and processes that constitute its operations. Rather than treat asset management as a special project, or the function of one department or of a particular role, the City chooses to weave asset management practices into the existing systems. Asset management will permeate business planning processes, human resource allocations, reporting and even Council decision making processes. This integration will ensure that capital asset management practices are applied consistently across the organization and that staff will take a collaborative approach to achievement of the program's objectives.

Ensure Transparency and Build Citizen Understanding

At its core, capital asset management will demand the City make decisions that strike balance between the immediate desires of the community with its long-term needs. These choices will sometimes be difficult and can create political

tension when the "right" decision is not the "popular" one. Asset management tools, used skillfully and effectively, can provide the City with solid data with which it can make responsible decisions. However, this data alone may not be enough to justify the decisions to citizens. While implementing its capital asset management program, the City will ensure its program is transparent and communicated clearly. Citizen understanding and buy-in is critical to ensuring that Council has the political latitude to make tough choices.

Consider Value, Not Just Price

In the past, many procurement or implementation decisions were made on the basis of the quoted price. Focusing on price alone ignores the long-term financial costs of operations and maintenance and the hidden, harder-to-quantify, social and environmental costs. The City of Selkirk chooses to broaden its decision making criteria to include, as much as practicable, life-cycle costing and triple bottom-line evaluations. Life-cycle costing will require that the City understands the costs of operations, maintenance and eventual replacement for any given decision. Triple bottom-line evaluations will require that the City attempts to understand the social and environmental costs and not just the economic ones.

Recognize the Value of Natural Assets

While most asset management plans and programs focus almost exclusively on assets designed, constructed and manufactured by humans, the City of Selkirk chooses to expand its focus to include its natural assets, those resources provided by the natural world that support the delivery of municipal services. The City chooses to consider and work actively to measure, evaluate and attend to the health of its natural assets such as its aquifer, its urban forest, its parks and the Red River. And where possible, the City chooses to use natural assets rather than construct engineered assets if they deliver the same or comparable municipal service.

Use Best Practices and Adopt a Continuous Improvement Ethic

The field of asset management is rapidly evolving within the Canadian municipal sector. As more and more municipalities adopt these practices, new ideas, processes, tools and concepts are being introduced. The City of Selkirk recognizes that it is a new entrant into an evolving field. On this new journey, the City finds that much of the path has been well worn. The City chooses to follow in the footsteps of leaders in this field – adopting the practices, processes and concepts they have used to establish their successful asset management systems. As the City moves forward it expects to find the path less worn and more difficult. The City chooses to invest in its people, processes and technology to

continue to improve our asset management program. The City will continue to push forward until its program is recognized as among the leaders in this field for a municipality of its size.

Maintain a Citizen Service Focus

When immersed in the technical aspects of asset management or when faced with the significant financial challenges ahead, it is easy to forget that the purpose for all of this work is the citizen's quality of life. Frequently the City will face difficult choices. Decision makers must always remember that the City maintains infrastructure to deliver important services to its citizens to promote their wellbeing and their quality of life.

As the program matures, the City chooses to represent its citizen focus by making its program transparent and giving citizens access to tools that help them understand the status of the infrastructure they depend on most. The City will find ways to engage citizens in the decision making process and it will incorporate citizen service measures into its key performance indicators.

Make More Strategic Infrastructure Choices

A critical part of the City's capital asset management program will be using the data it collects to make more strategic infrastructure decisions. From ensuring that City procurement choices reflect life-cycling costing, to staging renewal projects to reduce waste and duplication, the City will make better, more long-term focused and cost–effective decisions. The City will also leverage its exposure to leading practitioners and adopt maintenance methods and renewal strategies that they identify as "best practices".

Improve Financial Preparedness

The long-term success of the City's capital asset management program depends on adopting a suite of aligned financial-practices that encourage the dedication of funds for infrastructure renewal and replacement. These practices must leverage the City's asset data, use predictive modeling, and be based on practices followed by sector leaders to ensure Council is confident that the challenging decision to defer the use of revenue for future works is prudent and sustainable. The City of Selkirk will realign its reserve system to support its capital asset management program and will identify savings targets that are driven by good asset data and reliable financial modeling.

Reduce and Manage Risk Better

As the City's infrastructure ages, the likelihood of failure increases. From a two hours interruption of water service due to a water-main break, to the mass cancelling of ice time resulting from an ice-plant breakdown at Selkirk Arena, failing infrastructure has serious negative impacts on

citizens. The City of Selkirk chooses to adopt asset management practices that identify infrastructure risk and offers cost-effective ways to avoid or mitigate the risk. As the program matures, effective risk assessments will allow the City to confidently balance the probability of risk against the optimal use of financial resources. That is to say, reasonably accept some risk when it makes fiscal sense. Good risk assessment and modelling will reduce the influence of unreasonable fear in decision making.

Adapt to a Changing Climate

Climate change is a reality that all Canadian communities, including Selkirk, must face. Preparing for, and adapting to, the anticipated extreme weather events and shifting climatic conditions must form an important part of both the City's emergency response plans and its asset management program.

As the City replaces aged infrastructure, or plans for the installation of new infrastructure, it must consider the new demands of a changing climate. The City will use climate modelling to better determine the capacity of future infrastructure and will seek cost-effective methods of enhancing the performance of existing assets to meet these future demands.

Storm water management systems must be prepared to withstand greater amounts of precipitation in shorter periods of time. Ground water resources must have the capacity to supply the City with potable water despite extended drought conditions, and City facilities must be prepared to shelter more citizens during extreme storm and temperature events.

Improve Accountability

Today, like many municipalities without asset management programs, City asset investment decisions are governed by a number of factors including, but not limited to, political impact, the knowledge and experience of management, the quoted price and the perceptions of affordability. These factors are subjective, often lacking a firm grounding in data. Accountability for these decisions is often limited to

superficial measures such as the absence of asset failure and citizen perception of value at tax time.

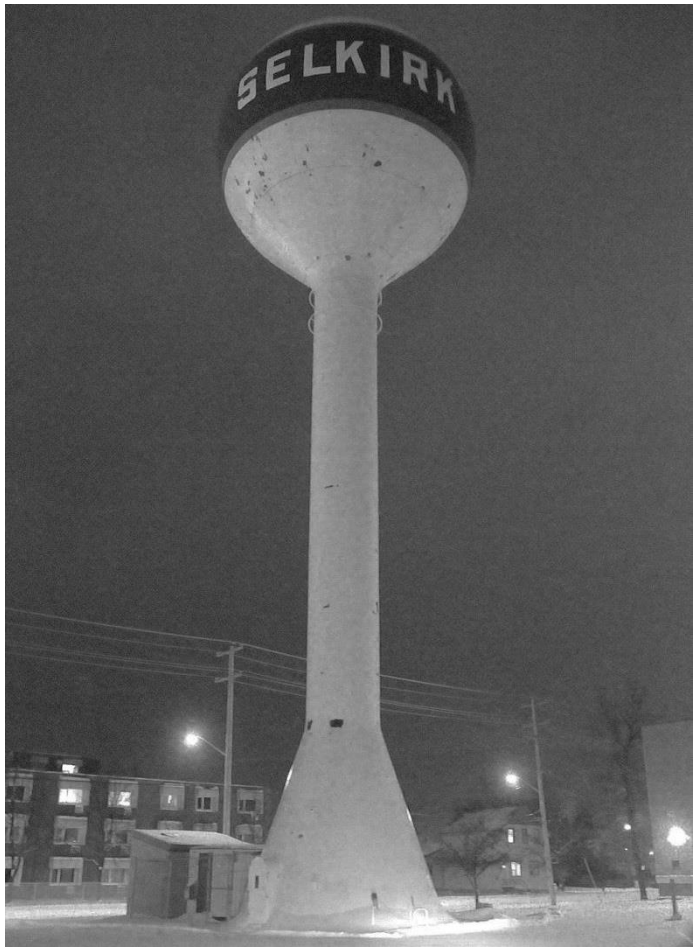
With a robust and transparent asset management program, the City of Selkirk will become more accountable to the citizens it serves. Through the use of high-quality asset data and industry leading modelling, decisions will become more objective and less dependent on political priorities or limited by common human biases.

The City of Selkirk chooses to use key performance indicators and transparent decision making methods which will allow citizens to track the performance of the City's infrastructure and give them a measuring stick against which they can evaluate Council's investment decisions. Using these same tools, Council will be better equipped to evaluate Administration's investment recommendations and the operating practices it employs.

As the program matures, the City's capital budgeting will shift from an annual to a longer-term focus. It will become more predictable with fewer unforeseen projects and will generate more consensus as prioritization becomes less subjective.

Grow Better

Selkirk is growing. Development is breathing new life into our downtown, into our older residential neighbourhoods and throughout our business community. But not all growth is good. The City of Selkirk chooses to learn from the challenges that urban centres across North American have been presented as a result of growth. Using high-quality data supplied by the City's asset management program and by applying smart growth principles to infrastructure decisions will ensure that Selkirk is growing towards sustainability, not away from it.



Strategic Goals

1. Establish Governance and Legislative Framework

To be successful the City's Capital Asset Management Program must have the support of both Council and Administration. Establishing a governance framework in municipal legislation and administrative policy communicates the importance of, and the City's dedication to, the program, and it provides a more permanent and enduring foundation. To achieve this goal the City will:

1.1 Establish CAMP by by-law, giving it appropriate permanence and priority.
1.2 Establish program framework to define and document administrative policy, tools and processes to dedicate internal resources and establish clear responsibilities and accountabilities.
1.3 Build the understanding and capacity of Council to effectively govern CAMP.
1.4 Set Service Standards using "leading practice" measures and regulatory compliance benchmarks.

2. Build Selkirk's Asset Registry

The foundation of any asset management system is a robust and holistic database containing all of the key measures and characteristics for every unit of municipal infrastructure. Beyond simply building this database, the City must establish the processes, practices and standards for data collection and data maintenance. To achieve this goal the City will:

2.1 Research and establish a basic asset registry database.
2.2 Identify material assets to include in the registry and divide into three implementation phases.
2.3 Collect asset and condition data for phase one assets and add it to the asset registry.
2.4 Collect asset and condition data for phase two assets and add it to the asset registry.
2.5 Collect asset and condition data for phase three assets and add it to the asset registry.
2.6 Identify critical assets that have the highest impact to municipal service delivery.
2.7 Establish and implement policy, procedures and tools for maintaining the currency of asset data.
2.8 Research, identify, procure and migrate to, robust asset registry software.
2.9 Establish and implement Capital Asset Evaluation Policy, procedures and tools.

3. Integrate Capital Asset Management into the City's Core Operations

To maximize the benefit from, and to ensure the sustainability of, this program, asset management practices must be incorporated into all of the existing governance,

management and operation systems used within the City. Asset management will not be a special project to be finished, or a report to be shelved, it will be a core function of the City and will impact each and every department, division and employee. To achieve this goal the City will:

3.1 Establish and implement a debt & investment strategy aligned with City's capital asset management program.
3.2 Redesign the City's financial reserve system to align with its capital asset management program including the creation of renewal/replacement reserves and reserves intended for the planned procurement of new assets.
3.3 Establish and implement a Reserve Funding Policy, procedures and tools to guide the setting of funding targets and integration of funding targets into annual business planning
3.4 Establish a procedure for developing the annual, five year and long-term capital plans.
3.5 Develop and establish an Asset Life-Cycle Maintenance and Renewal Policy, procedures and tools to articulate and guide the selection of preferred methods and materials to be used for City asset renewal and maintenance projects.
3.6 Develop general asset life-cycle maintenance plans for each asset class/sub-class within the City's asset registry.
3.7 Develop and implement a Risk Assessment Policy, procedures and tools to guide the City's identification and management of asset risks including climate change.
3.8 Develop and implement a climate change adaptation plan to identify long term infrastructure enhancements and integrate this plan into the City's capital asset management program.

4. Develop Organizational Capacity

While external resources can help establish and maintain an asset management program, the true determinate of success will be the internal capacity of City staff to understand and use the tools to improve the planning, construction, maintenance, operation, renewal and replacement of municipal infrastructure. Not only does this capacity ensure the City gets more out of the program, it makes the program more resilient. As more employees understand and can use the tools, the program becomes better able to withstand the shock of personnel changes. To achieve this goal the City will:

4.1 Amend job descriptions to delegate new asset management responsibilities and accountabilities; including, but not limited to, the CAO, Director of Operations, Director of Finance, Manager of Finance, Manager of Buildings and Fleet, Manager of Public Works and Manager of Water and Waste Water.

4.2 Create a new position to oversee the maintenance of the asset registry and support other program requirements.
4.3 Create and implement a staff training and development plan for all City employees who will have asset management program responsibilities.
4.4 Raise general staff awareness of asset management and knowledge of City's Capital Asset Management Program.
4.5 Join regional and national asset management networks and associations to maintain and enhance knowledge.
4.6 Develop an asset management module for the quadrennial Council Orientation process.
4.7 Explore software, technological and process enhancements that will allow City staff to project the asset impacts of population growth and increased service demands to encourage better asset planning.

5. Establish Key Performance Measures and A Reporting System

A critical part of asset management is the identification of performance measures and the setting of performance targets. Performance measures help to communicate what is ultimately important about City assets, and helps to focus all decision makers on the activities that will deliver maximum value. Setting targets helps to prioritize City renewal, repair and replacement activities and investments. By establishing the yardstick by which the performance of City infrastructure will be measured, and by setting targets, the program will provide citizens tools with which they can hold the City accountable. To achieve this goal the City will:

5.1 Research asset management performance indicators and select measures right for Selkirk.
5.2 Develop and implement an Asset Performance Measurement and Reporting policy to guide the tracking and reporting of asset performance measures.
5.3 Establish a systematic performance measurement procedure.
5.4 Select "comparable other" municipalities against which the City can benchmark asset performance.
5.5 Set realistic, but challenging, performance targets to drive improvement in asset conditions and service quality.
5.6 Develop and implement a citizen-friendly reporting system to help citizens understand the condition of City assets and monitor performance trends.
5.7 Link performance measurement with annual business planning processes.

Capital Asset Management Strategy

Strategic Goal	Tactic	Tools & Partners	Timing				
			2016	2017	2018	2019	2020
Establish Governance and Legislative Framework	1.1 Establish CAMP by by-law giving it appropriate permanence and priority	• Asset Management BC • Other municipalities		✓			
	1.2 Establish program framework to define and document administrative policy, tools and processes to dedicate internal resources and establish clear responsibilities and accountabilities.			✓			
	1.3 Build the understanding and capacity of Council to effectively govern CAMP				✓		
	1.4 Set Service Standards using "leading practice" measures and regulatory compliance benchmarks	• Canadian Network of Asset Managers • Asset Management BC • Public Sector Digest • Other municipalities		✓			
Build Selkirk's Asset Registry	2.1 Research and establish a basic asset registry database.	• Other municipalities	✓				
	2.2 Identify material assets to include in the registry and divide into three implementation phases.	• Other municipalities	✓				
	2.3 Collect asset and condition data for phase one assets and add it to the asset registry.		✓				

Strategic Goal	Tactic	Tools & Partners	Timing				
			2016	2017	2018	2019	2020
	2.4 Collect asset and condition data for phase two assets and add it to the asset registry.			✓			
	2.5 Collect asset and condition data for phase three assets and add it to the asset registry.				✓		
	2.6 Identify critical assets that have the highest impact to municipal service delivery				✓		
	2.7 Establish and implement policy, procedures and tools for maintaining the currency of asset data.	• Canadian Network of Asset Managers • Asset Management BC • Other municipalities		✓			
	2.8 Research, identify, procure and migrate to, robust asset registry software.	• Canadian Network of Asset Managers • Asset Management BC • Public Sector Digest • Other municipalities		✓			
	2.9 Establish and implement Capital Asset Evaluation Policy, procedures and tools.	• Canadian Network of Asset Managers • Asset Management BC • Other municipalities		✓			
Integrate CAM into the City's Core Operations	3.1 Establish and implement a debt & investment strategy aligned with City's capital asset management program.	• Other municipalities		✓			

Strategic Goal	Tactic	Tools & Partners	Timing				
			2016	2017	2018	2019	2020
	3.2 Redesign the City's financial reserve system to align with its capital asset management program including the creation of renewal/replacement reserves and reserves intended for the planned procurement of new assets	• Other municipalities		✓	✓		
	3.3 Establish and implement a Reserve Funding Policy, procedures and tools to guide the setting of funding targets and integration of funding targets into annual business planning	• Canadian Network of Asset Managers • Asset Management BC • Other municipalities			✓	✓	
	3.4 Establish a procedure for developing the annual, five year and long-term capital plans				✓		
	3.5 Develop and establish an Asset Life-Cycle Maintenance and Renewal Policy, procedures and tools to articulate and guide the selection of preferred methods and materials to be used for City asset renewal and maintenance projects	• Canadian Network of Asset Managers • Asset Management BC • Other municipalities			✓		

Strategic Goal	Tactic	Tools & Partners	Timing				
			2016	2017	2018	2019	2020
	3.6 Develop general asset life-cycle maintenance plans for each asset class/sub-class within the City's asset registry				✓		
	3.7 Develop and implement a Risk Assessment Policy, procedures and tools to guide the City's identification and management of asset risks including climate change	• Canadian Network of Asset Managers • Asset Management BC • Other municipalities					✓
	3.8 Develop and implement a climate change adaptation plan to identify long term infrastructure enhancements and integrate this plan into the City's capital asset management program	• Canadian Network of Asset Managers • FCM					✓
Develop Organizational Capacity	4.1 Amend job descriptions to delegate new asset management responsibilities and accountabilities; including, but not limited to, the CAO, Director of Operations, Director of Finance, Manager of Finance, Manager of Buildings and Fleet, Manager of Public Works and Manager of Water and Waste Water			✓			

Strategic Goal	Tactic	Tools & Partners	Timing				
			2016	2017	2018	2019	2020
	4.2 Create a new position to oversee the maintenance of the asset registry and support other program requirements			✓			
	4.3 Create and implement a staff training and development plan for all City employees who will have asset management program responsibilities	• Canadian Network of Asset Managers • Asset Management BC			✓		
	4.4 Raise general staff awareness of asset management and knowledge of City's Capital Asset Management Program				✓		
	4.5 Join regional and national asset management networks and associations to maintain and enhance knowledge	• Canadian Network of Asset Managers • Association of Manitoba Municipalities • City of Winnipeg		✓			
	4.6 Develop an asset management module for the quadrennial Council Orientation process				✓		
	4.7 Explore software, technological and process enhancements that will allow City staff to project the asset impacts of population growth and increased service demands to encourage better asset planning	• Canadian Network of Asset Managers • Asset Management BC • Other municipalities				✓	✓

Strategic Goal	Tactic	Tools & Partners	Timing				
			2016	2017	2018	2019	2020
Establish Key Performance Measures and A Reporting System	5.1 Research asset management performance indicators and select measures right for Selkirk	• Canadian Network of Asset Managers • Asset Management BC • Other municipalities			✓		
	5.2 Develop and implement an Asset Performance Measurement and Reporting policy to guide the tracking and reporting of asset performance measures	• Canadian Network of Asset Managers • Asset Management BC • Other municipalities • Federation of Canadian Municipalities			✓		
	5.3 Establish a systematic performance measurement procedure					✓	
	5.4 Select "comparable other" municipalities against which the City can benchmark asset performance	• Canadian Network of Asset Managers				✓	
	5.5 Set realistic, but challenging, performance targets to drive improvement in asset conditions and service quality						✓
	5.6 Develop and implement a citizen-friendly reporting system to help citizens understand the condition of City assets and monitor performance trends	• Canadian Network of Asset Managers • Asset Management BC • Other municipalities					✓

Strategic Goal	Tactic	Tools & Partners	Timing				
			2016	2017	2018	2019	2020
	5.7 Link performance measurement with annual business planning processes						✓

CITY OF Selkirk

Where it all comes together

COUNTY OF ST. PAUL NO. 19

BALANCING RURAL HERITAGE WITH A DIVERSE ECONOMY

POLICY OBJECTIVE:

The purpose of this policy is to ensure that the County of St. Paul implements asset management practices that enables a coordinated, cost effective and organizationally sustainable approach across all County of St. Paul to:

- Achieve the Council's vision of "a vibrant community which values a high quality of life, balancing rural heritage with a diverse economy"
- Ensure long-term sustainability and to demonstrate fiscal stewardship.

SCOPE:

This policy applies to the lifecycle management activities of physical assets that are owned by the County of St. Paul, which may have a material impact on the capital and/or operating budget. This policy is the bridge between the Organizational Strategic Plan and the Asset Management Strategy.

DEFINITIONS:

Asset means a physical object that is a significant economic resource and provides the delivery of a program or service.

Asset Management means the process of making decisions about the use and care of infrastructure to deliver services in a way that considers current and future needs, manages risks and opportunities, and makes the best use of resources.

Life-cycle means the time interval that commences with the identification of the need for an asset and terminates with the disposal of the asset.

Tangible Capital Asset as per the County's Tangible Capital Asset (TCA) Policy ADM-57 means non-financial assets having physical substance that are acquired, constructed or developed, including land, land improvements, roads, buildings, vehicles, equipment, water mains, sewer mains, and capital

assets acquired by capital lease or through donation, which meet or exceed thresholds set out within that policy.

Asset Maintenance means the regular activities conducted to keep an asset functioning in its intended state. Maintenance activities are not capital investments.

Asset Renewal means the refurbishment or major maintenance of an asset that represents a capital investment and substantially extends the life of an asset.

Asset Replacement means the replacement of an asset that represents a capital investment.

Long-term Financial Plan means a plan that documents the process of aligning financial capacity with long-term service objectives.

PRINCIPLES:

Forward Looking the County of St. Paul shall operate in manner that takes into account the financial effects on future generations and considers changing community circumstances and external economic risks to ensure a vibrant community for generations to come.

Operations Efficiency the County of St. Paul will manage the assets in a manner that ensures that public resources are put to the best possible use and that full cost of asset ownership is considered in decision making.

Service the County of St. Paul shall operate and manage the assets to ensure service delivery to the community in a manner that considers quality of life, long term costs and risks.

POLICY STATEMENTS:

Asset Acquisition: Decisions to acquire new assets will be based on an understanding that the asset supports the long term goals of the community and that the full life cost of ownership has been considered and incorporated into future operating and financial plans.

Asset Maintenance: For each asset, efficient maintenance strategies will be implemented that considers sustaining the desired service levels and seeks to minimize risk and the life cycle cost of ownership.

Asset Renewal/Replacements: Decisions to renew or replace an asset will consider risk (probability and consequences of asset failure), life cycle cost and the impacts to the level of service.

Funding for Asset Renewals/Replacements: A long term financial plan will be maintained which considers the renewal and replacement of existing infrastructure and the impact to taxation and user fees. The timing for asset renewal/replacement will balance risk with cost and levels of service.

The long term financial plan will identify how asset renewals/replacements will be financed, whether be it through current revenues, reserve funds or borrowing.

Asset Disposal: The utilization and function of all assets will be considered periodically together with the cost of operating and maintaining. Assets will be disposed of where it is determined that community resources can be applied to other uses with greater benefit.

RESPONSIBILITIES:

Council

- Approves Asset Management strategies and plans, as required, alongside strategic planning
- Approves asset funding through the annual budget

Corporate Asset Management Steering Committee

- Is appointed by Senior Management and consists of a minimum of one representative from each department with asset ownership as well as one representative of the Planning Department.

- Provides a forum for discussion of asset management strategy, integration and best practices
- Leads the development of corporate asset management tools and practices and oversees their application across the organization

Departmental Asset Management Owners

- Responsibility for Asset Management functions
- Create and implement Asset Management Strategies
- Create and implement Asset Management Plans
- Liaises with Corporate Finance on financial matters

Corporate Finance

- Provides financial direction to the departments
- Responsible for the stewardship of the financial assets and records

REFERENCES:
County TCA
County Strategic Plan
County Vision/Guiding Principle
Building Community Resilience through Asset Management

Town of Olds

ASSET MANAGEMENT STRATEGY

2017

What is Asset Management?

The Town of Olds has defined Asset Management as the process of making decisions about the use and care of physical and natural assets in a way that considers current and future needs, manages risks and opportunities, and makes the best use of resources to support sustainable service delivery.

Why do we need an Asset Management Strategy?

As the quote to the right states, municipal governments own and operate a majority of core public infrastructure. Municipalities across the country provide services through physical assets such as water and sewer pipes, land and buildings, roads, etc. According to the 2016 Infrastructure Report Card, "1/3 of the countries municipal infrastructure is in fair, poor or very poor condition, increasing the risk of service disruption".

Developing an asset management strategy will assist the Town in making better decisions about infrastructure and the service these assets provide. The strategy will be the link between policy and technical asset management plans (or the day to day implementation) and links asset management to other corporate initiatives. The strategy will identify and describe a set of planned actions that will support decisions to provide the desired levels of service in a sustainable way, while managing risk, at the lowest lifecycle cost.

"Almost 60% of Canada's core public infrastructure is owned and maintained by municipal governments and is estimated at $1.1 trillion dollars, or about $80,000 per household".

– *Canadian Infrastructure Report Card 2016*

In this document

Community Vision

"It is 2036 and the Town of Olds has surpassed a population of 15,000 residents. Residents appreciate Olds and regard it as a desirable community to call home offering a good balance between economic opportunities and high quality of life. Community facilities, amenities and social opportunities are part of the attraction along with Olds' commitment to environmentally responsible growth".

– *Town of Olds Municipal Development Plan*

Sustainable Service Delivery

Sustainable Service Delivery ensures that current community service needs, and how those services are delivered (in a socially, economically and environmentally responsible manner), do not compromise the ability of future generations to meet their own needs. Communities build and maintain infrastructure to provide services. These services support our quality of life, protect our health and safety, and promote social, economic and environmental well-being. Failure to care for our infrastructure, manage our natural resources and protect the benefits provided by nature, risks degrading, or even losing, the services communities enjoy, and that future generations may rely on.

Sound asset management practices support Sustainable Service Delivery by considering community priorities, informed by an understanding of the trade-offs between the available resources and the desired services.

- Asset Management British Columbia (AMBC) Framework

Olds Sustainability Plan

As communities grow, there is an increased demand for better roads, sidewalks, recreational facilities, lights and improved sewer and water systems. Balancing community expectation with the risk of aging infrastructure and potential service disruption along with limited funding available to municipalities requires us to be diligent in taking action to make our communities more sustainable and resilient.

The community of Olds has a vision for creating a sustainable future within each of the pillars of sustainability and collectively, supported by responsible management of Olds' natural and built assets, will contribute to the quality of life our citizens have come to expect.

Council Priorities

The Asset Management Strategy supports Council's Goals for the 2013-2017 term.

Contribution to the ***leadership role in sustainability*** will be done in part by working to: balance community expectation with sustainable service delivery; protect and increase green spaces including treed areas by developing a succession plan while remaining ***fiscally strong*** by ensuring the budget balances dollars with the services provided and that our core infrastructure is always maintained.

- Council Service Plan 2013-2017 (amended April 2017)

Olds has 18 km of trail network

Identified Priorities

Year One (2016):

- √ Define Level of Service
- √ Define roles and responsibilities of the asset management team
- √ Develop Asset Management Strategy
- √ Asset Management Policy development

Year Two (2017):

- * Data collection relating to replacement
- √ Develop risk framework
- * Link Asset Management Plan, Tangible Capital Assets and Geographic Information Systems
- √ Develop condition assessment framework
- * Development engagement and communication protocols
- * Initial report on replacement costs for all assets

Year Three to Five (2018-2022):

- * Develop individual Asset Management Plans per major class
- * Develop and track cost of service delivery (O&M)
- * Develop proposed replacement schedule
- * Develop a long term financial plan by linking the capital and operational plan
- * Develop a standardized data management system
- * Align policies, bylaws and programs
- * Develop an improvement plan

Linear Assets

How are we going to do it?

A technical team comprised of representatives from Core and Support Services, Financial Services and Governance is charged with developing an Asset Management Strategy for the Town of Olds. Developing an asset management plan (AMP) and a growth plan while providing means for implementation of the plan and engaging stakeholders (community) will be the strategic path the team will follow.

Key Questions

In order to begin developing an AMP, the Asset Management Team will answer the following questions:

- What do we own? (inventory)
- Where is it? (inventory)
- What is it worth? (costs/replacement rates)
- What condition is it in and what is its remaining service life? (condition and capability analysis)
- What is the level of service expectation and what needs to be done? (capital and operating plans)
- When do we need to do it ? (capital and operating plans)
- How much will it cost and what is the acceptable level of risk (s)? (short and long term financial plan?) Does it need to be prioritized or managed?
- What is our funding shortfall? Current plan to fund that gap?
- What are the funded and unfunded needs over the next 10 years for the total infrastructure?

Council's Role in Asset Management

Council is responsible for:

- Acting as stewards for infrastructure assets;
- Adopting an Asset Management Policy;
- Providing high level oversight of the delivery of the organization's Asset Management Strategy; and
- Approving levels of service, risk allowance, and budget.

Highway 27 Natural Asset Icon

The Strategy

The Town of Olds Asset Management Strategy will support Council's policy purpose to govern asset management practices taking into consideration the successful delivery of core services, long-term financial sustainability and continuous assessment and improvement.

Where are our Gaps?

The Asset Management Team has identified that the Town of Olds is at a level 2 (out of four) when it comes to asset management practices. This means there are areas for improvement to close the gap. These areas are reflected as identified priorities.

Solar Lighting

The Framework

Olds has chosen the British Columbia Asset Management Framework as it focuses on desired outcomes rather than prescribing specific methodologies. This approach allows for the tailoring of individual needs and capacity of our organization. This framework reflects current best practices and aligns with and is supported by ISO 55000 Standard for Asset Management and the International Infrastructure Management Manual.

People, Information, Assets, and Finances are the core elements necessary for sustainable service delivery. Success requires the integration of these four elements throughout the process of asset management.

Assets (Physical Infrastructure to enable Service Delivery): *Assessing the type of raw asset data available, the quality of the data, and the accessibility of the data.*

Information (to support decision making for Sustainable Service Delivery): *Assessing the translation of data into information and understanding of assets and the activities that are required.*

Finances (Understanding Long Term Costs of Service Delivery): *Assessing the state of financial information, plans, and resources required to meet future level of service requirements.*

People (Culture and capacity for informed decision making): *Assessing the awareness, capacities, and alignment of people to enable sustainable service delivery.*

- Asset Management British Columbia (AMBC) Framework

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Town of Olds

Resources

Building Community Resilience Through Asset Management: Handbook & Toolkit for Alberta Municipalities

http://www.municipalaffairs.alberta.ca/asset-management

FCM Building Blocks of Asset Management

https://fcm.ca/sites/default/files/documents/resources/guide/building-blocks-of-asset-management-mamp.pdf

How to Develop AM Policy, Strategy, and Governance

https://fcm.ca/sites/default/files/documents/resources/guide/how-to-develop-asset-management-policy-strategy-mamp.pdf

Asset Management Readiness Scale (MAMP)

https://fcm.ca/en/resources/mamp/tool-asset-management-readiness-scale

AssetSMART 2.0

https://www.ubcm.ca/assets/Funding~Programs/Asset~Management/AssetSMART_2%20-_A_Local_Government_Self_Assessment_Tool--LGAMWG--September_2015.pdf

Service Sustainability Assessment Tool

https://www.assetmanagementbc.ca/resources/#toggle-id-12

(found under the "Service Sustainability Dashboard and Reporting Tool at the bottom of the page)

FCM FEDERATION OF CANADIAN MUNICIPALITIES FÉDÉRATION CANADIENNE DES MUNICIPALITÉS

The Building Blocks of Asset Management

A how-to guide for reaching Level 1 of FCM's Asset Management Readiness Scale

Municipal Asset Management Program

Contents

Start here

Hi and welcome! We're glad that you've opened this guide. If you are looking to get started with asset management, you're in the right place. This guide has been designed for communities of all sizes who are just at the beginning stages of developing asset management practices and who want to better understand FCM's Asset Management Readiness Scale.

You've probably heard of something called "asset management"

Take a minute to think:

- In what contexts have you heard of asset management?
- Do you think you could define asset management? What words would you use to describe what it is?
- Do you think you could explain what it is to a teacher at the local school or to someone you've bumped into in the cereal aisle at the grocery store?

First things first: asset management is not a type of software, a plan or a project. **Asset management is a process for making decisions** about how infrastructure is used and cared for. It involves thinking about infrastructure in the context of current and future needs, considering risks and opportunities, and making the best use of resources. While software, plans and projects can be valuable, they are only support tools — they are not themselves the end goal of asset management.
Now take a minute to think about what you would say to someone about **why your community wants to do asset management**. What are the benefits?

Asset management isn't just about engineered assets. Natural assets, such as aquifers, riparian areas or wetlands, can play a significant role in delivering municipal services. Asset management processes can be applied to these natural assets, supporting the same end goal of sustainable service delivery.

Asset management helps you:

- Address risks to the sustainability of services in your community
- Prioritize projects and allocate resources in a defensible manner
- Align your goals, resources and organization around the things that matter most
- Be accountable to your community
- Take advantage of funding and grants
- Meet legislative requirements

An important part of asset management is having the right people involved. **Asset management is a team sport** — it requires the involvement of different departments. Even if your community's staff complement is small, you will likely have at least two people involved in asset management. For example, your asset management team should include people who understand finance, decision-making, and the planning and operations of each relevant service.

What is FCM's Asset Management Readiness Scale?

FCM's Asset Management Readiness Scale helps local governments measure progress on asset management in five **competency areas**. Each of these competencies is a building block. Together, the five building blocks form the practice of asset management.

These five competencies are key for sustainable service delivery. Asset management is not just about doing one thing — it is about building a robust understanding of asset needs and implementing good practices for caring for those assets. For a community to do this successfully, it must build skills and practices in each of the competency areas.

The five competencies

Policy and governance: By developing this competency, your organization is putting in place policies and objectives related to asset management, bringing those policies to life through a strategy and roadmap, and then measuring progress and monitoring implementation over time.

This competency helps you create the policy structure in your organization that lays out your asset management goals and how they will be achieved, leading to organizational alignment and commitment.

People and leadership: By developing this competency, your organization is setting up cross-functional teams with clear accountability and ensuring adequate resourcing and commitment from senior management and elected officials to advance asset management.

Asset management requires integration of multiple perspectives. At a minimum, your asset management team should be a representation of people who understand finance, decision-making, and the planning and operations of each relevant service area. This competency helps you create and sustain connections across teams and build leadership in asset management.

Data and information: By developing this competency, your organization is collecting and using asset data, performance data and financial information to support effective asset management planning and decision-making.

This competency helps you improve your data management practices so that you have the information you need about your assets when you need it.

Planning and decision-making: By developing this competency, your organization is documenting and standardizing how the organization sets asset management priorities, conducts capital and operations and maintenance (O&M) planning, and decides on budgets.

This competency helps you implement asset management, by ensuring that asset management policies, objectives and information are consistently informing organizational plans.

Contribution to asset management practice: By developing this competency, your organization is supporting staff in asset management training, sharing knowledge internally to communicate the benefits of asset management, and participating in external knowledge sharing.

This competency helps you build your organization's overall asset management practice by ensuring that internal stakeholders are well-informed and that your organization stays current with, and contributes to, leading practices, training and education.

Levels and outcomes

Each of the five competency areas is organized on a progressive scale of five levels. Each level is further broken down into three **outcome areas**. The outcomes describe milestones in asset management from initial investigation of practices, to adoption, and, eventually, to full integration of asset management practices into daily routines. **Each of these three outcome areas need to be achieved before a level has been achieved.** Referring to the outcomes described at each level can help you set goals and objectives, and design initiatives.

Outcome area A

Outcome area B

Outcome area C

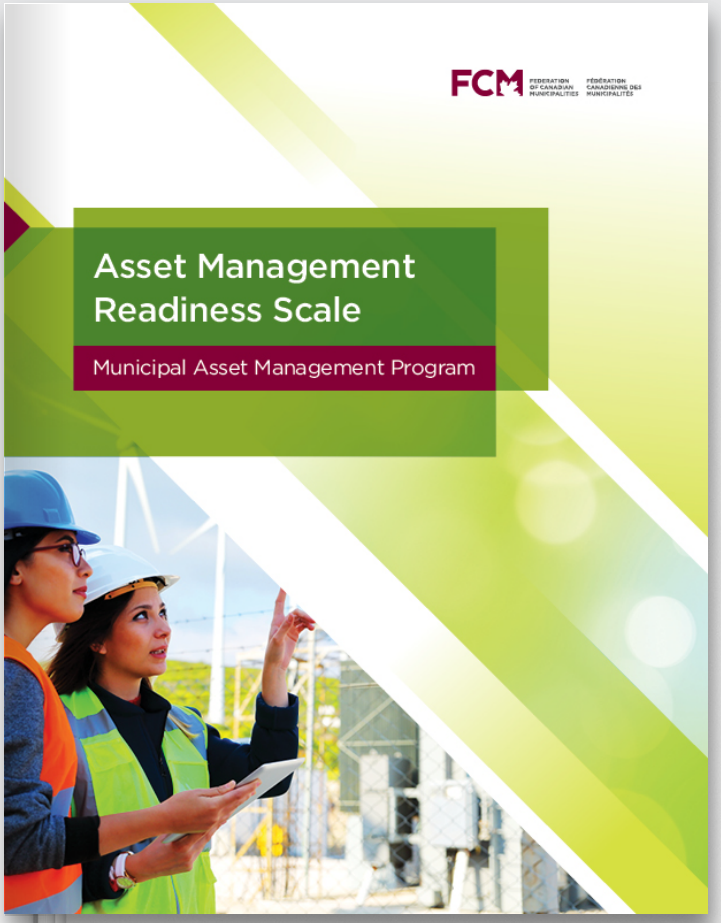
The Asset Management Readiness Scale helps municipalities assess where they're at and identify the areas they need to work on. Asset management is a journey and every community will be at a different stage in terms of which competencies they have developed, and which they have not yet focused on.

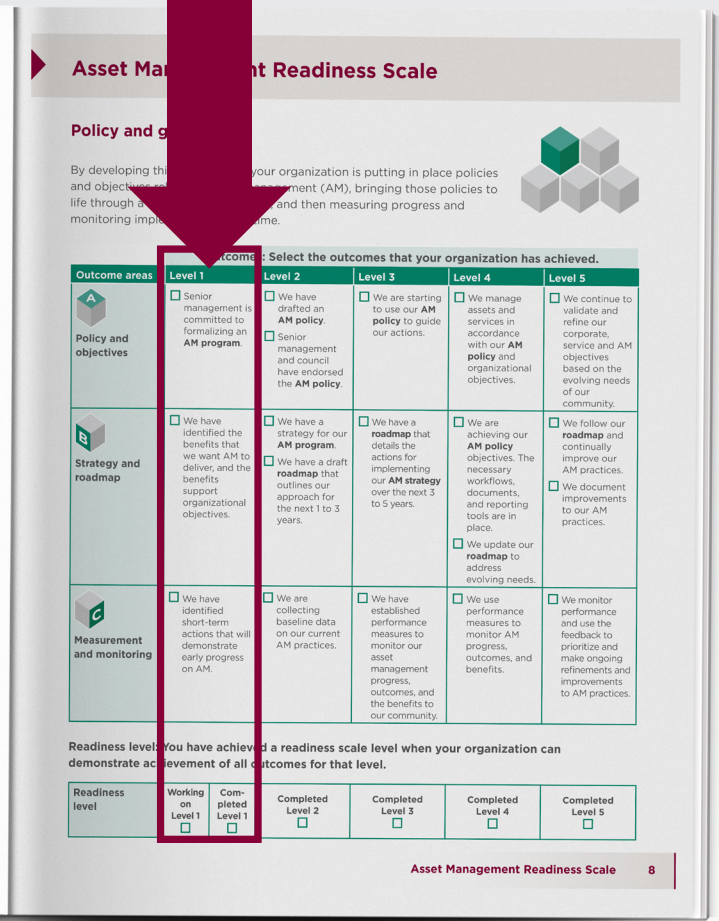
If you're using this guide, chances are that you are beginning your asset management journey or have not reached Level 1 in at least one competency area. Though it may seem like there is a long way to go, we want to congratulate you on getting started on this important process. Wherever you are in the process, don't forget that building your asset management program is a continuous process. It is useful to use tools like the FCM Asset Management Readiness Scale regularly to assess your progress and set priorities for improvement.

How does FCM's Asset Management Readiness Scale connect to this guide?

This guide was created to help communities in the early stages of establishing asset management practices start their journey in getting to Level 1 on FCM's Asset Management Readiness Scale by identifying some potential steps to achieve the required outcomes — the pieces of each building block.

This guide is focused on how to achieve Level 1 of FCM's Asset Management Readiness Scale.





Asset Ma… …t Readiness Scale

Policy and g…

By developing thi… …your organization is putting in place policies and objectives to… …gement (AM), bringing those policies to life through a… …and then measuring progress and monitoring impl… …me.

…tcome: Select the outcomes that your organization has achieved.

Outcome areas	Level 1	Level 2	Level 3	Level 4	Level 5
Policy and objectives	☐ Senior management is committed to formalizing an **AM program**.	☐ We have drafted an **AM policy**. ☐ Senior management and council have endorsed the **AM policy**.	☐ We are starting to use our **AM policy** to guide our actions.	☐ We manage assets and services in accordance with our **AM policy** and organizational objectives.	☐ We continue to validate and refine our corporate, service and AM objectives based on the evolving needs of our community.
Strategy and roadmap	☐ We have identified the benefits that we want AM to deliver, and the benefits support organizational objectives.	☐ We have a strategy for our **AM program**. ☐ We have a draft **roadmap** that outlines our approach for the next 1 to 3 years.	☐ We have a **roadmap** that details the actions for implementing our **AM strategy** over the next 3 to 5 years.	☐ We are achieving our **AM policy** objectives. The necessary workflows, documents, and reporting tools are in place. ☐ We update our **roadmap** to address evolving needs.	☐ We follow our **roadmap** and continually improve our AM practices. ☐ We document improvements to our AM practices.
Measurement and monitoring	☐ We have identified short-term actions that will demonstrate early progress on AM.	☐ We are collecting baseline data on our current AM practices.	☐ We have established performance measures to monitor our asset management progress, outcomes, and the benefits to our community.	☐ We use performance measures to monitor AM progress, outcomes, and benefits.	☐ We monitor performance and use the feedback to prioritize and make ongoing refinements and improvements to AM practices.

Readiness level: You have achiev… …d a readiness scale level when your organization can demonstrate ac… …evement of all outcomes for that level.

Readiness level	Working on Level 1 ☐	Com-pleted Level 1 ☐	Completed Level 2 ☐	Completed Level 3 ☐	Completed Level 4 ☐	Completed Level 5 ☐

Asset Management Readiness Scale 8

A thought experiment...

Imagine for a minute that you'd like to start a community garden in your town. You had a large garden as a kid, but you don't have a lot of space in your yard since moving to town. Besides, your gardening skills have gotten rusty and you'd like to be able to learn from more skilled gardeners. You'd also like to get to know your neighbours better.

Huh? How is this related to asset management?

Building an asset management practice is kind of like starting and running a community garden in your town. How so? Just imagine the similarities:

- **You can get started with whatever you have.** You don't need to be a master gardener to start organizing a community garden, and you don't need to know everything about your assets to get started with asset management.
- **You'll need to bring other people along with you.** You can't build a community garden alone, and staff or elected officials of even the smallest communities can't effectively manage assets by themselves. A team is essential to reaching your goals.
- **It's not a project, it's a process.** The first steps are important, and it can be exciting to see progress, but you don't plant your seeds and call it a day. Just like in asset management, the outcomes you really want will come from the ongoing process and through building your abilities over time — not from building the garden plots or the asset spreadsheets.
- **There are benefits in both the outcomes and the process.** A community garden provides the obvious benefits of fresh fruits and vegetables, but the process of building and working together in the community garden builds relationships and new skills for participants. Asset management will result in assets that can deliver services for generations in the future, but the process typically leads to better communication, planning, and overall improved business practices.

Asset management may be new to some of the readers of this guide. It can seem full of jargon and overwhelming. By comparing the process of asset management to something as common as community gardening throughout this guide, we hope you'll be able to think through the key concepts and competencies of asset management and how they apply to your context.

This guide is not meant to be prescriptive. It proposes one way of getting to the destination, but the steps can and should be modified to suit your context. Achieving Level 1 sets you on the path to improving asset management practices. It's not a race or competition; everyone starts somewhere and that's why you've opened this guide.

This guide discusses the competencies in the order in which they appear in the Asset Management Readiness Scale and you can read it front to back. However, the order of these competencies does not necessarily reflect the order in which asset management is done. If, after reviewing the Readiness Scale, you identify one or a few competencies that are more important than others, you can jump right to those and start there.

What this guide is not

The FCM Asset Management Readiness Scale is used by municipalities across Canada. However, each province has its own requirements on asset management. Achieving Level 1 does not mean that you are meeting your province's regulatory requirements. Part of this process is learning what your organization is required to do, as well as identifying how asset management practices can be improved in general.

Making the best use of this guide

- Start with the competency area that your organization struggles with the most.
- Remember that all the competencies are important. Don't get caught up in one to the exclusion of others. In many cases, you will be more successful by thinking about several different competencies at the same time.
- If you don't know where to start, read the guide from start to finish and discuss with your team.
- If you still don't know where to start, focus on **data and information**, as well as **people and leadership**.
- Consider jointly organizing an asset management process with neighbouring municipalities. This can be a way to share resources and costs associated with starting asset management. It can also be great motivation! Check out the case studies in the **data and information** competency to see how other communities have done this.

Don't forget!

As you go through this process, there are a few things to keep in mind:

- Asset management is not a plan — it's a process.
- Asset management is not linear, and this guide doesn't need to be used in a linear way.
- This guide gets you to Level 1 of the FCM Asset Management Readiness Scale. However, asset management is a continuous improvement process.
- It's okay to be at a Level 1 — it's just the first step.
- Asset management connects to and supports existing community processes and goals.

Source: Northwest Territories Association of Communities

How to reach Level 1 of FCM's Asset Management Readiness Scale

Policy and governance

What does this competency involve?

Putting in place policies and objectives related to asset management, bringing those policies to life through a strategy and roadmap, and then measuring progress and monitoring implementation over time.

Outcomes

Level 1—Policy and objectives
Senior management is committed to formalizing an asset management (AM) program.

Level 1—Strategy and roadmap
We have identified the benefits that we want AM to deliver, and the benefits support organizational objectives.

Level 1—Measurement and monitoring
We have identified short-term actions that will demonstrate early progress on AM.

In other words, this means:
Getting the key decision-makers in your organization on the same page with what you're going to do and why you're going to do it.

Level 1 benefits

You know where you're headed, which helps you figure out where to start.
You can connect strategic community goals to asset management practices.
You understand service priorities and how asset management helps to achieve these.

Although there is no single "right" place to start, many communities will complete the activities in the **data and information**, and **people and leadership** competency areas at the same time or before completing the activities related to **policy and governance.**

Getting to Level 1 in policy and governance

Below are some of the steps that you may take to get to Level 1 in the policy and governance competency on FCM's Asset Management Readiness Scale. These are not prescriptive steps but rather an illustration of one approach you could take.

Level 1—Strategy and roadmap
We have identified the benefits that we want AM to deliver, and the benefits support organizational objectives.

- ☐ Get an initial team together. At a minimum, you should have people who represent an understanding of finance, decision-making, and the planning and operations of each relevant service. This might be as few as two or three people. **But it's not one person**. There's no "I" in team.
- ☐ Familiarize yourself with the topic and prepare for discussion by reviewing resources on asset management.
- ☐ Investigate the regulatory requirements for asset management in your province.
- ☐ Identify a tool for assessing your organization's asset management practices. Pick one that makes sense for the context of your community and looks like it would initiate some valuable conversation. You could use **FCM's Asset Management Readiness Scale** for this, or another assessment tool that is right for your community, like Asset Management BC's assessment tool, **AssetSMART 2.0**, or the Municipal Finance Officers' Association of Ontario **self-assessment tool**.
- ☐ Use the selected tool to complete an assessment of your organization's asset management practices as a team. It's important to do the assessment as a team, because different people will have different perspectives on where you're at. It is also important that your assessment consider all assets across all departments — not just one asset class — because asset management is an organization-wide practice. The discussion that happens during the assessment is just as important as the results themselves. Make notes about where you're starting from and how you know you are at that point – what evidence supports your self-assessment?
- ☐ Assess whether your organization is meeting regulatory requirements for asset management.
- ☐ Review council strategic priorities and identify how these relate to asset management. Consider community goals and what you need from your assets and asset management processes to achieve your community goals.

> ***Example:***
> A community's goal, and council strategic priority, is downtown revitalization. The understanding and achievement of this goal can be supported by asset management processes and practices. The community can begin to build its asset management program in a way that helps inform decisions about downtown revitalization.

- ☐ Identify expected benefits and outcomes of having an asset management program.

> ***Example benefits and outcomes:***
> By having an asset management program in place, we will understand what we have and how much it will cost to maintain and replace.
>
> By understanding and communicating trade-offs and decision-making processes, we will increase public trust.

Level 1 —Measurement and monitoring
We have identified short-term actions that will demonstrate early progress on AM.

☐ Identify some specific asset management actions your organization can take in the short term to build some momentum and achieve early gains. These actions should support the achievement of the desired benefits and outcomes from your asset management program. This list of actions will change over time as you make progress in asset management.

> ***Example actions:***
> Assemble a cross-functional team to guide the development of our asset management program.
>
> Develop a basic asset inventory by collecting available asset information and compiling it into a central inventory.
>
> Raise awareness within council on the purpose and importance of asset management.

Level 1—Policy and objectives
Senior management is committed to formalizing an AM program.

☐ Host a workshop with council to share the assessment results, potential objectives, and expected benefits and outcomes.

☐ Use the workshop as an opportunity to discuss the importance of an asset management policy and get council's input on the objectives and expected outcomes.

☐ Seek endorsement of the objectives and commitment to developing a policy.

Remember! This is a process: by achieving Level 1, you are working toward developing an asset management policy and starting to monitor performance.

A thought experiment...

You've started the process of building a community garden. You have some land and you have assembled a crew. Maybe a few folks have some experience gardening, but the rest are equipped with little more than enthusiasm. What do you need to do? You need a way to get everyone working toward the same goals.

- Round up the key people who want to help you achieve your vision of building a community garden.
- Talk through why everyone shares this common vision. What are the potential benefits? What are the specific objectives? If the group's main objective is to have a way to teach kids how to garden, you will likely approach building and running the garden differently than you would if the main objective was to grow as much produce as possible. Talking about the benefits as a group helps you to clarify your objectives and generates some needed motivation for taking on the work of the project.
- Talk through the challenges that you anticipate: it's going to be hard work, gardening is weather-dependent, there may be problems with insects, it requires time and commitment, and you need approval from the landowner and the local government. Thinking about these challenges in advance helps you figure out what you might be able to do to reduce or address these challenges early on.
- Figure out what local regulations you need to meet and how they might impact your activities.
- Prepare a presentation or some talking points and meet with the landowner and local government to get all the necessary approvals.

Tips and tricks

- Understand asset management terminology, and help others understand it too.
- Start by identifying what you're already doing (things that may not be called "asset management") that could be a part of your asset management processes.
- Seek informational resources on asset management through Asset Management Canada and FCM. Reach out to peer communities and ask how they got started.
- Get outside help — ask your local community of practice, consult peer communities, attend a course, or engage a consultant if necessary. A bit of outside help can go a long way in ensuring that you're not spinning your wheels.
- Find out if there are any grant funding programs that you can access to help you get started. If you can access a grant, great! That can help to kick things off. If your community is not able to access a grant, this shouldn't be a barrier — resources exist that are designed to help communities get started with minimal effort/investment.
- Think holistically about the benefits of asset management. What function and value do your natural assets add? Would your land-use decisions benefit from considering asset management? Can asset management help you achieve your climate change or sustainability goals? Asset management can help you accomplish broader community goals and making these connections early can help staff and council understand the **why** of asset management.

Case study: policy and governance

Town of Golden, BC

Population: 3,708
Land area: 11.41 km²


Source: Town of Golden, British Columbia

What motivated the town to get started?

In 2011, the Town of Golden received a grant from the Government of British Columbia to complete a pilot project with an international asset management organization.

What did they do to work toward Level 1 outcomes?

- The town established a cross-functional leadership team, including the chief administrative officer (CAO), manager of operations, and IT staff person (as support), to lead the asset management planning process and prepare a 10- to 20-year forecast for the cost of replacing and maintaining the town's assets.
- The CAO and the manager of operations attended a three-day asset management course to compile asset inventory spreadsheets and develop an asset register. The IT department provided data support.
- Staff reviewed the town's reserve fund policies to understand the town's position in relation to capital renewal needs and to establish an asset renewal reserve.
- Staff prepared an asset management policy, which was adopted by council.

Over time, the town expects these efforts will improve data, inform plans and budgets, and help them make better decisions on assets.

Level 1 outcomes achieved

A Policy and objectives	✔ **Senior management has demonstrated commitment by joining cross-functional team.**
B Strategy and roadmap	✔ **The town has identified desired benefits of AM.**
C Measurement and monitoring	✔ **Short-term measurable actions have been identified (and in some cases, completed).**

Senior management took a leadership role in asset management, which led to the achievement of all Level 1 policy and governance outcomes. But the town didn't stop there. It used this success to continue building its asset management practices.

The town is currently working with a consultant to develop asset management plans for assets listed in the asset register. It hopes to use these plans to start a conversation on service, cost and risk, with council and constituents. Once the asset management plans are complete, the town will prepare a priority list of projects and an asset management strategy. The town is also completing asset risk assessments and budgeting to complete detailed risk assessments.

What results has the town experienced?

The process of developing the asset register and the asset management policy helped identify a gap between what the town needs to maintain and replace assets and what it is capable of handling financially. In response to this gap, the town has established an asset renewal reserve to cover the cost of preparing grant applications and to help fund condition assessments to keep data up to date.

Case study: policy and governance

Township of St. Clair, ON

Population: 14,086
Land area: 619.17 km²


Source: Township of St. Clair, Ontario

What motivated the township to get started?

The Township of St. Clair was motivated to improve its asset management plan to meet requirements of the Municipal Infrastructure Initiative Program led by the Government of Ontario. In 2012 the township received funding toward the development of a comprehensive asset management plan. The goal of this plan was to improve decision-making processes in managing infrastructure assets. This will help the township make improvements in a timely and cost-effective manner.

What did they do to work toward Level 1 outcomes?

- The township worked with a consultant to collect asset information to implement an asset management program in 2007. As part of this process, the township set objectives for its asset management program and discussed benefits.
- The township developed a comprehensive asset management plan in-house in 2012, based on information gathered previously.
- The township set the expectation with staff and council that the development of an asset management plan is necessary to secure provincial capital funding for infrastructure projects.
- Public works staff led the development of the asset management plan and worked to build buy-in from council.
- The township gained the support and commitment of the asset management steering committee (consisting of senior management staff) by holding asset management workshops and webinars.

Level 1 outcomes achieved

A Policy and objectives	**✔ The township has gained senior management commitment through workshops and by communicating future funding requirements for AM.**
B Strategy and roadmap	**✔ The township has identified desired benefits of AM.**
C Measurement and monitoring	**✔ Short-term measurable actions were identified.**

What results has the township experienced?

Since council adopted the asset management plan in 2013, the township has established an asset management policy and has been working to build buy-in from council to implement the policy. The township is also working toward establishing a framework for the asset management program to present to council, with the objective of budgeting for asset management training and contracts to further develop the program.

As a result of the asset management planning work undertaken by the township, council better understands the importance of life-cycle costing and the true expense of sustaining assets. Additionally, public works and operations staff have come to understand the importance of keeping accurate maintenance records and having the ability to refer to that information for decision-making purposes. The township has also implemented monthly and annual reporting mechanisms with a scorecard and metrics. This has assisted in keeping staff and council on track to achieve plan objectives. The asset management plan has also changed the way that the township builds its annual budget: it now has a process and a plan for maintaining assets, and an understanding of what that will cost.

Case study: policy and governance

City of Plessisville, QC

Population: 7,196
Land area: 4.40 km²

Source: City of Plessisville, Quebec

What motivated the city to get started?

Following the failure of a number of its assets, which showed some deficiencies in their management, the City of Plessisville has been working toward developing an asset management program since October 2017. The city was part of the Leadership in Asset Management Program French cohort and used the Asset Management Readiness Scale to guide its work. The city started by addressing all five competencies at once but found that this overwhelmed staff capacity. They shifted their focus to the policy and governance competency.

What did they do to work toward Level 1 outcomes?

- To build capacity, staff attended two workshops led by a consultant, along with several other communities.
- The city identified the need for technical staff support in the development of the asset management program and hired an individual to focus on gathering and organizing data.
- The city intends to develop an asset management program and maintenance plan that exceeds minimum provincial requirements for communities in Quebec.
- The city is aware of the benefits that can be achieved through an asset management program, and plans to define the specific benefits it anticipates, in order to track progress.
- A consultant supported staff in identifying objectives to guide the development of the asset management program. Staff had previously identified operational objectives and the consultant helped make those objectives more strategic.
- The city adopted an asset management policy in May 2018, which resulted in the establishment of an intersectoral asset management committee, the launch of an asset inventory, and implementation of an asset management plan.

Level 1 outcomes achieved

A Policy and objectives	✔ **Senior management has demonstrated commitment through adoption of the AM policy.**
B Strategy and roadmap	**Working toward Level 1: The city is aware of the benefits of AM and plans to define specific desired benefits.**
C Measurement and monitoring	✔ **Short-term measurable operational and strategic objectives have been defined, including key actions.**

What results has the city experienced?

Following the adoption of the asset management policy, the city created an asset management committee, which resulted in the development of a common vision and a work plan that combine the various aspects of asset management. These developments will also serve the city well when it comes time to implement the asset management plan, as staff have laid the groundwork for working together toward a common goal. In addition, municipal council has also designated an elected official to act as the person responsible for asset management on the municipal council. This individual would help council understand the principles of integrated asset management, and promote more informed decision-making. Finally, by adopting an AM policy and sharing its principles with the entire organization, the city is ensuring the sustainability of this vision, since it will not rest entirely on the shoulders of one person.

People and leadership

What does this competency involve?

Setting up cross-functional teams with clear accountability and ensuring adequate resourcing and commitment from senior management and elected officials to advance asset management.

Outcomes

Level 1—Cross-functional teams
We have identified the representation we need on our cross-functional AM team.

Level 1—Accountability
We have a champion who has been tasked with planning for our AM program.

Level 1—Resourcing and commitment
Council knows that resources must be dedicated to exploring the requirements for AM and for drafting an AM roadmap.

In other words, this means:
Someone in the organization is proactively moving the asset management conversation forward. Steps are being taken to pull together the staff with the necessary and different skill sets and knowledge about the assets, information, and finances to work together. Council is aware that resources are needed to improve asset management practices.

Level 1 benefits

Council understands and supports the goals of asset management.
Staff are starting to understand what they need from an asset management program.
Accountability and transparency are improving.

Getting to Level 1 in people and leadership

Below are some of the steps that you may take to get to Level 1 in the people and leadership competency on FCM's Asset Management Readiness Scale. These are not prescriptive steps but rather an illustration of one approach you could take.

Level 1—Cross-functional teams
We have identified the representation we need on our cross-functional AM team.

- ☐ Identify a small initial team of staff who represent an understanding of finance, decision-making, and the planning and operations of each relevant service. If you're in a small organization without formal departments, this may just be the CAO and the public works manager.
- ☐ Meet to discuss what asset management is and why it is important for your community to develop an asset management program. Identify what perspectives and knowledge you need on your cross-functional team, and who in the organization can fill these needs.

WHAT IS A CROSS-FUNCTIONAL TEAM?

A team that can speak to each component of service delivery: finance, decision-making, operations and planning. In some jurisdictions, there are legislative requirements for who should be involved in asset management. For example, in Ontario, staff dealing with growth, planning and energy need to be involved in asset management.

Level 1—Accountability
We have a champion who has been tasked with planning for our AM program.

- ☐ Hold a presentation or workshop with council to share information about what asset management is, why it's important, how it differs from what you're doing now, and what your organization needs to do to begin building an asset management program.
- ☐ Seek endorsement from council (or senior management, depending on your organization) to investigate asset management requirements and to define an asset management program. The team working on asset management will likely include the people from your initial discussion, but it may include others with additional perspectives.

Level 1—Resourcing and commitment
Council knows that resources must be dedicated to exploring the requirements for AM and for drafting an AM roadmap.

- ☐ Seek endorsement from council for the financial resources you need. Be sure to re-state the benefits of getting started on an asset management journey.

Remember! This is a process: by achieving Level 1, you are working toward a clear organizational mandate for asset management and commitment from council for continuous improvement on asset management.

Some of these activities are well-aligned with activities in the policy and governance competency. You may want to combine some activities, such as presentations or workshops with council, in a way that achieves desired outcomes in both competency areas.

A thought experiment...

You have an enthusiastic crew that's ready to build a community garden! Okay, so maybe a few folks have been dragged along by well-meaning family members. How do you bring everyone together and get them working as a team? As with all new things, leadership evolves over time. Perhaps the person spearheading the community garden has never touched a trowel, but they're willing to learn. Whatever the case may be, you need to start with a few key things:

- Identify who will be part of the planning team, and who will just be showing up to garden from time to time.
- Make sure that there are people on your planning team that have the right skills, such as: bringing a team together and getting things done; planting and growing a garden; and navigating local permitting requirements.
- Work with the planning team to make a list of what needs to be done and what equipment you need.
- Make teams and assign tasks so that everyone knows what to do.
- Figure out where you're going to get your resources. Is there a grant you can apply for? Will you fundraise? Can you ask for donations of materials and tools?

Tips and tricks

- Find a champion! It's less important what the expertise of the champion is, and more important that they are excited about asset management, will talk to others in the organization about it, and can effectively bring people together.
- Talk to peers in other communities to get ideas about how to set up teams and improve communication.
- To get the conversation started, engage council in a discussion about the specific benefits of asset management to your community, not just the benefits of asset management in general.
- This is not about creating new work, but about coordinating better and updating your existing practices into an organized and systematic approach.
- Engage with the community of practice in your area through regional organizations or municipal association meetings.
- Take a course on asset management, ideally as a team.
- In small communities where individual staff wear many hats, a cross-functional group may be as few as two people.

Case study: people and leadership

District of Tumbler Ridge, BC

Population: 1,927
Land area: 1,558.97 km²

Source: District of Tumbler Ridge, British Columbia

What motivated the district to get started?

The District of Tumbler Ridge is a young community — approximately 36 years old. Most of its infrastructure was installed when the community was established, which means its infrastructure has aged at the same rate and will need to be replaced at the same time. Tumbler Ridge does not have the benefit of staggering its infrastructure investments — a significant challenge to financing these investments.

Prior to 2012, the community had a relatively simple asset management plan, which focused on finances and an equipment replacement fund. Issues were dealt with on a reactive basis — "fix it when it breaks." Council realized that this approach was not a long-term solution and made asset management a priority.

What did they do to work toward Level 1 outcomes?

- The district had a strong internal champion who raised awareness of the need for asset management and co-ordinated efforts.
- The district hired a consultant to conduct an asset management workshop with staff and council, to build understanding of asset management and its importance.

Level 1 outcomes achieved

A Cross-functional teams	**Working toward Level 1: The district is identifying representation needed on the cross-functional team.**
B Accountability	**✔ The district has a strong champion for asset management.**
C Resourcing and commitment	**✔ Council is engaged, aware of the resources required, and has designated AM as a priority.**

With a strong internal champion and council support, the district was able to achieve Level 1 and kick-start its plans, including creating an asset management readiness plan (what the FCM Asset Management Readiness Scale calls a "roadmap") to guide improvements in asset management practices, and a comprehensive asset management plan that outlines infrastructure inventory and asset replacement priorities.

What results has the district experienced?

The development of an asset management plan led to a number of achievements and tangible infrastructure projects. The district upgraded the water treatment plant and wastewater treatment blower system, received a grant for the development of a wastewater irrigation system, completed a major asphalt replacement project, and replaced most of the equipment fleet. To make these projects happen, consecutive councils have been proactive in budgeting for asset management planning. Following the completion of these projects, the district updated its asset management plan with revised asset information.

The district highlights the importance of several elements: having accurate asset inventories, to prioritize projects and justify council decisions; considering the tax base in asset management planning; and identifying key leadership among staff to continue prioritizing asset management despite council changes.

Data and information

What does this competency involve?

Collecting and using asset data, performance data, and financial information to support effective asset management planning and decision-making.

Outcomes

Level 1—Asset data
We have asset inventory data, including approximate quantities of assets within most asset groups. We have some anecdotal information on asset condition. Some age information exists.

Level 1—Performance data
We have informal or anecdotal approaches for measuring asset or service performance.

Level 1—Financial information
We have financial information on our assets, supporting minimum PS-3150 reporting requirements.[1]

In other words, this means:
You have data that provides a basic snapshot of your assets and that fulfills your reporting requirements with minimal headache.

Level 1 benefits

You know what data you have and where it is.
You are starting to understand what shape your assets are in, at least anecdotally.
Important information is more accessible for decision-making.
You can meet the PS-3150 reporting requirements for tangible capital assets (TCA).
You are starting to understand how your data can help you accomplish your goals.

1 PS-3150 is the Public Sector Accounting Board's standard guiding the treatment of tangible capital assets.

Getting to Level 1 in data and information

Below are some of the steps that you may take to get to Level 1 in the data and information competency on FCM's Asset Management Readiness Scale. These are not prescriptive steps but rather an illustration of one approach you could take.

Level 1—Asset data
We have asset inventory data, including approximate quantities of assets within most asset groups. We have some anecdotal information on asset condition. Some age information exists.

- ☐ Identify all the places where you store data on your assets. This might include as-built drawings (electronic or hard copy), spreadsheets for TCA reporting, databases, including GIS databases if available, and any other spreadsheets or software applications used to track information about the assets you have, the quantities of the assets, and where these assets are.
- ☐ Make a list of the types of asset data you have and the format it is in.
- ☐ Make a list of anecdotal condition information by talking to operators or public works staff to identify any critical assets that might be in poor condition.

Level 1—Performance data
We have informal or anecdotal approaches for measuring asset or service performance.

- ☐ Work with operators or public works staff to review maintenance logs for patterns in asset performance. For example, persistent water main breaks, low-pressure zones, backups, increase in pump failures, etc.
- ☐ Review citizen satisfaction surveys and complaint logs to identify common issues related to service performance.
- ☐ Ask staff and council members who regularly interact with the public about common complaints or feedback related to service performance.

Tools are important, but asset management software is best used when there are good processes in place already. Before investing in new software, figure out what your organization needs by reviewing what data you have and what you need to collect and keep track of moving forward.

Level 1—Financial information
We have financial information on our assets, supporting minimum PS-3150 reporting requirements.

- ☐ Review the financial data you have available. Ensure that you have historic cost and age information for all major assets. Fill in gaps where necessary with available information or your best estimate.
- ☐ Use the historic cost information and the age to determine asset depreciation and the depreciated value of the asset, which can be used for PS 3150 reporting.

Remember! This is a process: by achieving Level 1, you are working toward having inventory data on all your assets, including condition, performance and risk information and replacement costs for at least some assets.

A thought experiment...

Keeping some basic records helps you to be successful with your gardening and build on your successes in the coming years. What kind of things do you keep track of?

- How many garden plots you have, and who is assigned to each plot of land
- What people are saying about their garden plots — for example, some plots may receive too much shade; other plots may not have good quality soil; or the garden may have invasive species
- People who can help maintain the garden, fix things, or build structures to expand the garden
- What money is coming in and how you're spending it
- What is working well and what's not

In your garden, just like in asset management, all kinds of tools are available. More expensive and more sophisticated do not necessarily mean better. Sometimes you benefit more from cheap and easy-to-use tools because you can get started right away, rather than waiting for ideal conditions or the deluxe tool set.

Tips and tricks

- Start with the data you have and try to identify the key messages from that data. Data collection is an ongoing process and will improve over time. Don't put off other parts of asset management because you need to collect more data.
- Don't get trapped in a data vortex! Collect what you NEED, not everything. To figure out what you need, identify the decisions you need to make, then figure out what data, and what level of accuracy, is needed to support that decision.
- Good data supports good projects and access to funding. Cutting corners with data collection creates a headache down the line when you need inputs to support a project or to meet funding requirements.
- When thinking about your data needs over the long term, you want to be able to answer the questions below. These questions will help you get to the ultimate goal of asset management: knowing what your asset priorities are and making financial decisions based on these priorities:
  - What do we own and where is it?
  - What will it cost to replace?
  - What is its condition?
  - What is its remaining service life?
- It's important to have systems in place to manage your data and keep it up to date. Even in the early stages of data collection you can start thinking about how you will maintain your data in the medium and long term.

Case study: data and information

Town of Hanley, SK

Population: 511
Land area: 2.65 km²

Source: Town of Hanley, Saskatchewan

What motivated the town to get started?

Staff from the Town of Hanley had been learning about asset management through the Saskatchewan Urban Municipalities Association annual convention. They knew that asset management was important, and council even budgeted for an asset management plan, but it was difficult for staff to know where to start. Council considered several different options for how they could develop an asset management plan, but no real progress was made.

In 2017, the town attended a series of consultant-led asset management planning workshops organized by the regional planning commission of which the town is a member. The goal of the workshops was to help administrators and councillors of municipalities in the region develop knowledge and expertise in municipal infrastructure asset management, and to guide each community through the process of creating its own asset management plan from start to finish.

What did they do to work toward Level 1 outcomes?

Staff and council members attended workshops to learn about asset management. The workshops provided a structure for them to gather their asset information into one place, including inventory, anecdotal data and financial data. This helped them to start preparing an asset management plan, including the identification of levels of service and major risks. The town found that by attending the workshops staff were able to take time away from day-to-day operations to focus on creating their plan. By developing its asset management plan in a workshop setting, the town was able to work with and learn from the other regional communities in attendance. The workshop setting also created efficiencies in enabling multiple communities to benefit from hiring one consultant.

Staff updated the Tangible Capital Asset (TCA) register annually with information on actual asset replacement costs. This information was helpful in developing the town's asset management plan.

Level 1 outcomes achieved

A Asset data	✔ **The town has asset inventory data for most asset groups.** ✔ **Anecdotal condition information about assets is available.**
B Performance data	✔ **Approaches for measuring service performance are available.**
C Financial information	✔ **Financial information is available to support PS-3150 requirements.**

What results has the town experienced?

Town council reviewed the completed asset management plan and built an understanding of current assets and their replacement costs. Council members felt they had the information they needed to make informed decisions about asset replacement, budgets and tax rates. Developing an asset management plan highlighted that the town did not have adequate reserve funds to pay for upcoming replacement costs. The asset management plan provided council with the information it needed to communicate with constituents about asset needs and their impacts on tax rates.

Case study: data and information

Village of Loreburn, SK

Population: 107
Land area: 0.62 km²

Source: Village of Loreburn, Saskatchewan

What motivated the village to get started?

In the past, the Village of Loreburn didn't see the need to prioritize asset management planning. However, after attending asset management presentations at the Saskatchewan Urban Municipalities Association convention, the village had the opportunity to attend asset management planning workshops along with the Town of Hanley, organized by their regional planning commission.

What did they do to work toward Level 1 outcomes?

- The village administrator and a council member attended asset management workshops to learn about collecting asset inventory in order to start preparing an asset management plan. Staff prepared by gathering maps, asset registers and documents on tangible assets prior to the first workshop.
- Information gathered in advance of the workshop was compiled into an excel spreadsheet during the workshop.
- The workshops were a collaborative effort with other communities in the region. This not only helped make workshops financially viable for the small communities; it allowed the communities to share information on common infrastructure.
- Like the Town of Hanley, the village found it helpful to set aside time to focus on creating an asset management plan, rather than getting weighed down by day-to-day tasks.

Level 1 outcomes achieved

Asset data	**✔ The village has asset inventory data for most asset groups.** **✔ Anecdotal condition information about assets is available.**
Performance data	**✔ Approaches for measuring service performance are available.**
Financial information	**✔ Financial information is available to support PS-3150 requirements.**

What results has the village experienced?

Once they got started with their asset management plan, they realized the value of having asset information readily available for staff, council and constituents. Through the process of developing its asset management plan, the village found that much of the asset information it had on file was out of date. Due to retirements and turnover, some staff and council members were no longer available to answer questions about the community's assets. The importance of keeping accurate records, to ensure that knowledge isn't lost when a staff or council member leaves, really hit home.

The village identified the need for an asset management maintenance plan — a major shift from the previous "fix it when it breaks" mindset. The village now wants to understand when assets need to be replaced, the cost of replacement, and how they will be paid for. The village also commits time to working on asset management planning and decision-making, separate from regular council meetings.

Case study: data and information

Town of Yarmouth, NS

Population: 6,518
Land area: 10.57 km²


Source: Town of Yarmouth, Nova Scotia

What motivated the town to get started?

Yarmouth is the fifth-largest town in Nova Scotia and is a major commercial, economic and education service center for most of the southwestern portion of the province. As a major service provider for the region, the town has been motivated to proceed with asset management planning to ensure that services are available into the future.

For the last 25 years, the town has had a professional engineer on staff who is responsible for managing processes for building and maintaining infrastructure. When the staff engineer initiated asset management planning in the town, it became clear that the town required significantly more capital, maintenance and personnel resources to properly maintain assets.

What did they do to work toward Level 1 outcomes?

- The town worked with a consultant to develop a preliminary-state asset inventory based on information compiled by the town engineer and GIS data.
- By achieving Level 1 of this competency, the town had the asset inventory data needed to develop an asset management plan.

Level 1 outcomes achieved

Asset data	**✔ The town has asset inventory data for most asset groups.** **✔ Anecdotal condition information about assets is available.**
Performance data	**Working on Level 1: The town is developing informal approaches to measuring service performance.**
Financial information	**✔ Financial information is available to support PS-3150 requirements.**

What results has the town experienced?

Developing an asset management plan led to the following progress and insights:

- Technical and managerial needs in the future would require two engineering positions.
- Tax rates needed to increase to meet funding needs.
- Accurate data and information would be needed to deal with staff turnover and changes in council.
- The asset management plan helped the town understand its debt-to-affordability model to project funding requirements into the future.
- The asset management plan helped council realize the importance of asset management, leading to increased support and collaboration with staff on asset management goals.
- The town started to invest heavily into capital improvements to “fill the infrastructure deficit” left by 100 years of unresolved infrastructure issues.

Today, council is confident in investments made in capital assets, and staff continue to develop their expertise in asset management.

Case study: data and information

Village of Haines Junction, YK

Population: 613
Land area: 34.08 km²

Source: Marty Samis

What motivated the village to get started?

Village administration recognized that to comply with the requirements of PS 3150, the village would need to organize and understand community assets. The village was motivated to develop an asset register to ensure that it would be eligible for asset management funding.

What did they do to work toward Level 1 outcomes?

- The village had established a basic asset ledger, but to meet the requirements of PS 3150, it needed to record original asset costs.
- Village staff researched commercial software applications available to support the development of an asset register. However, most applications were not suited to the scale of the village's small asset base and were very expensive to purchase. Instead, the village developed its own asset register by programming an Excel spreadsheet to organize assets and calculate depreciation, estimated useful life, and estimated replacement values.
- The village took approximately one year to gather asset data and organize the information into the Excel register.
- The village sourced original costs of community assets through archived accounting records, invoices and federal government records of infrastructure development in the community.
- The village recognized that most assets in the community, except for those that were recently replaced, were already beyond their expected useful life as they were installed more than 40 years ago, and most were constructed experimentally. With this anecdotal information, the village assumed that all old assets needed to be replaced in the near future.
- The village recognized that it is very expensive to conduct physical asset inspections to determine expected useful life. Instead, it was able to use mathematical models in the Excel register to project expected useful life.
- With the Excel register, the village was able to calculate the depreciation of capital assets to meet PS 3150 reporting requirements.

Level 1 outcomes achieved

A Asset data	**✔ The village has asset inventory data for most asset groups.** **✔ Anecdotal condition information about assets is available.**
B Performance data	**✔ Informal approaches for measuring service performance are available.**
C Financial information	**✔ Financial information is available to meet PS-3150 requirements.**

What results has the village experienced?

The village has realized that asset management planning is not a process undertaken overnight, but one that is continuously developed over time by collecting data through everyday asset use. The village has also recognized that asset management planning is a multidisciplinary undertaking, involving personnel from finance, public works, administration and leadership.

With the development of the Excel register, the village's capital budgeting process has been streamlined, and administration has been able to plan for when assets will need to be replaced. The village also has plans to develop an asset management plan and is considering the establishment of a reserve fund to support the replacement of assets over time.

Planning and decision-making

What does this competency involve?

Documenting and standardizing how the organization sets asset management priorities, conducts capital and operations and maintenance (O&M) planning, and decides on budgets.

Outcomes

Level 1—Documentation and standardization
Our asset planning approaches vary across the organization.

Level 1—Asset management plans
Our approach to asset renewal focuses on reacting to basic needs (e.g. growth, regulations and known problems). We evaluate priorities based on available information, staff experience, and input from council and management.

Level 1—Budgets and financial planning
We prepare annual capital and operating budgets based on historical values. We deal with new needs reactively, as they occur.

In other words, this means:
You're using input and knowledge from staff and council to plan how to respond to your community's immediate asset needs. You have a basic asset investment plan (or plans).

Level 1 benefits

You're improving decision-making processes about asset investments by including knowledge from staff and council.
You have documented basic asset investment needs.
You are establishing documentation and record-keeping practices for the future.

Getting to Level 1 in planning and decision-making

Below are some of the steps that you may take to get to Level 1 in the planning and decision-making competency on FCM's Asset Management Readiness Scale. These are not prescriptive steps but rather an illustration of one approach you could take.

Level 1—Documentation and standardization
Our asset planning approaches vary across the organization.

- ☐ Before beginning your annual budgeting process, pull together information about your community's growth, upcoming regulatory requirements, and other known asset issues and needs. Members of the asset management team can all work to track down this information. The steps in the **data and information** competency will help you with this.
- ☐ At the beginning of your annual budgeting process, meet with your asset management team to review available asset data and information, as well as community growth information, regulatory requirements, and asset issues and needs.

Level 1—Asset management plans
Our approach to asset renewal focuses on reacting to basic needs (e.g. growth, regulations and known problems). We evaluate priorities based on available information, staff experience, and input from council and management.

- ☐ As a team, define potential projects to meet the needs or address the issues identified.
- ☐ As a team, discuss how to rank the priority of the projects. Create a simple scale to assist with prioritization.

> ***Example prioritization scale***
> 1 – Health and safety issue, regulatory requirement
> 2 – Addresses major risk to service delivery
> 3 – Addresses minor risk to service delivery, or meets growth requirements
> 4 – Discretionary project

Level 1—Budgets and financial planning
We prepare annual capital and operating budgets based on historical values. We deal with new needs reactively, as they occur

- ☐ As a team, and using your prioritization scale, review the projects and rank them in order of importance. Identify capital and operational projects for the upcoming year based on available funding.
- ☐ Include the capital projects for the upcoming year in the annual capital budget, with rationale based on the prioritization ranking and other supporting information about the assets, growth, or regulatory requirements.
- ☐ Develop an operation budget using the past few years as a baseline. Adjust with new or unique activities for the coming year.

Remember! This is a process: by achieving Level 1, you are working toward preparing asset management plans and managing both short- and long-term risks to your assets.

A thought experiment...

Your community garden is off to a great start this year. To support future years, you need some planning and basic systems to document processes. Keeping a garden going requires time and money and you're still figuring it out at this point. You only have a rough idea of where money for repairs and expansion will come from. At a minimum, you need to write down next year's tasks (e.g. obtaining tools, doing repairs, preparing soil) and how much money these will cost. You find out what needs to be done, and when, by talking to everyone involved. The group can't afford to do it all, so after you have the master list, you work together to identify the top priorities.

Unexpected things will happen — weather, invasive species, volunteer turnover — and you will have to adapt. As your garden becomes more established, you and your crew will learn what you need to do and plan for.

Tips and tricks

- Have an asset management champion in your organization. This doesn't mean this person should "do" asset management on their own. Asset management is a team sport; but the champion can coordinate efforts, help work toward consistency of asset management practices, and move things along.
- Approach planning in bite-sized chunks. Don't feel like you have to accomplish everything in one meeting.
- Don't worry about having perfect data — use what you have and fill gaps with anecdotal information and staff knowledge.

Case study: planning and decision-making

Town of Shellbrook, SK

Population: 1,444
Land area: 3.67 km²

Source: Town of Shellbrook, Saskatchewan

What motivated the town to get started?

The Town of Shellbrook was accustomed to making reactive asset management decisions, until several sewer lines failed simultaneously. The town realized that it did not have enough asset information available to support good decision-making processes and that replacement costs hadn't been budgeted for. This shock led the town to prioritize asset management planning.

What did they do to work toward Level 1 outcomes?

The Town of Shellbrook used Level 1 as a stepping stone to develop more robust asset management practices.

- The town administrator and a public works staff member attended an asset management training session.
- The town hired a consultant to work with the public works foreman to develop an asset management database and the town's first asset management plan.
- The town worked with the consultant to hold workshops to help determine levels of service and to develop a risk assessment and mitigation plan.
- Asset management plans were developed for services including water, sewer, roads, sidewalks, gutters and buildings.
- As the town's asset management practices have improved, it has been able to use the plans to create better budgets each year.

Level 1 outcomes achieved

A Documentation and standardization	**✔ Approaches for asset planning are in place, but they are not consistent.**
B Asset management plans	**✔ AM plans are in place that define levels of service and risk (beyond Level 1).**
C Budgets and financial planning	**✔ AM plans are used to inform budgets (beyond Level 1).**

What results has the town experienced?

Council has embraced the need for good asset information and strong asset management plans. After replacing the town's water system, a rate review found that water utility services were significantly underfunded. Accurate and current data was needed to justify rate increases.

Council is now looking to initiate the preparation of a long-term financial plan. The town wants to be a forward-thinking community that is able to meet its asset needs.

Contribution to asset management practice

What does this competency involve?

Supporting staff in asset management training, sharing knowledge internally to communicate the benefits of asset management and participating in external knowledge sharing.

Outcomes

Level 1—Training and development
Our AM training and development approach is informal and largely driven by the personal initiative of staff. Some staff conduct targeted research, seeking out basic information on AM concepts and techniques.

Level 1—Internal communication and knowledge-sharing
We are aware of the need to mitigate the risk of losing information held in the minds of long-term staff.

Level 1—External communication and knowledge-sharing
We are investigating AM-related organizations and resources.

In other words, this means:
We're interested in asset management and have found a couple of internal champions. We've started documenting important asset information but have some work to do before asset management is an integral part of our organization.

Level 1 benefits

Your organization is starting to learn about asset management.
You've realized that you're not alone — others are in the same place as you, and there are resources available to help.
You've started to think about how to reduce knowledge loss during staff turnover.

Getting to Level 1 in contribution to asset management practice

Below are some of the steps that you may take to get to Level 1 in the contribution to asset management practice competency on FCM's Asset Management Readiness Scale. These are not prescriptive steps but rather an illustration of one approach you could take.

Level 1—Training and development
Our AM training and development approach is informal and largely driven by the personal initiative of staff. Some staff conduct targeted research, seeking out basic information on AM concepts and techniques.

- ☐ If you are your organization's asset management champion, try to find an internal ally or two. Talk to others in your organization who you think might also be promoters of asset management.
- ☐ Look into attending asset management training. Identify a couple of colleagues from different departments who could attend with you.

These activities will help boost your progress in the **people and leadership** competency.

Level 1—Internal communication and knowledge-sharing
We are aware of the need to mitigate the risk of losing information held in the minds of long-term staff.

- ☐ Identify staff with specialized asset knowledge who have a long history with the organization or are close to retirement. Identify some of the potential challenges the organization would face if these people left.

Level 1—External communication and knowledge-sharing
We are investigating AM-related organizations and resources.

- ☐ Contact your local community of practice to let them know that you're at the beginning stages of bringing asset management into your organization. Ask what resources they would recommend, and if there are people from other communities that they would recommend you talk to.
- ☐ Share with colleagues any resources you find to be helpful. Set up a central electronic folder to store asset management resources.

Remember! This is a process: by achieving Level 1, you are working toward being an active participant in asset management events and sharing knowledge with peers in other communities. This will build the strength of your organization's practices, as well as helping other communities with theirs.

A thought experiment...

When you're starting a community garden, a big part of the process is learning by doing. But you know that other communities have started their own community gardens and have probably already learned a lot of lessons. So, you might reach out to other community organizations to get their ideas and find out what some of their challenges were.

Once your garden is established and you see the fruits of your labour (pun intended!), you'll have learned much about what grows well in your garden, what doesn't, and what types of tricks are needed to keep away pests. You might want to jot these lessons down somewhere, so you can share what you've learned with others.

Whether in the early or advanced stages, there are always opportunities to learn from the challenges and success of others and build a network of people and organizations you can reach out to whenever you need help.

Tips and tricks

- Start small by having conversations with staff whose work would benefit from improved asset management practices.
- Make it fun and use asset management as a way to connect different staff members and build a team culture.
- Engage staff who have been around for a long time, especially if these staff are planning to retire in the near future.
- It's a journey. Asset management is a process and you will always be learning. Level 1 in this competency is about starting to familiarize yourself with resources and organizations out there to help you do the work you need to do.

Case study: contribution to asset management practice

County of St. Paul, AB

Population: 6,036
Land area: 3,309.44 km²


Source: County of St. Paul, Alberta

What motivated the county to get started?

The County of St. Paul administration recognized the need to think about how to prolong the life span of its infrastructure. County administration was motivated to develop asset management plans to improve decision-making and better justify priorities.

What did they do to work toward Level 1 outcomes?

- The CAO acts as a champion and communicates to council that asset management should be a top priority. The CAO regularly attends meetings with Infrastructure Asset Management Alberta (IAMA) and the Alberta Rural Municipal Administrators' Association (ARMAA) to stay informed on asset management practices.
- The county established a cross-functional team with members from finance, GIS, public works, corporate services and community services, brought together to develop an asset management strategic plan.
- The county developed a register for tangible capital assets (TCA) and categorized assets. Data was organized in a spreadsheet, including information on initial cost, useful life, replacement timeline, and replacement cost. The data in the spreadsheet was refined over time. All roads were classified by use type and use frequency to better understand maintenance needs.
- The county worked with a consultant to prepare an asset management plan.
- The CAO regularly attends meetings with other communities in Alberta to share the county's experience with asset management planning.

Level 1 outcomes achieved

A Training and development	**✔ AM training is driven by the personal initiative of staff.** **✔ Staff conduct targeted research to seek out basic AM information.**
B Internal communication and knowledge-sharing	**✔ Roads asset data is documented and refined, to mitigate the risk of losing anecdotal information.**
C External communication and knowledge sharing	**✔ The CAO regularly attends IAMA meetings (beyond Level 1).**

What results has the county experienced?

The county found the following benefits from completing an asset inventory:

- Council and staff have a stronger understanding of community assets and infrastructure upgrade needs.
- Staff have a collective understanding of asset management goals and are working together to achieve them.
- Steps have been taken to develop reserve funds for the replacement of assets.

This all helps to support the county in having a robust decision-making process and being able to plan for the future.

At a glance
Action checklist

Policy and governance	☐ Get an initial multi-department team together. ☐ Find resources on asset management and investigate the regulatory requirements in your province. ☐ Assess your organization's asset management practices and review whether you are meeting regulatory requirements. ☐ Identify some benefits, outcomes, and short-term asset management actions based on your assessment, regulatory requirements, council strategic priorities and community goals. ☐ Host a workshop with council to share the assessment results, potential objectives and expected benefits and outcomes. ☐ Seek council's commitment to developing an asset management policy.
People and leadership	☐ Identify an initial multi-department team and identify what perspectives and knowledge you need on your cross-functional team and who can fill these needs. ☐ Present to council on what asset management is and why it's important for your organization. Seek endorsement for asset management activities. ☐ Seek endorsement from council for the financial resources you need.
Data and information	☐ Identify all the places you store data on your assets. ☐ Make a list of the types of asset data you have and the format it is in. ☐ Talk to operators or public works staff to identify any critical assets that might be in poor condition or have persistent problems. ☐ Review community feedback and ask staff and council members to identify common complaints about service performance. ☐ Review the financial data you have available and use this data to determine asset depreciation and the depreciated value of the asset.
Planning and decision-making	☐ Pull together information about your community's growth, upcoming regulatory requirements, and other known asset issues and needs. ☐ Meet with your asset management team at the beginning of your annual budgeting process to discuss the information collected. ☐ As a team, define the potential projects that will help you meet the needs or address the issues identified. Discuss and prioritize these projects. ☐ Include capital projects for the upcoming year in the annual capital budget. ☐ Develop an operational budget.
Contribution to asset management practice	☐ Find an internal asset management ally (or two). ☐ Contact your local community of practice. ☐ Look into attending asset management training. ☐ Share any resources you find to be helpful with other colleagues. ☐ Identify staff who have strong asset knowledge and bring them together through a workshop to document the processes they use to make decisions about assets and asset investments.

Action planning worksheet

Policy and governance	People and leadership	Data and information	Planning and decision-making	Contribution to asset management practice
Get an initial multi-department team together. ASSIGN TEAM MEMBERS ASSIGN DUE DATE	Identify an initial multi-department team and identify what perspectives and knowledge you need on your cross-functional team and who can fill these needs. ASSIGN TEAM MEMBERS ASSIGN DUE DATE	Identify all the places you store data on your assets. ASSIGN TEAM MEMBERS ASSIGN DUE DATE	Pull together information about your community's growth, upcoming regulatory requirements, and other known asset issues and needs. ASSIGN TEAM MEMBERS ASSIGN DUE DATE	Find an internal asset management ally (or two). ASSIGN TEAM MEMBERS ASSIGN DUE DATE
Find resources on asset management and investigate the regulatory requirements in your province. ASSIGN TEAM MEMBERS ASSIGN DUE DATE	Present to council on what asset management is and why it's important for your organization. Seek endorsement for asset management activities. ASSIGN TEAM MEMBERS ASSIGN DUE DATE	Make a list of the types of asset data you have and the format it is in. ASSIGN TEAM MEMBERS ASSIGN DUE DATE	Meet with your asset management team at the beginning of your annual budgeting process to discuss the information collected. ASSIGN TEAM MEMBERS ASSIGN DUE DATE	Contact your local community of practice. ASSIGN TEAM MEMBERS ASSIGN DUE DATE
Assess your organization's asset management practices and review whether you are meeting regulatory requirements. ASSIGN TEAM MEMBERS ASSIGN DUE DATE	Seek endorsement from council for the financial resources you need. ASSIGN TEAM MEMBERS ASSIGN DUE DATE	Talk to operators or public works staff to identify any critical assets that might be in poor condition or have persistent problems. ASSIGN TEAM MEMBERS ASSIGN DUE DATE	As a team, define the potential projects that will help you meet the needs or address the issues identified. Discuss and prioritize these projects. ASSIGN TEAM MEMBERS ASSIGN DUE DATE	Look into attending asset management training. ASSIGN TEAM MEMBERS ASSIGN DUE DATE
Identify some benefits, outcomes, and short-term asset management actions based on your assessment, regulatory requirements, council strategic priorities and community goals. ASSIGN TEAM MEMBERS ASSIGN DUE DATE		Review community feedback and ask staff and council members to identify common complaints about service performance. ASSIGN TEAM MEMBERS ASSIGN DUE DATE	Include capital projects for the upcoming year in the annual capital budget. ASSIGN TEAM MEMBERS ASSIGN DUE DATE	Share any resources you find to be helpful with other colleagues. ASSIGN TEAM MEMBERS ASSIGN DUE DATE
Host a workshop with council to share the assessment results, potential objectives and expected benefits and outcomes. ASSIGN TEAM MEMBERS ASSIGN DUE DATE		Review the financial data you have available and use this data to determine asset depreciation and the depreciated value of the asset. ASSIGN TEAM MEMBERS ASSIGN DUE DATE	Develop an operational budget. ASSIGN TEAM MEMBERS ASSIGN DUE DATE	Identify staff who have strong asset knowledge and bring them together through a workshop to document the processes they use to make decisions about assets and asset investments. ASSIGN TEAM MEMBERS ASSIGN DUE DATE
Seek council's commitment to developing an asset management policy. ASSIGN TEAM MEMBERS ASSIGN DUE DATE				

Continuing your asset management journey

This guide was designed to help you get started on your asset management journey. Level 1 is just the beginning, but you should shortly be seeing benefits related to your community's service delivery goals.

As you continue on your asset management journey, stay connected and up-to-date through **FCM's website** and **FCM's Connect newsletter** and through **Asset Management Canada**, where resources and information on national and regional communities of practice are regularly updated.

What if you've read this guide and still aren't sure where to start? Contact FCM at **mamp.funding@fcm.ca** or 1-877-997-9926 (Ottawa-Gatineau: 613-907-6208).

Key concepts

The key concepts used in this document are defined below.

Asset inventory: A list of assets owned and the attributes of the assets. **Basic inventory data** includes attributes such as size, material, location and installation date. **Expanded inventory data** includes additional information such as location (coordinates), criticality, and supplementary information that is relevant for the asset class (such as type, make, model, and design capacity).

Asset management (AM) plan: A detailed plan that outlines how assets will be managed in one or more service areas. An asset management plan identifies how assets will be maintained and renewed, and the cost, level of service and risk considerations in each service area.

Asset management (AM) policy: Outlines a municipality's commitment and mandated requirements for asset management. A policy is linked to the municipality's strategic objectives and is shaped by its values and priorities.

Asset management (AM) program: The set of policies, people, practices and processes that make up a municipality's formal approach to asset management.

Asset management (AM) roadmap: A step-by-step plan outlining the actions, responsibilities, resources and time scales needed to implement and deliver asset management objectives.

Asset management (AM) strategy: A document that lays out the direction, framework and approach for implementing the community's asset management policy.

Capital plan: A plan for facility and infrastructure investments, including cost and timing information on asset renewal, decommissioning, disposal and investments in new assets.

Community of practice: A formal or informal network that supports education and knowledge sharing on a particular subject. A community of practice for asset management may refer to provincial organizations that advocate for asset management, as well as any number of informal networks.

Condition data: Information about the state of your assets. For example, a certain length of road with many potholes may be identified as being in poor condition.

Critical assets: Assets that provide extremely important functions in service delivery, especially those for which there is no available redundancy or substitution. The consequences of failure of critical assets are serious.

Cross-functional team (asset management team): A team that works across departments or disciplines to ensure that decisions integrate all relevant perspectives and priorities.

Financial information: Information about the renewal cost of the asset, and estimated timeline for renewal.

Levels of service: 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)

Long-term financial plan: A plan that balances the required costs and funding sources to meet infrastructure and service needs, over a minimum of 10 years.

Risk: The product of the likelihood and consequence of an undesirable event or circumstance. Risk includes both asset risks (e.g. a pipe failing) and strategic risks (e.g. insufficient funds for renewal of critical assets).

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

Set up a consistent approach to asset management in your municipality

Acknowledgements

This guidebook is based on best practices developed by 17 municipalities across Canada that participated in FCM's Leadership in Asset Management Program (LAMP). Their learning, as they developed asset management policies, strategies and governance, was supported by leading experts in asset management and sustainability, including Iain Cranston, Andy Whittaker, Paul Smeaton, Martin Gordon, Anna Robak, Matthew Rodwell, Catherine Dallaire, Kim Fowler and others who were part of the original Jacobs-CH2M and WSP|Opus consulting team commissioned by the LAMP municipalities to provide technical support. The consulting team has been integral in the writing of this guidebook. Donna Chiarelli was the content editor of the guidebook.

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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.

Table of contents

Table of contents *(continued)*

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.

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.

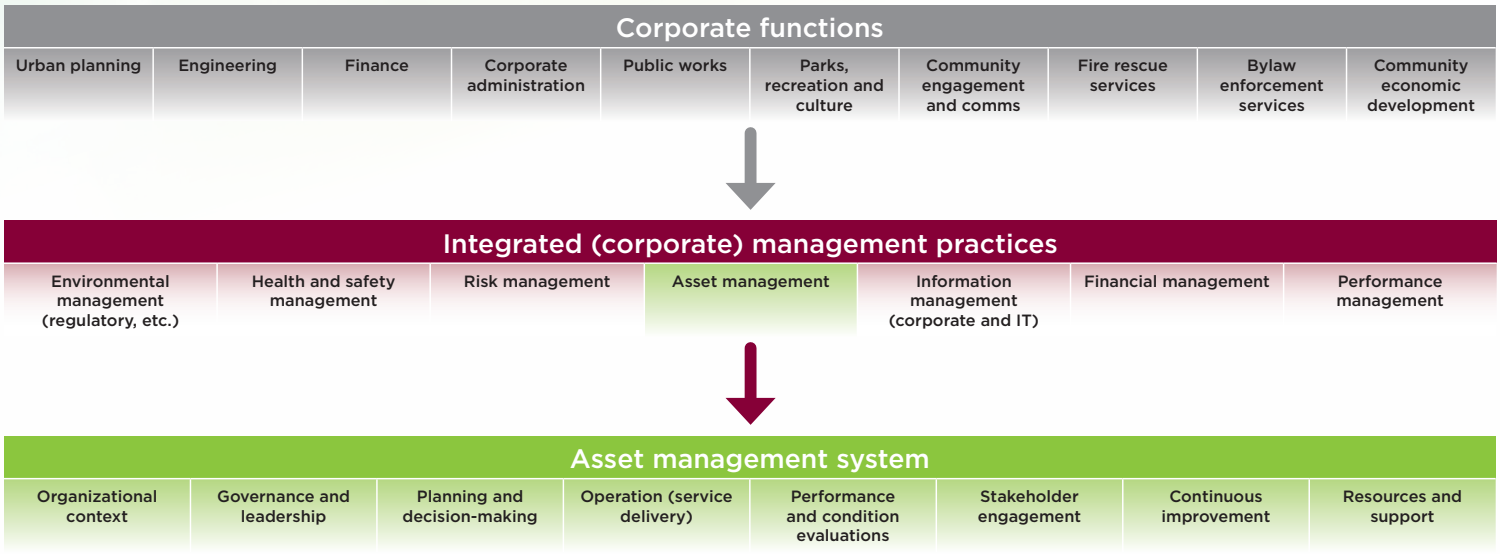
> **The asset management system is not specifically an IT system. It is the municipality's broad collection of interconnected processes and documentation designed to effectively direct and deliver the discipline of asset management. This system may be supported by various tools and IT systems.**

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.

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



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.

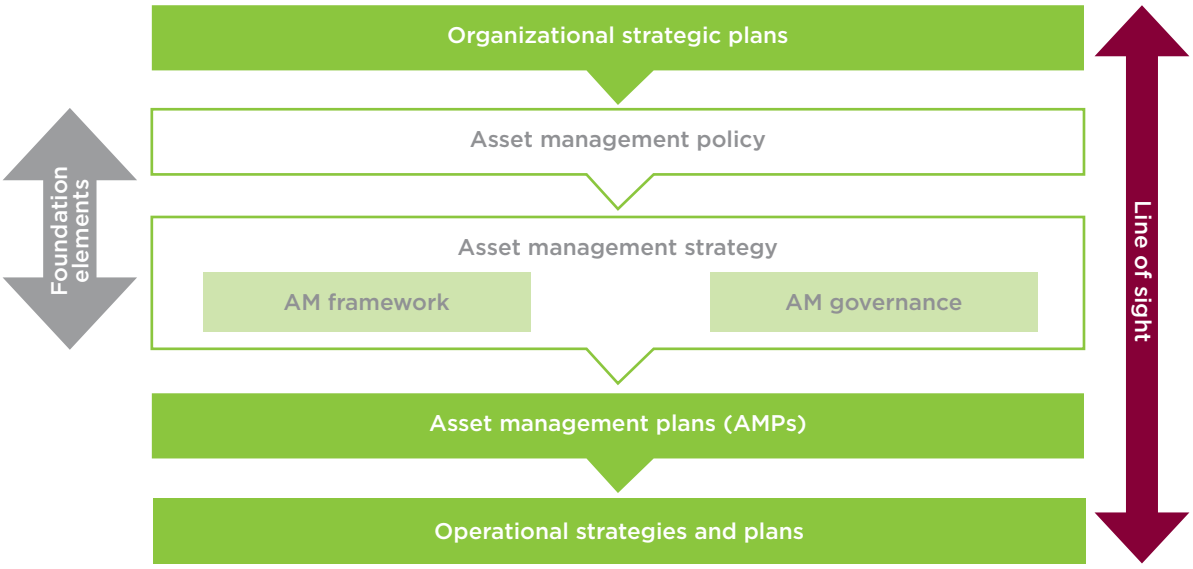
Why do we exist? What are we trying to achieve as an organization?

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

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

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.

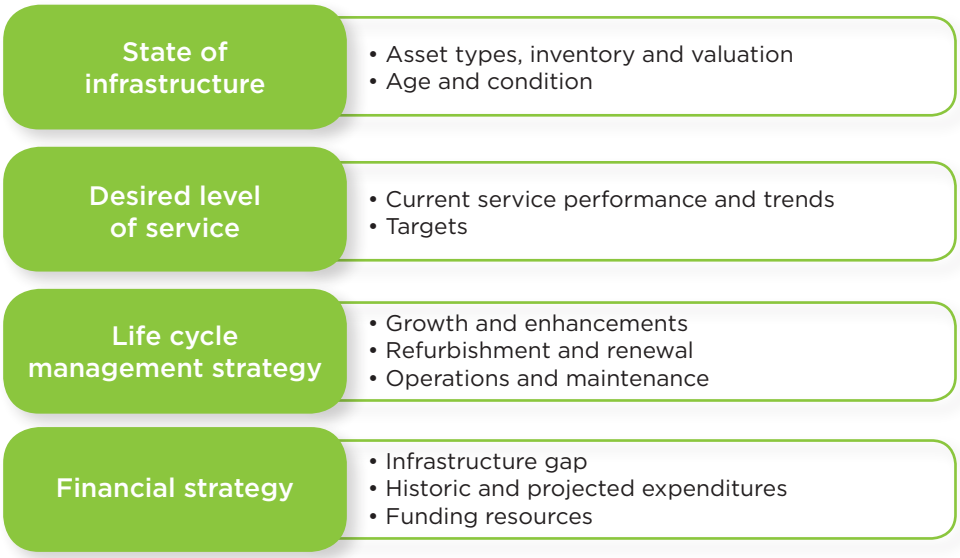
AMPs define the specific life cycle management activities and associated resources (capital and operational) needed to achieve levels of service and other asset management objectives, which, in turn, help achieve the municipality's strategic objectives. These specific activities should be planned and 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



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 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

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

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

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

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.

1.5 Additional resources

Building Sustainable and Resilient Communities with Asset Management (2018)

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

Municipal example

This policy applies to all existing and new physical assets such as roads, sidewalks, bridges, transit way, water mains, sewers, storm water ponds, pump stations, reservoirs, treatment plants, fleet, technology systems, buildings, parks, art and trees.

City of Airdrie, AB, Asset Management Policy

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.

Municipal example

Customer Service Focused: The City will have clearly defined Level of Service focused on customer outcomes and service delivery.

City of Airdrie, AB, Asset Management Policy

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.

Municipal example

The City of Melville 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 City shall:

a. continually measure the effectiveness of its asset management processes and procedures and adjust as required.

b. determine the necessary education and training requirements of AM staff and recruit, train and retain the right staff.

City of Melville, SK, Asset Management 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.

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.

Municipal example

The CAO is responsible for: Establishing an Asset Planning (AM) Steering Committee; appointing the cross-functional representatives from relevant business areas to serve on the Steering Committee as well as Chair of the Steering Committee; reviewing all information prior to presentation to Council and helping to ensure corporate adoption of AM processes and policies.

City of Windsor, ON, Asset Management Policy

Template of text to use

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.

Municipal example

The City's SAMP is a core component of the City's Asset Management System (AM System). Its purpose is to:

- **Define the role of AM in achieving the City's strategic objectives and responsibilities**
- **Provide clear communication to all stakeholders on AM**
- **Identify organizational roles and responsibilities for AM**
- **Identify and implement AM System objectives and how they support the City's strategic objectives and responsibilities**

City of Nanaimo, BC (2016 Census population: 90,504), Strategic Asset Management Plan

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

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.

The concept of "line of sight" is explained in Chapter 1 on page 5.

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

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.

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

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.

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.

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

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.**

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:

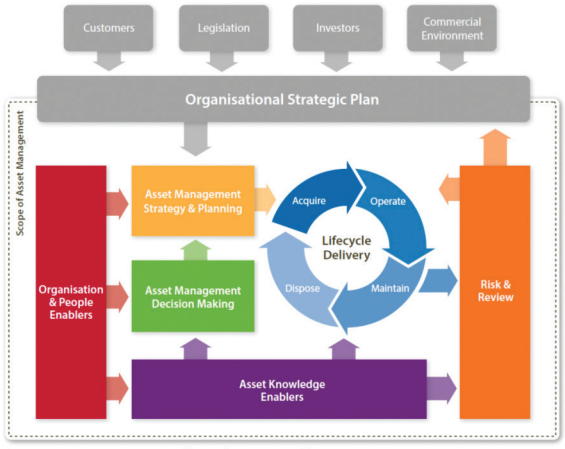
- Choose one that best reflects the actual processes and practices in your municipality.
- In addition to the visual diagram, document how activities are coordinated across your municipality so that staff (and council) understand their contribution to the overall process.

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 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.

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.**

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.

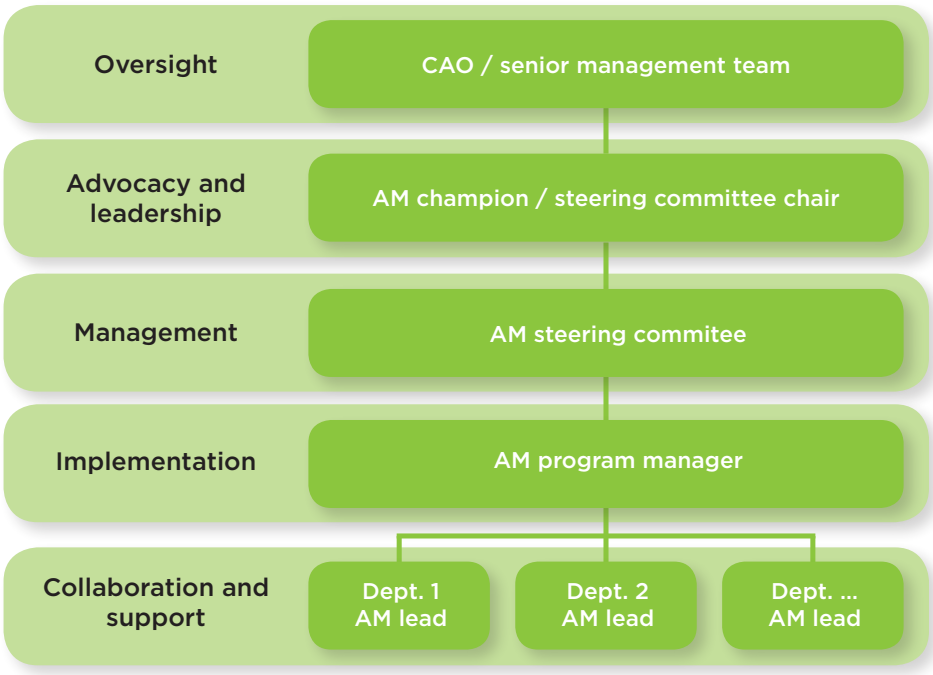
4.3 Governance structure

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



Municipal example

The CAO is responsible for: Establishing an Asset Planning (AM) Steering Committee; appointing the cross-functional representatives from relevant business areas to serve on the Steering Committee as well as Chair of the Steering Committee; reviewing all information prior to presentation to Council and helping to ensure corporate adoption of AM processes and policies.

City of Windsor, ON, Asset Management Policy

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, limplementation 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:

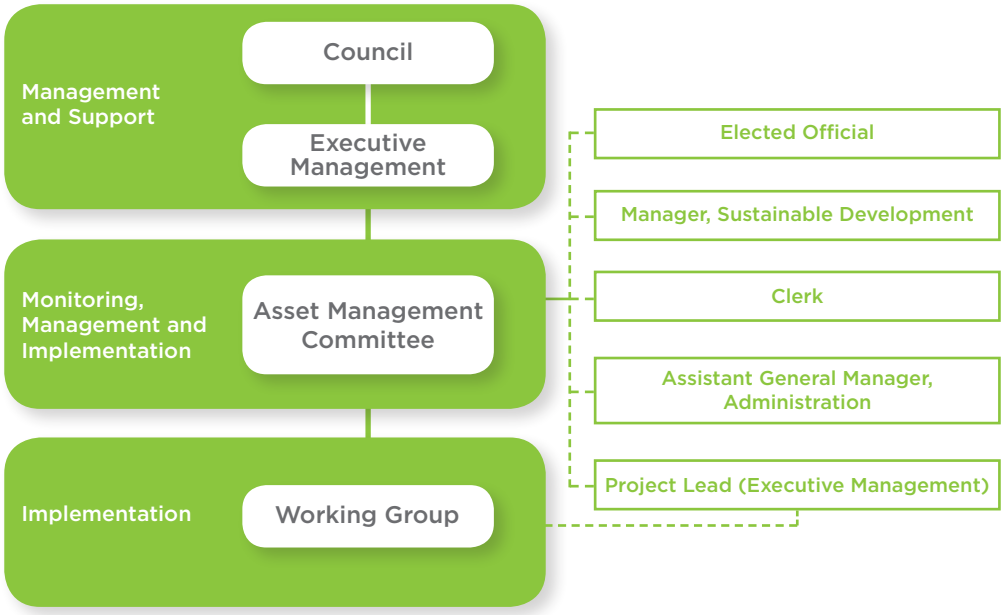
1. The level of AM awareness and readiness for change within the organization.
2. The degree of understanding of the AM roles and responsibilities throughout your municipality.
3. The size and geographic spread of your municipal staff and any resulting challenges in communication and coordination.
4. 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.

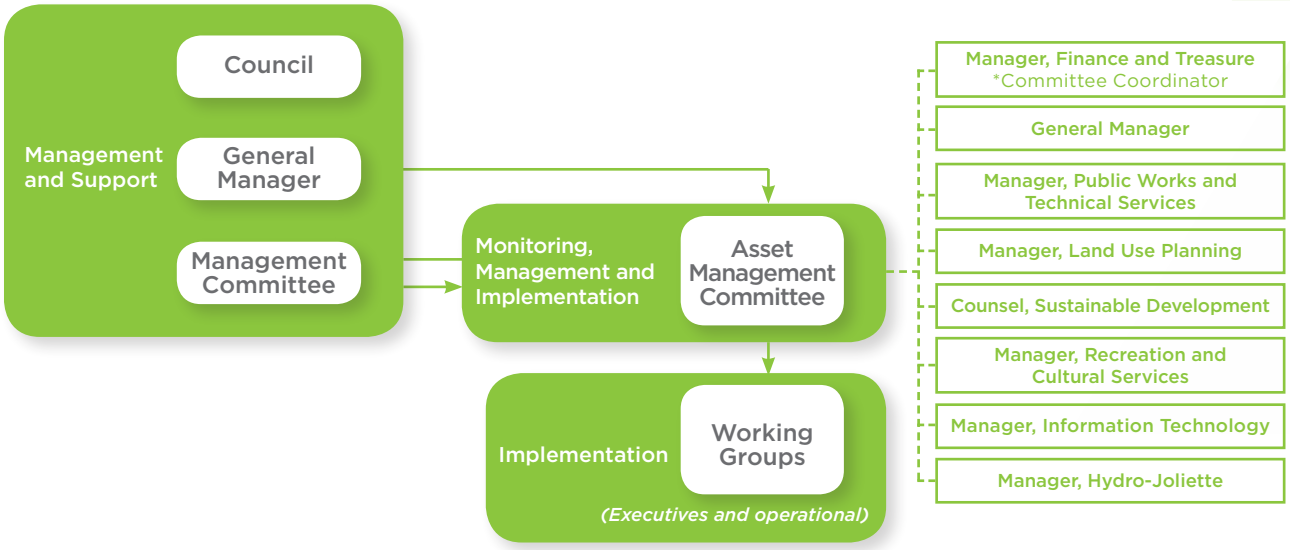
4.6 Examples of governance structures

Below are governance organizational charts developed by three LAMP municipalities:

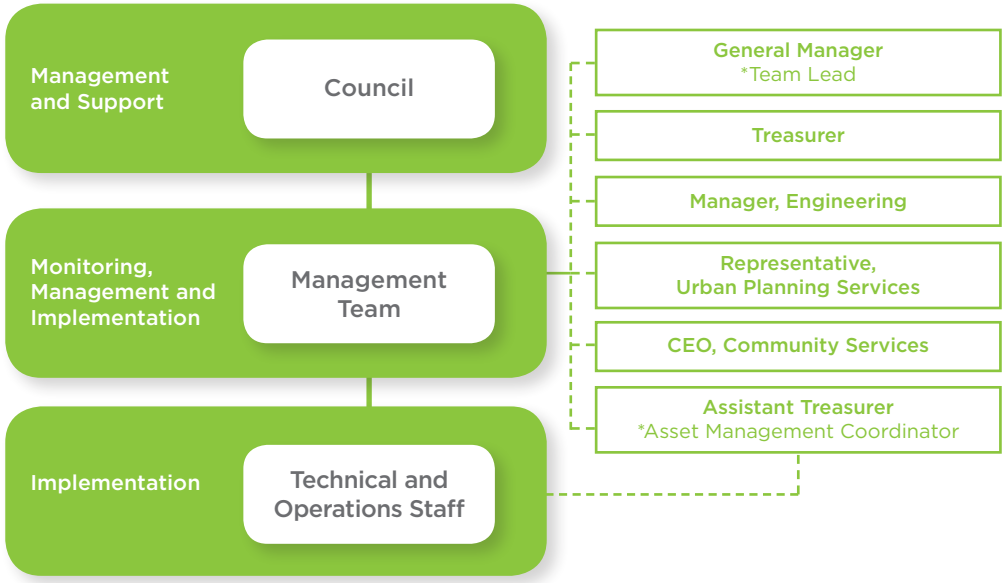
Governance structure — City of Plessisville, QC (2016 Census population: 7,195)



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



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



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.

Key insight

"The level of effort isn't in writing the AM policy, but more time is spent on communicating with the management team and council on what needs to be in the AM policy and why."

Patrick Brisson, Program Manager, Comprehensive Asset Management, Infrastructure Services, City of Ottawa, ON

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.

Municipal example

"In my experience, communications tactics are an important part of the bigger change management strategy that is needed to support staff in adopting new business processes that have people working together on asset management. The City of Airdrie is developing a short- and longer-term strategy that will introduce, educate and reinforce the principles and actions in our Asset Management Policy and Strategy."

Fernando Smith-Avendano, Asset Management Coordinator / Program Manager, City of Airdrie, AB

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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FCM offers funding and resources to support local governments in their asset management planning and initiatives.

Visit **fcm.ca/AssetManagementProgram** to learn more.

Canada

The Municipalities for Climate Innovation Program, the Municipal Asset Management Program and the Green Municipal Fund are delivered by FCM and funded by the Government of Canada.

Questions to ask BEFORE your municipality considers asset management software

Ask yourself…

1. **Do we need it?**
   Asset management is a business practice, not a software solution. Many communities find that a spreadsheet is all they need to get started.

2. **Are we ready for it?**
   Software is only useful when it is populated with good data and supports sound business practices. Before buying software, collect and organize your data and put your asset management processes in place. It is also critical to allocate budget for keeping data current and maintaining the software system.

What is Asset Management Software?

While there is no official definition of "asset management software," this document refers to applications designed to help you collect, manage, store, visualise and/or analyze your asset-related data. Options range significantly in price and functionality from inexpensive applications like programmed excel spreadsheets, to more costly and integrated software suites that can incorporate any mix of inventory, financial, maintenance, and asset life-cycle functions.

Asset management software CAN…	Asset management software CANNOT…
✓ Store data in a central place	× Make decisions for you
✓ Process large amounts of information	× Define your asset management processes
✓ Help link data across functional groups (e.g. finance and public works)	× Collect data or keep your data up to date
✓ Incorporate geo-spatial data into your analysis	× Ensure the quality of your data
✓ Facilitate the modeling of different scenarios	× Develop an asset management plan
✓ Help conduct standard asset management analysis of your data (e.g. risk, life-cycle costs)	× Tell you what information is useful in your decision-making process
✓ Flag events to support decision-making	× Test the logic of your outcomes
✓ Present data in a way that supports decision-making	× Innovate or improve your asset management practices
✓ Support corporate memory	× Provide leadership on asset management in your organization

Important tips

* **Make software a team decision.**
  Asset management is cross-functional. The purchase of asset management software should include the same group of professionals from across your organization.

* **Know the outputs you want to get from your software.**
  What analysis do you want the software to do? What business processes will it feed? How do you want the information to be displayed or reported?

  Hint: Try mapping your requirements using a spreadsheet first!

* **Training and implementation support are essential to success.**
  Have a plan for training staff and a succession plan in case key staff leave. It takes time and energy to adopt a new software system — budget for training and implementation support for staff across your organization.

Questions to ask suppliers

- How well does your solution align with my data and business processes?
- Is your solution compatible with my current information systems?
- Is the data structure open or proprietary?
- Can I add functionality later and how expensive might that be?
- What level of technical support is available and at what cost?
- How close is the nearest technical support?
- What training is included in the set up of the software? How much would each additional session cost?
- Will I own my data?
- Where is the data stored?
- What are the licensing and maintenance fees?
- Will I need to upgrade my hardware?
- What is your commitment to maintenance and updates?
- Have other municipalities used this solution and can I talk to them?

Special Thanks!

This content was developed by the Technical Working Group of FCM's Municipal Asset Management Program. The Technical Working Group is comprised of an exceptional group of municipal practitioners and experts from across Canada.