

Municipal **Asset Management** Program

Asset Management
Readiness Scale



Table of Contents

The Asset Management Readiness Scale	1
What is a readiness scale?	1
How can you use the Asset Management Readiness Scale?	1
How does this readiness scale work?	1
Self-assessment instructions	2
Tips	2
Introduction to asset management and key terms	3
What is asset management?	3
How are asset management systems governed and implemented?	4
What kind of data and information is used in asset management?	5
How can training, development and knowledge sharing support asset management?	5
Competency: POLICY AND GOVERNANCE	6
Competency: PEOPLE AND LEADERSHIP	7
Competency: DATA AND INFORMATION	8
Competency: PLANNING AND DECISION-MAKING	9
Competency: CONTRIBUTION TO ASSET MANAGEMENT PRACTICE	10
Notes:	11

The Municipal Asset Management Program is a new five-year, \$50-million program designed to help municipalities make informed decisions about infrastructure investment. The program is offered by the Federation of Canadian Municipalities and funded by the Government of Canada.





The Asset Management Readiness Scale

What is a readiness scale?

Readiness scales are widely accepted for a number of different uses. This readiness scale measures progress of local governments as they adopt asset management practices. Readiness scales provide a common method for assessing progress, or level of adoption, across diverse groups. They allow individuals or organizations to assess their current state against a progressive scale.

How can you use the Asset Management Readiness Scale?

The needs of municipalities vary widely, and the approaches to implementing asset management differ in communities across the country. The Asset Management Readiness Scale will allow you to measure your progress along a common scale regardless of the implementation framework you choose. This document is meant to complement any asset management approach being implemented in any jurisdiction across Canada. It is applicable to any municipality or local government organization.

The scale shows that creating and implementing an asset management system is a step-by-step process that takes time and resources and does not happen overnight. It is meant to structure the asset management journey and provide an objective means of evaluating progress.

How does this readiness scale work?

This scale describes five asset management “competencies”:

- **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 (O&M) planning, and decides on budgets.
- **Contribution to asset management practice:** Training and staff development, sharing knowledge internally and participating in external knowledge sharing.

For each asset management competency, there are five levels. The five levels form a progressive scale, from initial investigation to adoption and, eventually, full integration of asset management practices into daily routines. The “outcomes” described at each level show, in practical terms, what it means to be at that level. This information can help you set goals and objectives, and design initiatives that you may wish to have funded through the Municipal Asset Management Program.

If you are new to asset management, or need an introduction to key asset management terms, read the “Introduction to Asset Management” section on the next page before using the readiness scale to conduct a self-assessment.

Self-assessment instructions

1. Bring a group of cross-functional staff together to conduct the self-assessment — this should not be done by one person in isolation.
2. For each asset management competency, read through the descriptions and outcomes for each level.
3. Discuss and evaluate your organization’s current state.
4. Assign your organization the level for which it has completed the corresponding outcomes.
5. On the “notes” page, document why you chose this level. What specific actions has your municipality taken that correspond with this level?

Tips

- When self-assessing, choose the level that describes your achieved outcome. (The exception would be Level 1, at which point you may be in the process of getting started.) If you are still working on a specific level, assign yourself the previous level.
- You need not progress through the five competencies in any particular order. Where you focus your efforts is entirely up to you and will depend on your local needs and priorities.



Introduction to asset management and key terms

What is asset management?

Any organization that owns physical assets (such as property, equipment or technology) engages in some form of **asset management** when caring and planning for those assets. Municipalities and local governments must manage publicly owned assets as part of their mandate to provide services to communities. In some cases, natural assets such as aquifers also provide critical municipal services and should be considered when managing assets.

... Assessing the health of municipal infrastructure is necessary if Canada is to ensure that the services, quality of life and economic growth provided by this infrastructure can be sustained over the long term.

— Canadian Infrastructure Report Card, 2016

Municipalities and local governments with an asset management **program** have chosen a structured approach to asset management — a specific way of doing business that continually balances expenditure with performance and risk. The ultimate aim is to ensure that they invest resources well, meet customer service levels and achieve the **organizational strategic plan** effectively and efficiently.

Asset management also provides a means for elected officials and municipal administrators to demonstrate the value of infrastructure planning and maintenance while balancing social, environmental and economic factors.

To support effective asset management planning and decision-making, an organization must establish an **asset management system** — a set of interrelated elements including governance, people, processes, data and technology. Once your asset management system is established, you will be able to say the following:

*Our organization uses a **formalized and holistic approach** to ensure that our resources are invested wisely over the **long term**, continually balancing operations, risks and costs in a way that provides our community with the **right service** at the **optimal cost** — not just today but with our **community's future needs in mind**.*

How are asset management systems governed and implemented?

Municipalities and local governments use specific governance tools to control and direct asset management. These include a **policy**, **strategy**, **framework**, **roadmap** and **plans**, as well as clear roles and responsibilities.¹



An organization's asset management **policy** outlines its commitment and mandated requirements for asset management. The policy is linked to the organization's strategic objectives and is shaped by the organization's values and priorities.

An asset management **strategy** outlines the **framework** and approach for implementing the asset management policy. This framework is the conceptual structure for the asset management system. It defines the system's internal makeup and its interactions with external practices or functions.

The asset management strategy also identifies **objectives** (specific, measurable outcomes required of assets and asset management) and reporting requirements. These include **service objectives** (the desired level of service to the community).

¹ The figure above is adapted from The Institute of Asset Management's diagram from BSI, PAS 55-1:2008, Figure 5, Page 10. www.theIAM.org

The step-by-step plan for implementing the strategy is the asset management **roadmap**. It identifies actions, responsibilities, resources and timescales. An organization will also have one or more **asset management plans** that outline more specifically how the asset management system will create, maintain and renew infrastructure and other assets. To create an asset management plan, an organization first does a needs assessment (looking at the current and future gaps in asset service and performance). This needs assessment forms the justification for an asset investment plan, which outlines how and where money will be spent to address the gaps. The asset investment plan is accompanied by a **financial plan** that identifies the source of funds.

For example, the **capital plan** outlines the scope, cost and schedule of investments in new infrastructure or infrastructure renewal (financed from a capital budget). The **operations and maintenance (O&M) plan** describes the scope, frequency and cost of operation and maintenance activities (financed from an operating budget).

What kind of data and information is used in asset management?

Assets are generally grouped together based on the service function they provide. Major **asset groups** contribute to the delivery of essential municipal services, such as water, wastewater and transportation. Minor asset groups contribute to non-essential services, such as recreation. Effective asset management relies on information about specific assets and asset groups, including the following types of data:

- Basic inventory data includes general asset properties such as size, material, location and installation date.
- Pooled inventory data is basic inventory data organized by asset group.
- Expanded inventory data includes additional, supplementary information on the asset (e.g. design criteria, installation method), its location (coordinates, connectivity) or its role in service delivery (e.g. function, relative importance).
- Financial data includes tangible capital asset inventories and valuations, lifecycle costs, and budgets related to operation and maintenance and capital expenditures.
- Service adequacy or effectiveness is measured as a level of service. Levels of service are evaluated from various perspectives: corporate, end-user and asset or operational.

How can training, development and knowledge sharing support asset management?

Introductory training on asset management includes asset management **awareness training**, which may focus on the concepts, organizational context and value of asset management, as well as its impact on people and processes. Advanced asset management training includes additional concepts specific to one's roles and responsibilities. Asset management requires both hard skills (such as the analysis of financial, demand, geospatial and asset data) and soft skills (such as stakeholder engagement, communicating horizontally and vertically across silos, and teamwork).

Part of having an effective asset management program is the ongoing development of **organizational capacity**. This includes participation in **asset management organizations** – industry groups and communities of practice that promote and support effective asset management through training, networking and knowledge sharing amongst leaders and practitioners. Asset management organizations can be global, national or regional. Examples include Asset Management British Columbia (AMBC), the Canadian Network of Asset Managers (CNAM) and the Institute of Asset Management (IAM).

ASSET MANAGEMENT READINESS SCALE						
Competency: POLICY AND GOVERNANCE						
Readiness Level	1		2	3	4	5
	Working on Level 1 <input type="checkbox"/>	Completed Level 1 <input type="checkbox"/>	Completed Level 2 <input type="checkbox"/>	Completed Level 3 <input type="checkbox"/>	Completed Level 4 <input type="checkbox"/>	Completed Level 5 <input type="checkbox"/>
Outcomes	You have achieved a specific readiness level when you can demonstrate the corresponding outcomes below.					
Policy and Objectives	<ul style="list-style-type: none"> Senior management has committed to formalizing an AM program. 	<ul style="list-style-type: none"> We have drafted an AM policy. Senior management and council have endorsed the AM policy. 	<ul style="list-style-type: none"> We are starting to use AM policy objectives to guide our actions. 	<ul style="list-style-type: none"> We are managing assets and services in accordance with AM policy and organizational objectives. 	<ul style="list-style-type: none"> We are validating and refining corporate, service and AM objectives based on the evolving needs of our community. 	
Strategy and Framework	<ul style="list-style-type: none"> We have drafted a basic set of objectives that will guide the development of our AM system. 	<ul style="list-style-type: none"> We have completed the strategy and framework for our AM system. 	<ul style="list-style-type: none"> We have established a roadmap to guide the detailed actions surrounding our AM strategy deployment. 	<ul style="list-style-type: none"> We are achieving our AM policy objectives through a fully functional AM system. Necessary workflows, documents and reporting tools are in place. We are updating our roadmap to address evolving needs. 	<ul style="list-style-type: none"> We are following our roadmap in continually improving the AM system and in documenting the improvements. 	
Measurement and Monitoring	<ul style="list-style-type: none"> We have defined the expected AM system benefits and outcomes. 	<ul style="list-style-type: none"> We have documented our AM system plans and our objectives for the coming year. 	<ul style="list-style-type: none"> We have established performance measures to monitor AM system progress and its outcomes and benefits to our community. 	<ul style="list-style-type: none"> We are using performance measures to monitor progress and AM system outcomes and benefits. 	<ul style="list-style-type: none"> We are monitoring performance and using the feedback to prioritize and make ongoing refinements and improvements. 	

ASSET MANAGEMENT READINESS SCALE

Competency: PEOPLE AND LEADERSHIP

*This competency involves setting up **cross-functional groups** with clear **accountability**, and ensuring adequate **resourcing and commitment** from senior management and elected officials to advance asset management (AM).*

	1		2	3	4	5
	Working on Level 1 <input type="checkbox"/>	Completed Level 1 <input type="checkbox"/>	Completed Level 2 <input type="checkbox"/>	Completed Level 3 <input type="checkbox"/>	Completed Level 4 <input type="checkbox"/>	Completed Level 5 <input type="checkbox"/>
Readiness Level	We have council support to establish a cross-functional AM team to explore AM needs and develop a plan for improving our AM system.	We have a clear mandate for our AM team, and council has approved funding for priority improvements to our AM system.	Our AM team has clear responsibility for improving our AM system. Council champions AM as a core business function.	Our AM team is responsible for guiding and supporting AM on an ongoing basis. AM system roles and responsibilities are operationalized.	Our council's commitment drives continuous improvement of the AM system. Roles and responsibilities evolve to meet ongoing needs.	
Outcomes	You have achieved a specific readiness level when you can demonstrate the corresponding outcomes below.					
Cross-Functional Groups	<ul style="list-style-type: none"> We have appointed resources to investigate our community's AM requirements and to define and introduce an appropriate AM system. 	<ul style="list-style-type: none"> We have formed a cross-functional AM team* to guide and oversee AM system planning and deployment. 	<ul style="list-style-type: none"> The AM team* works within our organization to lead, communicate and support AM improvement and change management. 	<ul style="list-style-type: none"> Our AM team* has been made permanent and tasked with guiding and supporting the AM function across the organization on an ongoing basis. 	<ul style="list-style-type: none"> The AM team* guides and supports the ongoing improvement of the AM system within the organization. 	
Accountability	<ul style="list-style-type: none"> Appointed resources have been mandated to investigate and assess our AM needs planning, documented by a draft terms of reference. 	<ul style="list-style-type: none"> Our AM team* has been made accountable for guiding AM development, with a documented mandate and terms of reference. 	<ul style="list-style-type: none"> Our AM team* has been made accountable for AM implementation and we have added AM system roles and responsibilities to staff job descriptions. 	<ul style="list-style-type: none"> We have operationalized AM system roles and responsibilities across our organization. 	<ul style="list-style-type: none"> We are documenting changes to AM system roles and responsibilities as needed to support our evolving requirements. 	
Resourcing and Commitment	<ul style="list-style-type: none"> Council is aware of the resourcing and funding dedicated to exploring AM system requirements and to proposing an AM roadmap. 	<ul style="list-style-type: none"> Council demonstrates buy-in and support for AM and has approved funding for priority improvements. 	<ul style="list-style-type: none"> Council champions AM as a core business function and has approved funding to continue AM roadmap activities. 	<ul style="list-style-type: none"> Council has approved funding for ongoing AM system monitoring and enhancement. 	<ul style="list-style-type: none"> The AM team measures and monitors progress. Council is committed to ongoing improvement of the AM system. 	

* 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.

ASSET MANAGEMENT READINESS SCALE

Competency: DATA AND INFORMATION

*This competency involves using **asset data**, **performance data** and **financial data** to support effective asset management (AM) planning and decision-making.*

	1		2		3		4		5	
	Working on Level 1 <input type="checkbox"/>	Completed Level 1 <input type="checkbox"/>	Completed Level 2 <input type="checkbox"/>	Completed Level 3 <input type="checkbox"/>	Completed Level 4 <input type="checkbox"/>	Completed Level 5 <input type="checkbox"/>				
Readiness Level	We have inventory data and financial data, aligned with minimum reporting requirements for tangible capital assets.	We have basic inventory data for major assets, including some condition and performance data. We have detailed financial data for some of our assets.	We have basic inventory data for all our assets, with some level of service information and standardized condition ratings. We have linked AM and financial information for our major assets.	We have expanded inventory data on major assets, including condition and performance information. We have basic forecasts and risk assessments for some assets. We have a long-term community financial plan in place.	We have expanded inventory data on all assets. We have performance forecasts and risk assessments in place for most assets.					
Outcomes	You have achieved a specific readiness level when you can demonstrate the corresponding outcomes below.									
Asset Data	<ul style="list-style-type: none"> We have pooled inventory data, including approximate quantities of assets within most asset groups. 		<ul style="list-style-type: none"> We have basic inventory data for most major assets, including information on general asset properties such as size, material, location and installation date. 		<ul style="list-style-type: none"> We have basic inventory data for all assets. We have defined life cycle investment requirements for some assets. 		<ul style="list-style-type: none"> We have expanded inventory data, and have evaluated the relative risks and life cycle investment requirements associated with major assets. 		<ul style="list-style-type: none"> We have expanded inventory data and have evaluated the relative risks and life cycle investment requirements associated with most assets. 	
Performance Data	<ul style="list-style-type: none"> We have informal or anecdotal approaches for measuring asset condition or performance. Some age information exists. 		<ul style="list-style-type: none"> We have some information on asset condition and performance for major assets, collected from a variety of sources. 		<ul style="list-style-type: none"> We use standardized condition rating systems for most asset groups. Some level of service measures have been defined and data has been captured. 		<ul style="list-style-type: none"> We have defined and measured levels of service for most assets. We have introduced basic needs forecasting and risk management strategies for most assets. 		<ul style="list-style-type: none"> We have completed needs forecasts and risk management strategies for most assets. 	
Financial Data	<ul style="list-style-type: none"> We have financial data on our assets, supporting minimum PS-3150 reporting requirements.² 		<ul style="list-style-type: none"> We have captured capital and operating expenditure data for some assets. We have developed a strategy to link AM and financial information. 		<ul style="list-style-type: none"> We have captured capital and operating expenditure data for most assets. We have linked AM and financial information for all major assets. 		<ul style="list-style-type: none"> We have calculated the cost of service delivery for all major assets. We have developed a long-term (at least 10-year) financial plan. 		<ul style="list-style-type: none"> We understand the trade-offs between investment and the quality of the front-line services we deliver and we use this to refine our financial plans. 	

² PS-3150 is the Public Sector Accounting Board's standard guiding the treatment of tangible capital assets.

ASSET MANAGEMENT READINESS SCALE

Competency: PLANNING AND DECISION-MAKING

*This competency involves **documenting and standardizing** how the organization sets asset management (AM) priorities, conducts **capital and operations and maintenance (O&M) planning**, and decides on **budgets**.*

	1		2	3	4	5
	Working on Level 1 <input type="checkbox"/>	Completed Level 1 <input type="checkbox"/>	Completed Level 2 <input type="checkbox"/>	Completed Level 3 <input type="checkbox"/>	Completed Level 4 <input type="checkbox"/>	Completed Level 5 <input type="checkbox"/>
Readiness Level	Our asset investment plans address basic needs and respond to known problems. We evaluate priorities based on experience, council and management input and available information.	Our asset investment plans address observed short-term issues. We evaluate each need individually, and teams set priorities independently of each other, based on objectives and criteria representing the needs of their departments.	Our asset investment plans manage short-term risks and service impacts. We set priorities based on common organizational goals and objectives. We have drafted preliminary AM plans.	Our asset investment plans balance short-term service objectives (our desired level of service) with longer-term goals and risks. Planning is carried out using our AM system and kept up to date via normal business.	Our asset investment plans are integrated to address risks to both service and business goals. We have detailed AM plans for all services. We are continually improving our approach.	
Outcomes	You have achieved a specific readiness level when you can demonstrate the corresponding outcomes below.					
Documentation and Standardization	• Our approach to asset investment planning varies across the organization.	• Our departments follow a similar but informal asset investment planning approach. • We evaluate investment needs and priorities based on a mix of structured and ad-hoc practices and criteria.	• We have developed a structured asset investment planning approach but application is inconsistent. • We set priorities using similar criteria based on organizational goals and objectives.	• We employ our structured asset investment planning approach across our core services. • We set priorities using criteria which are fully aligned with our organizational goals and objectives.	• We employ our structured asset investment planning approach across all services. • We adapt our planning approach and criteria to align with evolving organizational goals and objectives.	
Asset Investment Plans	• Our asset investment plans are typically reactive and focus on addressing basic needs (e.g. growth, regulations and known problems).	• Our asset investment plans are largely based on short-term asset, organizational and environmental issues. We do not have an AM plan.	• Our asset investment plans are based on short-term issues and priorities. We have drafted preliminary AM plans for priority services.	• Our asset investment plans are based on both short- and long-term issues and priorities. We have developed detailed AM plans for core services	• We have integrated and optimized asset investment plans. We have developed detailed AM plans for all services.	
Budgets	• We prepare annual capital and operating budgets which are based on historical values. We deal with new needs reactively, as they occur.	• We prepare annual capital and operating budgets which are based on a mix of historical values and new priorities.	• We prepare an annual capital budget which is based on a fresh reassessment of current needs. Our operating budget is based on a mix of historical values and new priorities.	• We prepare annual needs-based capital and operating budgets which are based on a fresh reassessment of risks and current needs.	• We prepare multi-year needs-based capital and operating budgets which are based on our short- and mid-term needs. We take a structured approach to addressing in-cycle changes.	

ASSET MANAGEMENT READINESS SCALE

Competency: CONTRIBUTION TO ASSET MANAGEMENT PRACTICE

*This competency involves asset management (AM) **training and developing** staff, **sharing knowledge internally** and participating in **external knowledge sharing**.*

	1		2	3	4	5
	Working on Level 1 <input type="checkbox"/>	Completed Level 1 <input type="checkbox"/>	Completed Level 2 <input type="checkbox"/>	Completed Level 3 <input type="checkbox"/>	Completed Level 4 <input type="checkbox"/>	Completed Level 5 <input type="checkbox"/>
Readiness Level	AM development is informal and largely driven by the personal initiative of team members.	Our organization has membership in one or more AM organizations and selected staff are trained on basic AM concepts.	Our organization is an active participant in industry events. All staff receive basic AM awareness training.	Our organization contributes to industry events and shares experience with peers. An AM training plan is in place for all positions	Our organization is viewed as a thought leader and coach. Select staff are trained as internal AM experts.	
Outcomes	You have achieved a specific readiness level when you can demonstrate the corresponding outcomes below.					
Training and Development	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Our AM training and development requirements are defined by management based on short-term needs. Selected staff are trained on basic AM concepts. 	<ul style="list-style-type: none"> We provide all our staff with basic AM awareness training. Some staff undergo training on advanced AM concepts specific to their roles and responsibilities. 	<ul style="list-style-type: none"> We have defined AM knowledge and skill requirements, and a training plan is in place for all positions. Management and staff receive role-appropriate AM training to establish needed capacity across the organization. 	<ul style="list-style-type: none"> 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. 	
Knowledge Sharing – Internal	<ul style="list-style-type: none"> We are mitigating the risk of losing information held in the minds of long-term staff, through improved record keeping. 	<ul style="list-style-type: none"> We have mitigated the risk of losing information held in the minds of long-term staff, through improved record keeping. 	<ul style="list-style-type: none"> A culture of knowledge sharing is taking root internally, supported by official initiatives. Our organization maintains AM knowledge resources (e.g. manuals, training, software). We communicate the benefits of AM internally. 	<ul style="list-style-type: none"> There is a culture of knowledge sharing supported by official and informal initiatives. We maintain and disseminate AM knowledge resources (e.g. manuals, training, software). 	<ul style="list-style-type: none"> Knowledge is captured and flows freely throughout the organization. Staff are leveraging internal and industry knowledge and leading practice resources. 	
Knowledge Sharing – External	<ul style="list-style-type: none"> We are in the process of investigating industry groups and resources. 	<ul style="list-style-type: none"> Staff or elected officials have attended AM-related events. 	<ul style="list-style-type: none"> We are members of one or more AM organizations and actively participate in industry events. 	<ul style="list-style-type: none"> We are actively involved in AM organizations and present at industry events. We have shared information with our peers on our experience, innovations and lessons learned. 	<ul style="list-style-type: none"> We are a thought leader within the industry. We are active in coaching others to improve the overall body of knowledge. We communicate the benefits of our AM program to the public. 	

ASSET MANAGEMENT READINESS SCALE

NOTES:

Provide rationale for assigning each readiness level. What specifically have you done that puts you at the readiness level you have selected?

Competency	Readiness Level	Notes
Policy and governance Putting in place policies and objectives related to asset management, bringing those policies to life through a strategy and 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 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 developing staff, sharing knowledge internally and participating in external knowledge sharing.		



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