

The background features a large, light purple gear in the lower-left quadrant. Several thin, light purple lines radiate from the gear and other points, connecting to various circles of different sizes. Some circles are solid light purple, while others are hollow. A thick, solid orange vertical bar runs along the right edge of the page.

**Risk: How Asset Management Can Help**

# 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](http://fcm.ca/assetmanagementprogram)



### 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

---

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

# Table of Contents

---

<b>WELCOME</b> .....	<b>1</b>
<b>USING THE WORKBOOK</b> .....	<b>2</b>
<b>LEARNING GOAL: ASSET MANAGEMENT REFRESH.</b> .....	<b>3</b>
<b>MODULE 1 – IDENTIFY RISKS IN A MUNICIPALITY</b> .....	<b>7</b>
<b>LEARNING GOAL: DEFINE RISK</b> .....	<b>7</b>
<b>LEARNING GOAL: IDENTIFY MUNICIPAL RISKS TO SERVICE DELIVERY</b> .....	<b>12</b>
<b>MODULE 2 – IDENTIFY HOW ASSET MANAGEMENT SUPPORTS MUNICIPAL RISK MANAGEMENT.</b> .....	<b>16</b>
<b>LEARNING GOAL: DESCRIBE THE BASIC PROCESS FOR RISK MANAGEMENT</b> .....	<b>16</b>
<b>LEARNING GOAL: IDENTIFY HOW ASSET MANAGEMENT SUPPORTS RISK MANAGEMENT</b> .....	<b>21</b>
<b>LEARNING GOAL: IDENTIFY ASSET MANAGEMENT TOOLS THAT SUPPORT RISK MANAGEMENT</b> .....	<b>23</b>
<b>MODULE 3 – IDENTIFY COUNCIL'S ROLE IN RISK MANAGEMENT.</b> .....	<b>26</b>
<b>LEARNING GOAL: DESCRIBE COUNCIL'S ROLE IN THE RISK MANAGEMENT PROCESS</b> .....	<b>26</b>
<b>YOU'VE MADE IT!</b> .....	<b>29</b>
<b>GLOSSARY</b> .....	<b>30</b>
<b>RESOURCES</b> .....	<b>30</b>



# Welcome

---

Welcome to *Risk: How Asset Management Can Help*. This course has been designed to equip you, as elected officials, with a basic understanding of asset management and risk to support you in your roles.

Some of you will be new to your roles as elected officials, while others may have served or worked in local government for many years. We hope the content of this course will benefit everyone here. There will be many discussion opportunities, and everyone will have a chance to bring their unique experiences to the conversation.

We hope that at the end of this course, you feel comfortable with the following topics:

- Defining risk and identifying specific risks to your municipality
- Understanding the basic process of risk management
- Defining asset management and how it can support risk management
- Knowing which asset management tools to use for risk management
- Understanding council's role in the risk management process

Your feedback on this course is valuable to us and will help us adapt this course to better serve the needs of elected officials. Over the course of the day, we will ask you to share your questions, insights, and experiences. We will also be asking you to complete evaluation forms and we thank you in advance for your feedback.

## Asset Management and Elected Officials

---

A few important points to get us started:

**Asset management** is the process of making decisions about using and caring for infrastructure to deliver services in a way that considers current and future needs, manages risks and opportunities, and makes the best use of resources.

**Elected officials** support asset management in their communities by being knowledgeable about good practice, supporting staff initiatives, making resources for asset management available, and asking the right questions when making decisions about infrastructure. However, there has been little training provided to elected officials to help them navigate their role in asset management.

**This course** was designed to provide you, as elected officials, with a foundation in understanding risk and the relationship with asset management so that you know how the two connect and how to consider them in your day-to-day decision-making as council.

## Using the Workbook

---



### Learning Goal

Specific learning outcome to be achieved.



### Did You Know?

Interesting facts and insights on asset management.



### Activity

Individual or group exercises designed to put learning into practice.



### Resources

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



### Glossary

Definitions of words and phrases used in the course material.



## LEARNING GOAL: **Asset Management Refresh**

Some of you may have taken the one-day introductory Asset Management for Elected Officials course and are already familiar with the asset management. For others, this may be new. To make sure we're all on the same page, let's review the key concepts of asset management.

A major component of municipal service delivery is taking care of the assets that make those services possible. An **asset**, also known as a tangible capital asset (TCA), 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.

Asset management doesn't need to be restricted to engineered assets. Natural assets, such as aquifers, riparian areas, or wetlands can provide 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 is ultimately about **sustainable service delivery**: the process of 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.

Municipalities have been managing assets for a long time. However, asset management is more than just managing assets.

**Asset management** is a systematic, organized, and integrated approach:

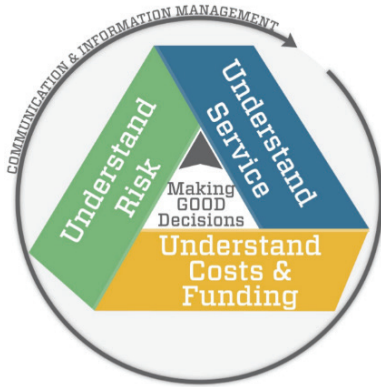
**“The process of making decisions about the use and care of infrastructure to deliver services in a way that considers current and future needs, manages risks and opportunities and makes the best use of resources”**

*(Building Community Resilience Through Asset Management: A Handbook & Toolkit for Alberta Municipalities).*

The key emphasis here is “making decisions”, as it is through decision-making that asset management is implemented. 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 where you are. Your municipality likely already uses processes for things like planning and budgeting. Asset management is about updating those processes to ensure they systematically consider the right kind of information and take a long-term perspective.

## Asset Management and Decision-Making

It is the role of council to make decisions and set direction. Making decisions in a municipal context requires thinking about trade-offs between service, risk, and cost. While it is not the role of councillors to prepare information about service, risk, and cost trade-offs, it is their role to incorporate an **asset management lens** and request information from staff to understand these trade-offs and support sound decision-making.



*Source: Building Community Resilience Through Asset Management: A Handbook and Toolkit for Alberta Municipalities*

The table below identifies some of the main considerations in service, risk, and cost. We will explore some of these in more depth later in the course.

### Service, Risk, and Cost Considerations

Service	Risk	Cost
<ul style="list-style-type: none"> <li>Types of services</li> <li>Who benefits or doesn't benefit from a particular service</li> <li>The current and desired level of service</li> <li>Regulatory requirements</li> <li>Service demands</li> </ul>	<ul style="list-style-type: none"> <li>Events that would have an undesirable impact on services</li> <li><b>Asset risk</b> describes the risk of an asset failing to perform the way you need it to deliver a service</li> <li><b>Strategic risk</b> describes a change that would affect your ability to achieve municipal objectives</li> </ul>	<ul style="list-style-type: none"> <li>Replacement and capital costs</li> <li>Operating and maintenance costs</li> <li>Revenue sources</li> <li>Partnerships</li> </ul>



Trade-offs do not necessarily mean that something gets left behind. Asset management helps you make trade-offs by putting decisions within a larger context and focusing on things like:

- The purpose of your organization and how assets support community goals
- Value, purpose, and long-term outcomes of assets
- Risk and context
- Holistic approaches to budgeting
- Collaboration

There are a number of parallels between asset management and risk management: both are ongoing processes with the end goal of sustainable service delivery. Asset management is most effective when risk management is embedded. This is the focus of this course.



### Glossary

**Asset** | Also known as a tangible capital asset (TCA), a physical component of a system that enables a service, or services, to be provided.

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

**Risk** | The relationship between the likelihood of an event happening and the consequences of that event.

**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.



### Activity

As a group, consider the following question:

**What are some examples of trade-offs between service, risk, and cost that we see in our everyday lives (may be from a municipal perspective or not)?**

# Module 1 – Identify Risks in a Municipality

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

- Define risk
- Identify risks to service delivery in a municipal context



## LEARNING GOAL: Define Risk



### Did You Know?

- 60% of Canada's core public infrastructure is owned and maintained by municipal governments.
- One-third of municipal infrastructure is in fair, poor, or very poor condition.

These numbers give us some insight on the risk facing Canada's infrastructure, however they are only part of the equation. The condition of infrastructure is an indicator of the likelihood of failure: one of the two factors of risk. Asset management, and risk management specifically can help municipalities to further understand risks by assessing the other factor in risk: the consequences.

### WHAT IS RISK?

In a municipality, risk describes events that would have an undesirable impact on services if they occurred. Risk can be described with the following equation:

$$\text{RISK} = \text{IMPACT} \times \text{LIKELIHOOD}$$

(how severe will the negative consequences be?)

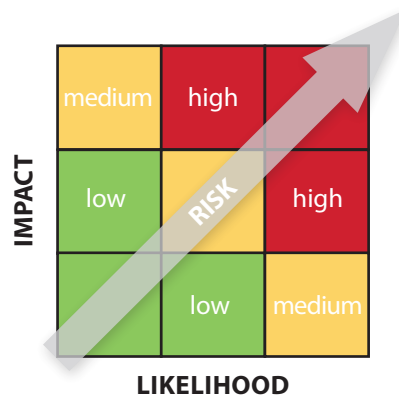
(how probable is it that these negative consequences will happen?)

**Impact** describes how severe the consequences will be. For example, the impact of a watermain break on the line servicing the hospital would have a larger impact than a break on the line servicing a spray park.

**Likelihood** describes how probable it is that an event will happen. Consider the following examples:

- A car that is 20 years old is more likely to fail than a car that is 5 years old.
- A car that receives regular maintenance is less likely to fail than a car that receives no maintenance.

The image below shows a simple way for considering risk as a product of impact and likelihood:



Type of Risk	What it Means	Examples
<b>Strategic risk</b>	The risk of an event occurring that impacts your ability to achieve your organizational goals.	<ul style="list-style-type: none"> <li>Hot, dry conditions put pressure on your ability to meet your water service demands</li> <li>A change in provincial or federal grant programs that reduces available grant funding to your municipality</li> </ul>
<b>Asset risk</b>	The risk of an asset failing to perform the way you need it to.	<ul style="list-style-type: none"> <li>A pipe bursts and interrupts the delivery of water to residents</li> <li>The furnace in the library breaks down in the winter, leading to the cancellation of programs for children</li> </ul>

## RISK TOLERANCE

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 may be 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 often 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 (e.g., 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.

## RISK MANAGEMENT

**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.

The identification and management of risks is the role of staff; however, council should be informed of significant asset and strategic risks and how these are being managed over time. Council will provide guidance on the level of risk that is acceptable to the municipality (risk tolerance) so that staff can identify and implement actions to reduce or manage risk.



### Glossary

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

**Impact** | How severe the consequences of an event will be.

**Likelihood** | How probable it is that an event will happen.

**Risk** | The relationship between the likelihood of an event happening and the consequences of that event.

**Risk management** | The iterative process of identifying and assessing risks, identifying and evaluating actions that can be taken to reduce risk, and implementing the appropriate actions to mitigate risk.

**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 a municipality's ability to achieve its overarching strategic goals (e.g., hot, dry conditions put pressure on the ability to provide water service).



### Resources

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

Canadian Infrastructure Report Card

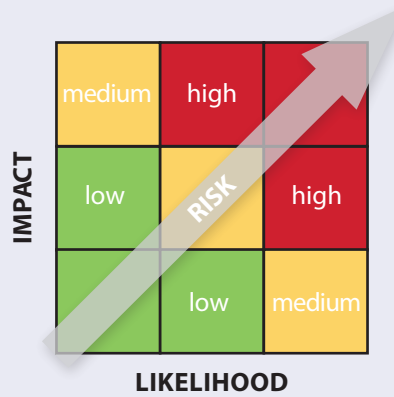


### Activity

Use the risk assessment matrix to rate the risk examples below as low, medium, or high risks. Provide justification for your ratings by explaining how you've rated the consequence and likelihood of the event.

#### STRATEGIC RISKS

**A municipality is relying on using provincial grant funds to do some critical road repairs. However, there is an upcoming provincial election and uncertainty over whether the grant program will be renewed.**




**Almost 40% of a municipality's assets were built between 1950-1955. Many of these assets are showing signs of reaching the end of their service life. The municipality has minimal operational reserves only.**

**ASSET RISKS**

**A residential sidewalk at the end of a cul-de-sac is in disrepair.**



**The sewage lagoon that serves the municipality is expected to reach capacity within a year.**



**LEARNING GOAL: Identify Municipal Risks to Service Delivery**



Asset management helps identify infrastructure and service delivery risks to your community. Research shows that infrastructure across Canada is aging and that many communities have delayed investments in asset maintenance and renewal, generally due to lack of budget and the need to prioritize other service issues in the community. This means that communities across the province and across the country are facing some very similar risks. Strategic risks that are common to many municipalities include:

- **Financial risks** – Overreliance on grant funding, insufficient capital reserves for infrastructure renewal, revenues that do not cover the full costs of service delivery.
- **Organizational risks** – Aging workforce combined with lack of succession planning, overreliance on undocumented knowledge of assets, siloes between departments results in poor information sharing.
- **Regulatory risks** – Changing regulations requiring infrastructure upgrades.
- **Aging infrastructure** – Periods of rapid growth and investment in the past can lead to periods in the future where much of a municipality’s infrastructure reaches the end of its service life at the same time.
- **Natural disaster and emergency risk** – Events such as forest fires or other emergencies have the potential to destroy or compromise infrastructure. Dealing with these situations often requires redirecting resources from other priorities, a major strategic risk for achieving community goals.

**SUMMARY OF PHYSICAL CONDITION OF INFRASTRUCTURE STUDIED, BY REPLACEMENT VALUE, EXTRAPOLATED TO THE ENTIRE COUNTRY**

Infrastructure	Extrapolated Replacement Value of All Assets	Assets in Very Poor and Poor Condition Replacement Value	Assets in Fair Physical Condition Replacement Value	Anticipated Condition Based on Reported Reinvestment Levels (Improving, Stable, Declining)
Potable Water	\$207 billion	\$25 billion (12%)	\$35 billion (17%)	Declining
Wastewater	\$234 billion	\$26 billion (11%)	\$56 billion (24%)	Declining
Stormwater	\$134 billion	\$10 billion (7%)	\$21 billion (16%)	Declining
Roads	\$330 billion	\$48 billion (15%)	\$75 billion (23%)	Declining
Bridges	\$50 billion	\$2 billion (4%)	\$11 billion (22%)	Declining
Buildings	\$70 billion	\$12 billion (17%)	\$20 billion (28%)	Declining
Sport & Recreation Facilities	\$51 billion	\$9 billion (18%)	\$14 billion (27%)	Declining
Transit	\$57 billion	\$9 billion (16%)	\$15 billion (27%)	Unavailable
<b>TOTAL</b>	<b>\$1.1 trillion</b>	<b>\$141 billion (12%)</b>	<b>\$247 billion (22%)</b>	
<b>Replacement Value per Household</b>	<b>\$80,000</b>	<b>\$10,000</b>	<b>\$18,000</b>	

Source: Canadian Infrastructure Report Card, 2016.



While these are common strategic risks, they may be ranked as high risk for some municipalities and low risk for others. This depends on a number of unique factors:

- **Age of the neighbourhood:** areas where most of the infrastructure was installed at around the same time may need to replace a significant amount of infrastructure at the same time
- **Materials and methods of construction:** some well designed and constructed assets can outlast poorly designed or constructed assets
- **Organizational structure and culture:** how well information is shared across the organization, whether or not decisions are appropriately informed and made in a systematic manner
- **Decisions and actions taken in the past:** whether infrastructure has been maintained properly, or funds have been saved for infrastructure renewal
- **Geographical factors:** for example, communities that can rely on gravity for drainage will have fewer mechanical assets that could fail and need maintenance and replacement
- **Land use factors:** for example, communities with lower density populations that are spread over large geographic areas will have higher costs per capita to maintain and replace infrastructure than higher density communities

Climate change is introducing new risks to infrastructure and municipal service delivery. For example, droughts can mean that existing sources of water may not be as reliable in the future; or existing drainage infrastructure is inundated by increasingly intense storms.

Identifying strategic risks in your municipality requires thinking through your community's objectives (for example, delivery of core services, sustainable services, meeting regulations, growth and development, attracting new businesses, etc.) and the events that might impair your ability to meet these objectives. To do this, you might also think through the main systems in your municipality that you rely on to meet these objectives (e.g., finances, people, assets, information, etc.) and whether there are risks related to these systems.

Once the events are identified, the consequence and likelihood should be estimated, and the resulting risk rated (e.g., high, medium, or low). This allows the municipality to see what the most significant risks are, identify where these risks exceed acceptable risk tolerance, and develop plans for mitigating risks.

Asset risks are related to specific assets and therefore are specific to each community. Identifying these requires completing a risk assessment. Asset risk assessments can be done by scanning asset systems (e.g., the water system, the recreation assets, etc.), identifying how failures could happen, and estimating the likelihood and consequence of these failures. Again, after identifying the likelihood and consequence of each risk, they can be ranked and plans for risk management can be made.

### **COUNCIL'S ROLE IN IDENTIFYING RISK**

It is the responsibility of staff, not council, to conduct an assessment of both strategic and asset risks. Council's responsibility is to be aware of what the significant risks to municipal service delivery are and how they are being managed. Council should also be aware of the overall risk management process, and how it informs decision-making during capital planning and budgeting.



#### **Resources**

[Canadian Infrastructure Report Card](#)

[Building Community Resilience Through Asset Management: A Handbook and Toolkit for Alberta Municipalities](#)

## Activity


Consider the following questions as a group:



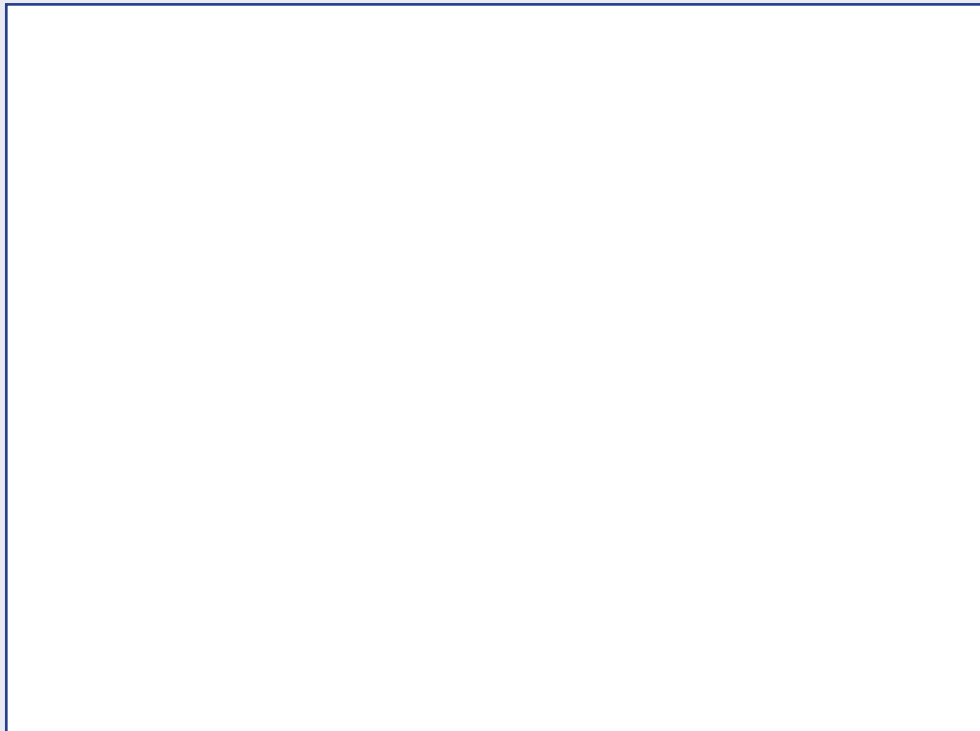
**What are some of the risks that your community may be facing that are common to municipalities in Alberta?**

**What are some risks that may be unique to your community?**

**What risks might climate change pose to your infrastructure and ability to deliver services?**



**Are there ways that it might be beneficial for your community to collaborate with neighbouring municipalities to address risks?**



# Module 2 – Identify How Asset Management Supports Municipal Risk Management

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

- Describe the basic process for risk management
- Define asset management
- Identify how asset management supports risk management
- Identify asset management tools that support risk management

## LEARNING GOAL: Describe the Basic Process for Risk Management

Risk management is not a one-time project with a defined date of completion. It is a process that requires revisiting and updating. As we describe the process, you will have an opportunity to think through risks to service delivery in your municipality.



### 1. Identify risks:

- a. What are our asset risks? Where are they?
- b. What are our strategic risks?

### 2. Assess risks:

- a. How severe is the impact of this event? How are we evaluating what high or low impact looks like?
- b. How likely is this event to happen?

3. Implement management strategies:

- a. What are some appropriate management strategies (this can range from tolerance to mitigation)?
- b. What is the preferred management strategy? How are we evaluating management strategies?

4. Monitor risks:

- a. Is the management strategy producing the desired result?
- b. Has the asset or strategic risk changed since we last evaluated?

5. Repeat.

- a. Why would you repeat the above steps? What would you be looking for?

An organization should have a policy that indicates the requirement for a risk management process. It is the role of staff to develop the risk management process, however, council should be aware that there is a process and be informed of the key risks and progress on managing these risks over time.



### Activity

Consider the scenarios below and answer the following questions as a group:

**SCENARIO 1: Your arena's ice cooling system is aging and has required more and more maintenance every year. Your operations staff estimate that it has two years of service life left.**

**What are the risks?**

**What would need to happen to assess the risks?**

**What kind of risk management strategies might be appropriate?**

**How would you pick the preferred risk management strategy?**

**Why do risks need to be monitored? How could risks be monitored?**

**SCENARIO 2: Your lagoon was built in 1970 and has limited remaining capacity.**

**What are the risks?**

**What would need to happen to assess the risks?**

**What kind of risk management strategies might be appropriate?**

**How would you pick the preferred risk management strategy?**

**Why do risks need to be monitored? How could risks be monitored?**

**SCENARIO 3: Your head of public works is approaching retirement, and they have a lot of knowledge about the history of your infrastructure that has not been documented.**

**What are the risks?**

**What would need to happen to assess the risks?**

**What kind of risk management strategies might be appropriate?**

**How would you pick the preferred risk management strategy?**

**Why do risks need to be monitored? How could risks be monitored?**





## LEARNING GOAL: Identify How Asset Management Supports Risk Management

Looking at asset management and risk management together, we can identify some parallels. Both are ongoing processes, with the end goal of sustainable service delivery.

Asset management is most effective when risk management is embedded.

### Connect Risk to Service Levels and Cost

Asset management supports risk management in a number of ways. At its core, asset management considers risk alongside cost and service level to help provide a more holistic view of service delivery than would be possible by focusing on any one of these areas in isolation. Considering risk, service, and cost allows communities to have more nuanced conversations about their assets and their long-term goals.

### Know What You Have and What You Need

Asset management practices help ensure that staff know what assets the municipality owns, where they are, what condition they are in, and what investments are needed to keep them working. Though there will always be unexpected events, having a good grasp of asset information can keep surprise costs to a minimum. For example, a community that has compiled asset information will be able to react quickly and effectively if they experience a water main break. They will know where the valves are to isolate the break, they will know the alignment of the water main, and they will know what size and material the main is when they work to repair it.

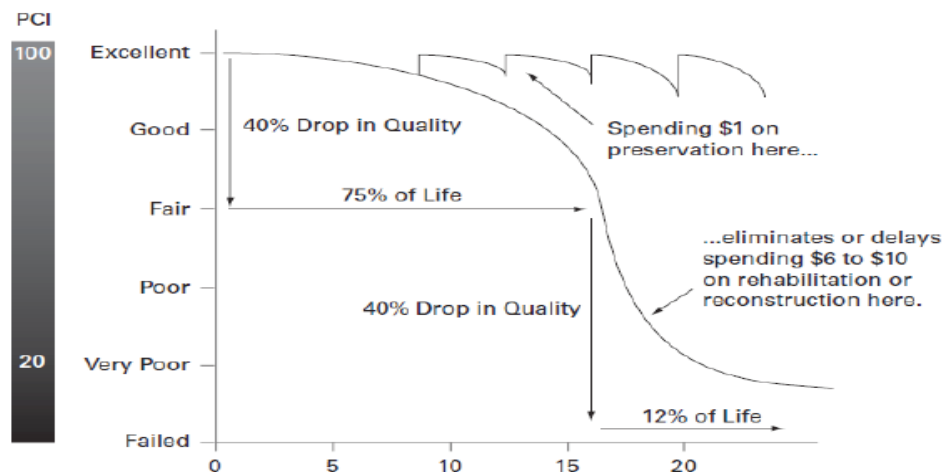
### Systematic Risk Management

Asset management is a process that requires re-evaluation and continuous improvement. Revisiting risk assessments over time allows for the monitoring of effectiveness of risk management strategies, as well as the re-assessment of risk in the case of change.

### Maximizing Lifecycle and Minimizing Costs

Asset management helps maximize asset lifecycles because there is a plan and process in place to maintain and replace assets as needed. There is significant evidence that good maintenance practices help reduce overall costs by extending the service life of assets.

For example, the regular maintenance of roads can extend the life of the roads almost indefinitely. Costs of performing this maintenance (like crack sealing) are several times lower than reconstructing the full roads as seen in the sample pavement deterioration curve below.





## Activity

Consider the following scenario:

**You are in a budgeting meeting, and a decision must be made between allocating money to the repair of a road or the repair of a water main, which are in two different locations. There is only enough funding to do one of the two activities.**

**Information about the water main: The water pipe is under an existing road that is in fair condition. The pipe is old but functional, and is the main water supply for the school.**

**Information about the road: The road is in a residential area. Milling and paving occurred in this area four years ago, with some additional pothole filling since then. However, council has received numerous complaints from residents about the number of potholes. A consultant hired by the municipality has determined that there are some drainage issues on the road that are making the pothole problem worse. Based on their recommendation, full rehabilitation of the road is required to completely fix the problem.**

**Residents are very angry about the state of the road. They think money was wasted on milling and paving. They have written letters to council and have published stories in the local newspaper. According to the complaints, one resident claims to have experienced damage to one of their vehicles due to the potholes.**

**What are the risks (strategic and asset risks)? What are the trade-offs? How should this community go about making a decision in this scenario?**



## **LEARNING GOAL: Identify Asset Management Tools That Support Risk Management**

### **ASSET MANAGEMENT POLICY**

An asset management policy outlines the organization's commitment and mandated requirements for asset management. It links to strategic objectives and is based on the organization's values and priorities. The policy is an important tool for aligning the direction of council and the activities of staff.

Specific details on risk management will typically not be included in the asset management policy – the policy is higher-level. However, by outlining objectives and principles, the policy will set the direction on how risk is integrated into asset management considerations. The asset management policy may also state the municipality's commitment to implementing a risk management process and considering risk in planning and prioritization.

Municipalities often have risk management policies; however, these are usually focused on corporate risk management rather than risks to service delivery. Both types of risk are important to manage and be considered at a policy level.

### **ASSET MANAGEMENT STRATEGY**

An asset management strategy is primarily for staff use and endorsed by council. It outlines the framework and approach for implementing the asset management policy. Integrating risk considerations into the asset management strategy sets the direction for staff in implementing the asset management policy. The asset management strategy may outline the municipality's process for risk management.

### **ASSET MANAGEMENT PLANS**

An asset management plan will include comprehensive information about assets. Knowing what assets you have and what condition they're in helps you minimize unexpected asset failure and shocks to your budget.

The plan will outline asset management practices and processes. Having good practices and processes in place means you're always thinking ahead about infrastructure needs and where investments will focus.

An asset management plan identifies asset and strategic risks. The planning process will consider how to best address these risks, including investments that need to be made, or changes to operations and maintenance.

The plan will articulate potential consequences of not following the Plan – which will shed light on the risks the community is facing.

The plan will help to inform strategic planning, and capital planning, operations and maintenance planning, and budgeting.



### **Resources**

[Building Community Resilience Through Asset Management: A Handbook and Toolkit for Alberta Municipalities](#)



### Activity

Asset management tools that support risk management also connect to other municipal documents and plans. See the diagram below for how these tools and plans fit together. In small groups, answer the questions below.



*Connections Between Asset Management Tools and Other Documents*

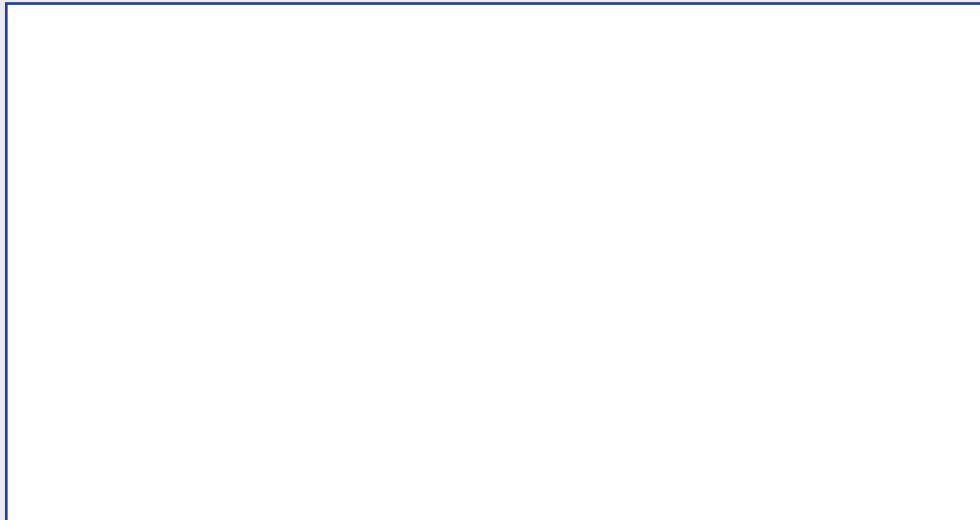
**What are some of the ways that risk and risk management would be considered through the following tools:**

#### 1. Municipal Development Plan

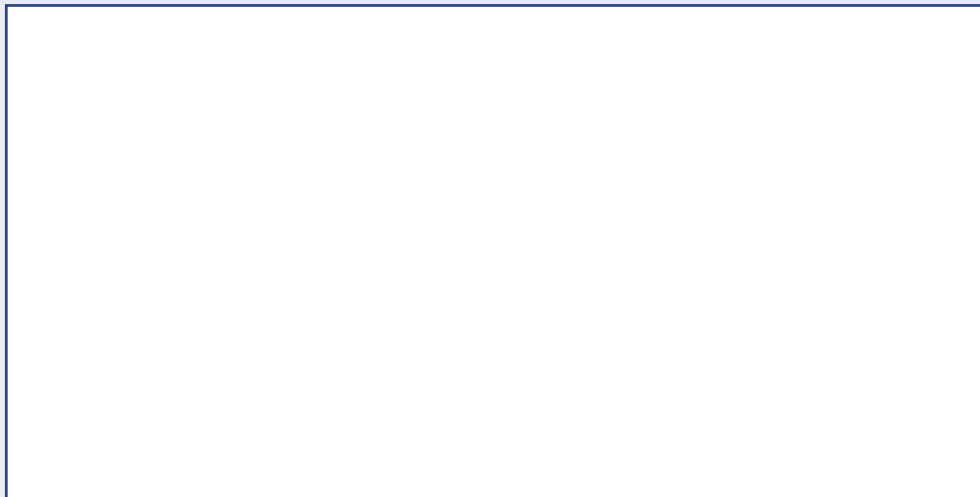
## 2. Organizational Strategic Plan



## 3. Capital Plan



## 4. Budget



# Module 3 – Identify Council’s Role in Risk Management

---

## **LEARNING GOAL: Describe Council’s Role in the Risk Management Process**



Council plays an important role in setting the tone for risk management and providing leadership that prioritizes risk management within asset management. This is often done through policy, but it is also important to consider risk in day-to-day decision-making.

Council’s primary role is to make decisions on what level of risk is acceptable to the municipality, or in other words, establishing risk tolerance. Risk tolerance can and should be established for both strategic risks and asset risks. Risk tolerance should be informed by an understanding of the magnitude of the risk (e.g. the ranking using the risk matrix), how the risk will change over time without intervention, and the cost and level of effort associated with managing the risk. Staff will play an important role in providing information to help council determine risk tolerance. Risk tolerance is typically determined and communicated on a situational basis, when reviewing significant risks to the municipality. This is because the level of risk tolerance depends on the context of the municipality, its resources, its priorities, and the nature of the risk itself.

For example, a municipality may discover that the ductile iron water pipes installed in the 1970s are failing due to corrosion issues. There have been several breaks already, leading to multiple water outages. The breaks will only get worse over time. The cost to replace all of these water mains is far beyond what the municipality can afford, so council decides that they are willing to tolerate breaks on the smaller mains that provide service to areas that either serve a small number of houses, or where potential breaks could be isolated without significant outages. The selected strategy is to proactively replace selected high-risk mains each year, and reactively replace the lower-risk mains.

Council provides direction to staff to initiate a risk management process for assets, if one is not in place already. Council can support staff by making resources available for risk management, as well as supporting staff time on risk management and additional training, if required. Council can endorse systems and processes that manage risk and ensure they are in place. This may be specific risk management practices, but also master planning, financial planning, and other processes.

During the day-to-day work of local government, the mayor/reeve and councillors support risk management by asking for information about risk to help inform decision-making.

Council can initiate policies to help manage risks.



### Activity

Work in small groups to answer the questions below:

**What are some asset and strategic risks in your community (refer to earlier exercises)?**

**Asset risks**

**Strategic risks**

**What is your risk tolerance for these risks? What process did you use to identify your risk tolerance? What information was available? What information would you have liked to have?**

**What are some potential roles for you as elected officials in the following areas:**

**Providing leadership to staff on risk management?**



**Supporting risk management processes?**



**Conducting day-to-day council business?**





# You've Made It!

---

Here you are at the end of the course. Thank you for joining us for what was hopefully a day of learning, good conversation, and shared insight among you and your colleagues. Remember, today is just a start. Together, we've laid the foundation, but we hope that you'll continue to learn, ask questions, and participate in other opportunities to expand your knowledge of asset management. Throughout this book, and at the back, you can find the glossary and a list of resources if you ever need to reference something you learned in this course.

## ASSET MANAGEMENT MINDSET

If you got anything out of today, we hope that it was an understanding of how an asset management mindset can support you in your role as an elected official and steward of community well-being. If you're ever stuck, start by asking yourself some questions:

- Do we have the information we need to make a decision?
- Have trade-offs between cost, risk, and service been considered?
- Are we focusing on service delivery?
- What are the long-term implications?
- Have all the relevant disciplines been properly engaged in this decision (e.g., planning, engineering, public works, finance, etc.)?
- Are we thinking about both short- and long-term needs?

## CONTINUING TO LEARN

This course is part of a series of courses for elected officials offered by AUMA and RMA. This series of courses goes deeper into specific topics related to asset management and include the following five courses:

- *Boring Until It's Broken: Engaging the Public in Infrastructure Asset Management*
- *Risk: How Asset Management Can Help*
- *"I want a Five-Star Experience for a Two-Star Price: Setting and Communicating Levels of Service*
- *It's Got Teeth but Doesn't Bite: Developing and Implementing an Effective Asset Management Policy*
- *Weathering the Storm: Asset Management and Climate Change*

Please contact AUMA and RMA to find out more about these courses.

# Glossary

---

**Asset** | Also known as a tangible capital asset (TCA), a physical component of a system that enables a service, or services, to be provided.

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

**Impact** | How severe the consequences of an event will be.

**Likelihood** | How probable it is that an event will happen.

**Risk** | The relationship between the likelihood of an event happening and the consequences of that event.

**Risk management** | The iterative process of identifying and assessing risks, identifying and evaluating actions that can be taken to reduce risk, and implementing the appropriate actions to mitigate risk.

**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 a municipality's ability to achieve its overarching strategic goals (e.g., hot, dry conditions put pressure on the 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.

# Resources

---

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

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

Canadian Infrastructure Report Card

<http://www.canadainfrastructure.ca/en/>

