
# CONSIDERING CLIMATE CHANGE IN RISK MANAGEMENT

Our communities are becoming increasingly vulnerable from the hazards posed by a changing climate. The ways in which a community is vulnerable depend on factors such as the services provided, local industry, population, historical planning decisions, community health, area, and geographic location. Municipalities provide a wide variety of services that support the people, the future, and the environmental health of communities. New hazards as a result of changes to our climate have begun impacting the way municipalities deliver services.

**So, how can we improve your community's resilience?** Consider integrating climate change with asset management, through a risk assessment process.

Hazards are physical events of phenomenon that may have a negative impact, such as habitat damage, injury or loss of life, economic disruption. Climate-related hazards include, but are not limited to:

Flooding
Sea level Rise
Coastal Erosion

Extreme Temp
Permafrost Deg
Hailstorms

Wildfire
Drought
High Winds

## Benefits of climate integration

Communities become more resilient by assessing and managing risk with a climate change lens. Benefits include:

- Ensuring that the most critical services in the community will be available when needed in the future;
- Prioritizing limited resources (staff, time, money) to achieve the highest value at the lowest cost;
- Making decisions grounded in evidence; and,
- Enabling proactive versus reactive decisions over the lifecycle of assets.

**It's a balancing act**

One way that you can increase your community's resilience to climate change is by documenting and managing infrastructure related risks. This needs to be balanced with levels of service, costs, and time.


## What is risk?

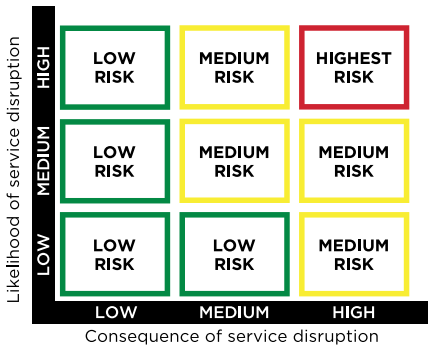
Risk is the potential for undesirable outcomes resulting from an incident, event, or occurrence. It is commonly evaluated as a combination of the consequence and likelihood of an event, such as a service disruption or asset failure.

Assessing climate-related risks to infrastructure services involves understanding how natural and built systems are affected when exposed to hazards, where systems are most vulnerable, and the associated impacts or consequences.[1]

1 Envision, *Sustainable Infrastructure Framework Guidance Manual 3rd edition* (Washington DC: Institute for Sustainable Infrastructure, 2019), 170-171.

Risk is one of the most complex parts of asset management. Tackling climate change can also be an intricate process. When layered together, it is even more important to take small, measured steps forward in alignment with the size and capacity of your organization.

Climate-related risks are different than other sources of risk, with outcomes that are often irreversible. Time horizons are longer and affect a broader range of human and earth systems. Future climate may differ significantly from previous experience making it more difficult to predict and plan for, leaving infrastructure and communities more vulnerable.




## Where to begin

Your municipality can integrate climate change into its asset management practices by utilizing FCM's simple four-step framework: identification, assessment, prioritization and management. When approaching this framework from a risk perspective, consider the process and questions below.

### Identification

The **identification** phase involves confirming the existing services the municipality provides, gathering regional and local climate change data, and identifying potential climate change hazards. Consider:

- What services does the municipality provide, and what assets are required to deliver the services?
- What climate projections are available for your community, and what are their implications for infrastructure related risks?
- Which climate change hazards will likely impact your infrastructure services?

### Assessment

The **assessment** phase involves determining the areas where the community is the most vulnerable due to climate change, looking specifically at how this could compromise a municipality's ability to provide services. Consider:

- What are the risks (consequence x likelihood)? Consider people affected, property, and services.
- What existing controls are in place to reduce risks?
- How could climate change impact the standards that inform infrastructure design in the future?

### Prioritization

The **prioritization** phase explores potential strategies to mitigate or adapt to climate change risks. Consider:

- How can climate change risks be managed? Are there ways to be more proactive in accomplishing this?
- What is the preferred, or optimum strategy, for addressing the highest risks within each service area?

### Management

The **management** phase involves incorporating climate change strategies in infrastructure plans, programs and budgets, and monitoring progress over time. Consider:

- How do you move from planning into action?
- How are you doing? What should you be doing differently?

To learn more about this framework, refer to FCM's *Guide for Integrating Climate Change Considerations into Asset Management Practice* and *Why Use Asset Management to Build Climate Resilience?* video

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