Transport Canada's Transportation Assets Risk Assessment (TARA) initiative

Michael Daudlin, Policy/Economic Officer

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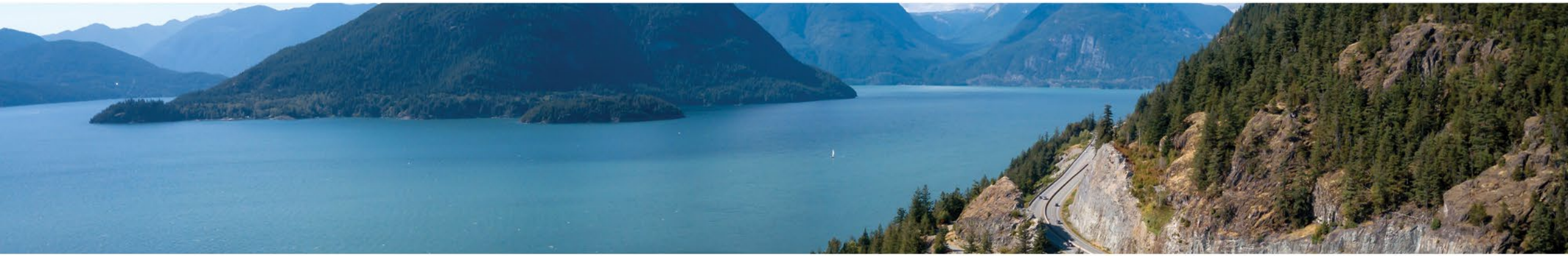


PURPOSE

1. **Introduce the Transportation Assets Risk Assessment (TARA) initiative**

2. **Provide an overview of lessons learned in conducting climate risk assessments of transportation assets**

3. **Summarize key feedback from TARA partners and stakeholders**

Q: How can climate risk assessments be made actionable and relevant for adaptation decision-making?

The Changing Climate

Impacts associated with climate change and extreme weather are **disrupting** the movement of both freight and people, and **increasing costs** within the transportation sector. These impacts are projected to **intensify** in the future.

TC's **Climate Change Adaptation and Planning** team supports efforts to help the transportation sector **adapt and build resiliency** to this changing climate.

The TARA initiative

OBJECTIVE

- Aims to better understand climate risks to federally-owned transportation infrastructure and potential adaptation solutions that could be employed.

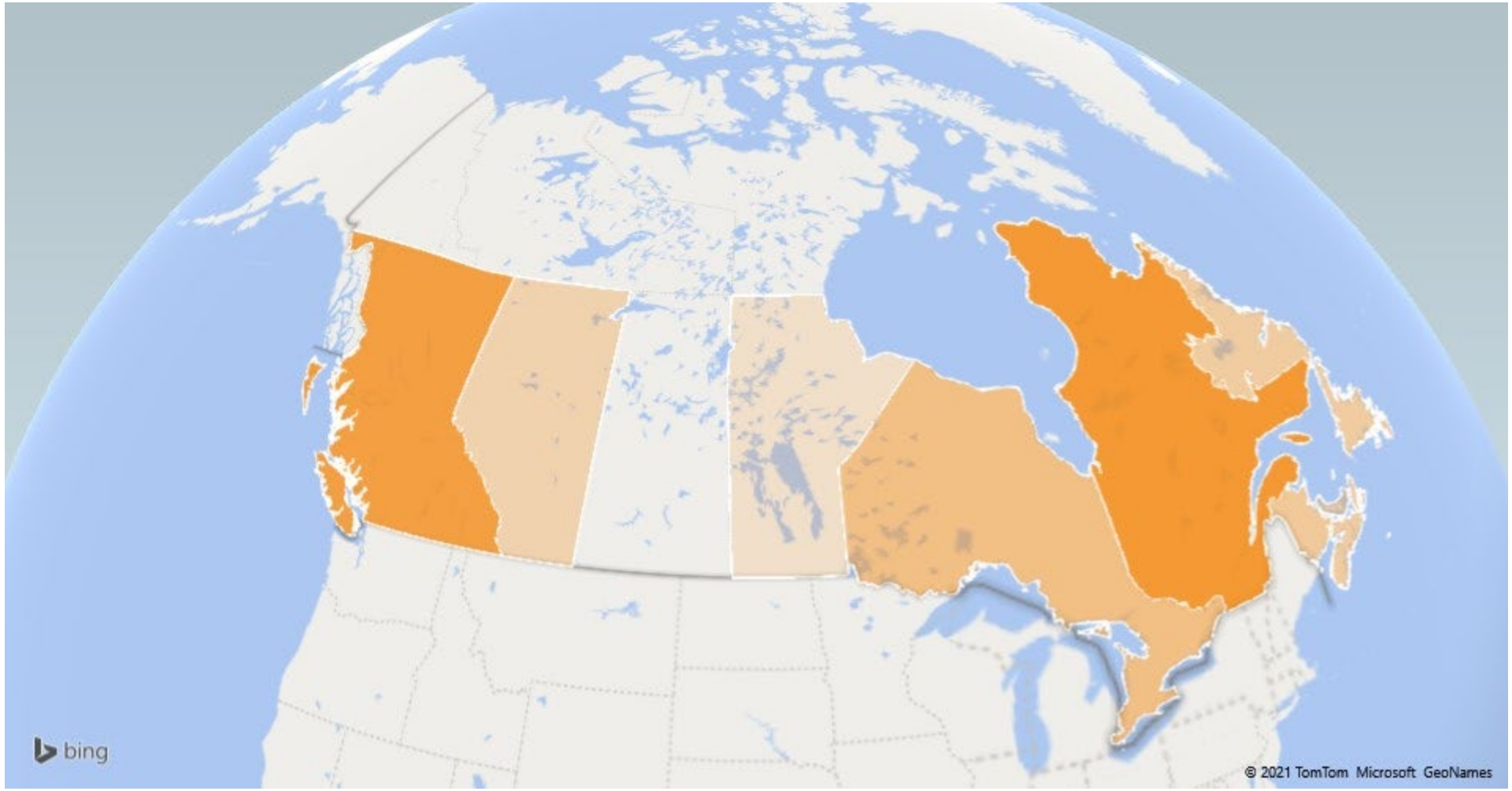
FUNDING

- Established 2017
- $16.35M over five years (2017-2022)

ELIGIBLE PROJECTS

- Full climate risk assessment
- Subcomponents of a climate risk assessment
- Research projects

TARA projects to date

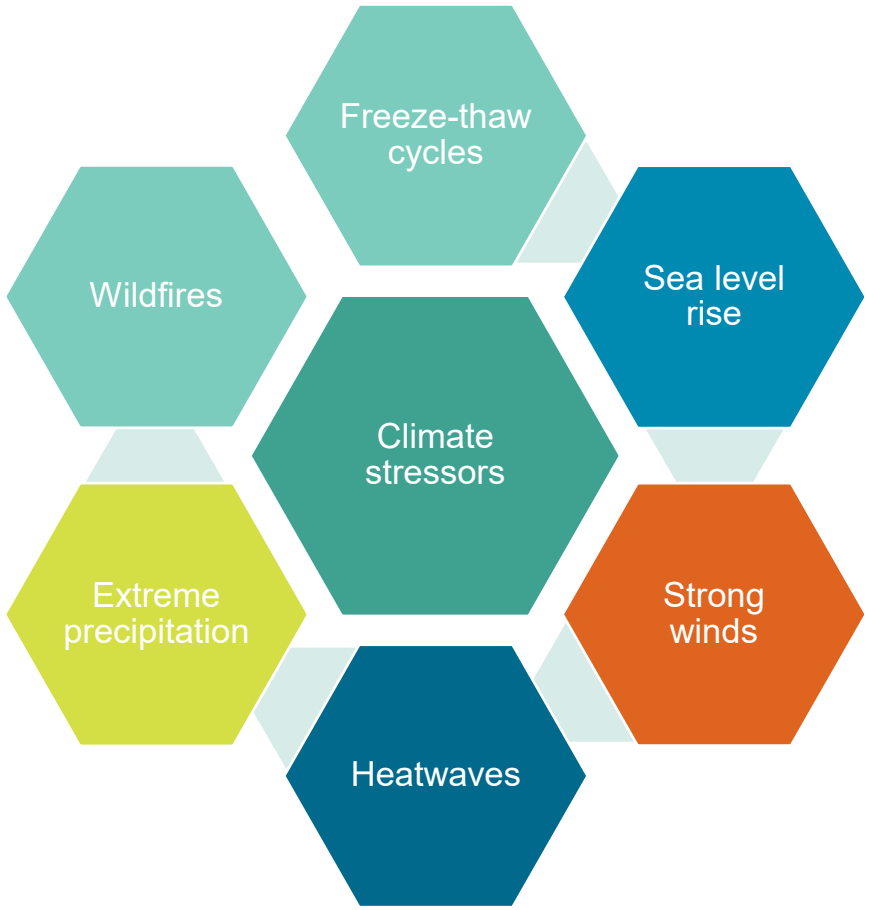


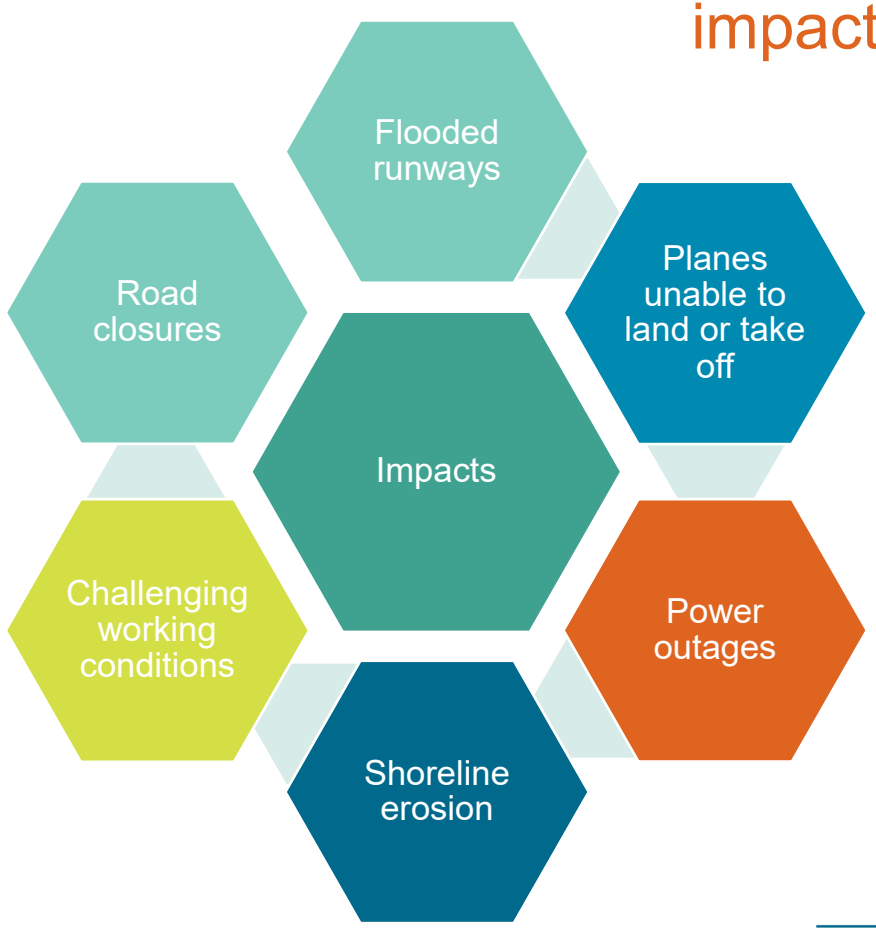
Cross-Canada reach

Multimodal scope:
Air
Marine
Surface

Why assess climate risk?

Because the effects of climate change are already being felt by transport assets and impacting operations





Considerations for Actionable Results

Project teams (internal or external) are best positioned to succeed with meaningful direction.

Key decisions before starting:

- Expected outcomes?
- Preferred tools?
- Considered inputs?

Expected Outcomes

Expectation	*Reality*
• Decision-making tools • Capital recommendations • Engineering solutions • Simple integration with existing plans	• Better understanding of your vulnerability • Recommendations for further analysis and planning

Choosing a tool/framework

Tools and frameworks have different emphases

- Context
- Identification
- Analysis
- Evaluation
- Treatment
- Monitoring
- Plan

Tools should be matched to asset needs and capacity

Example: PIEVC

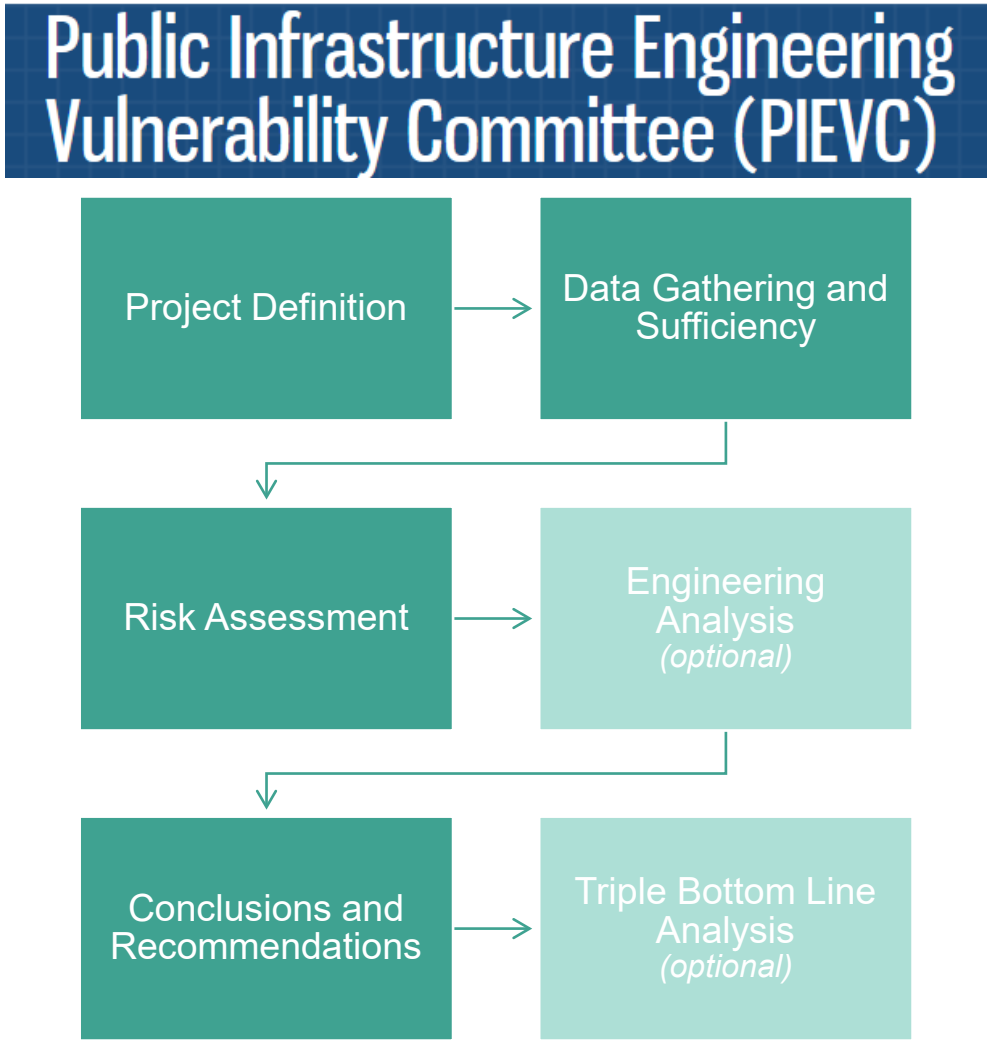
Prominent Canadian climate risk assessment framework

- Flexibility
- Body of knowledge / expertise

For effective implementation:

- Contextualize in broader adaptation cycle
- Anticipate recommendation structure

CLIMATE RISK INSTITUTE

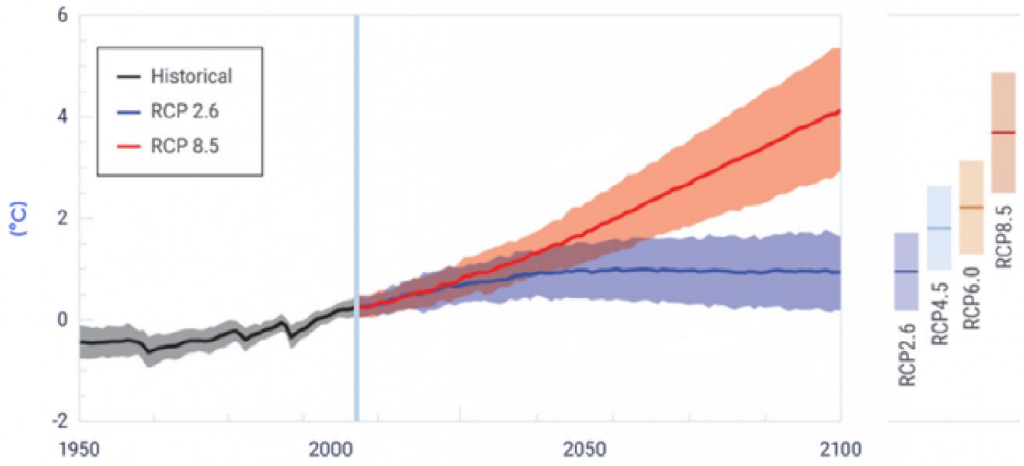


Other prominent tools

ACROS	VAAF	Custom Tool Development
A tool to help airports identify vulnerabilities and potential mitigation strategies based on location-specific climate parameters	A general vulnerability assessment framework with built-in engineering assessment and cyclical review pattern	Custom methodologies and frameworks can be developed that work for a given asset or organization

Selecting inputs

- Definition of scope, considering:
  - Interdependency of assets and risks
  - Sensitivity to weather events
- Choosing appropriate RCP
- Understanding of:
  - on-the-ground impacts & current issues
  - cumulative impacts



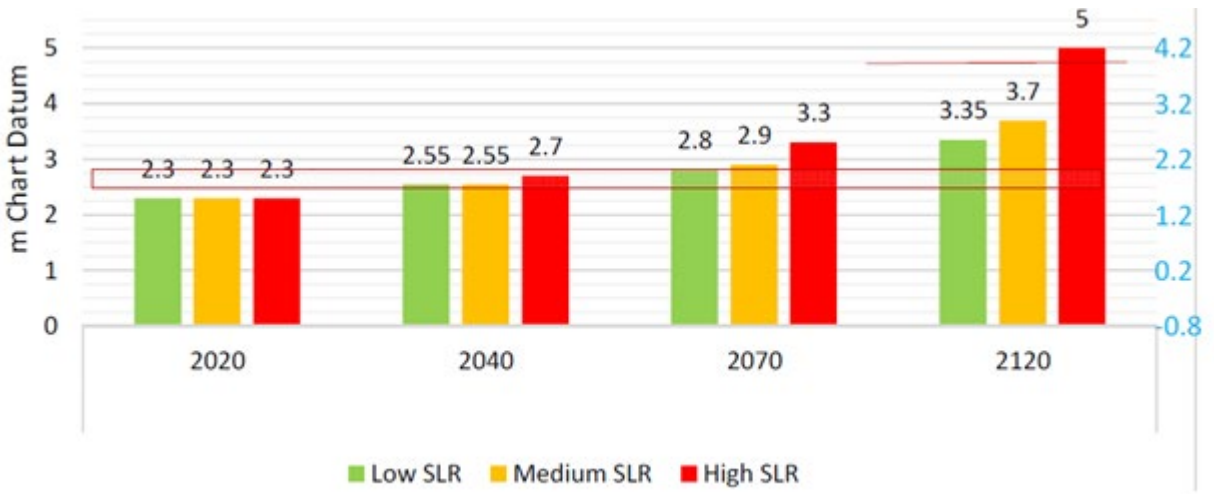
Informing Decisions with Climate Risk

To help make decisions about taking action:

- **Mapping Risk Over Time**
- **Asset Life Cycle**
- **Confidence Levels**

And identify acceptable:

- **Level of Service**
- **Risk Tolerance**



Stakeholder feedback

Bilateral

- Direct engagement with TARA project partners

Multilateral

- Engagement through workshops, network meetings, and webinars

Research/SME

- Engagement with researchers and experts in relevant fields

Challenges

- Internal capacity and resources
- Adaptation business case
- Standards and tools
- Moving beyond risk assessment
- Assets working in isolation

Solutions

- **Governance, leadership, and accountability**
  - Strengthening business case for adaptation
  - Allocating resources to adaptation initiatives
  - Sharing knowledge and frameworks for communicating risk

SUMMARY

1. **The TARA initiative provides support to federal transportation assets to assess their climate risk.**

2. **The delivery of TARA projects has provided lessons-learned on producing decision-relevant climate risk assessments.**

3. **Stakeholder engagement has identified shared challenges and solutions among TARA partners.**

Michael Daudlin
Policy/Economic Officer, Climate Change Adaptation and Planning
michael.daudlin@tc.gc.ca