



Lessons Learned on Assessing Climate Risk

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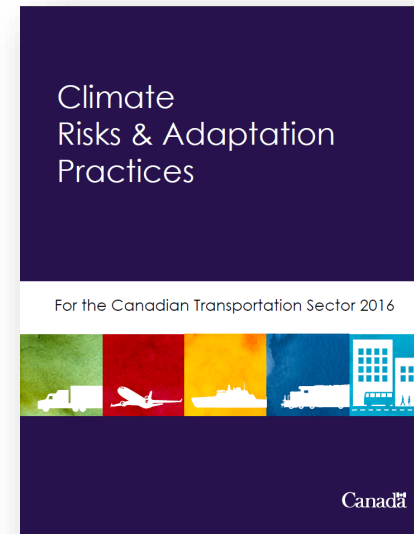


PURPOSE

- 1 | Provide overview of Transport Canada's adaptation work
- 2 | Introduce the Transportation Assets Risk Assessment (TARA) initiative
- 3 | Highlight lessons learned and recommended practices

TC's Role in Adaptation

- Support adaptation research, analysis and policy development
 - Knowledge Broker
 - Building adaptive capacity and mainstreaming
- Provide funding support through two key initiatives:
 - **Northern Transportation Adaptation Initiative**
 - **Transportation Assets Risk Assessment initiative**
- Convening, engagement and collaboration – domestic and international



(Illustration created by www.soaringtortoise.ca)

About TARA




- **\$16.35M** over five years
- To better understand **climate risks**
- Limited to **federally-owned and/or managed transportation assets**
- Three **eligible activities**:

Full climate risk
assessment

Sub-components
of a climate risk
assessment

Climate risk
assessment
research

TARA projects

Mode	Projects	
	Air	14 assets in 7 provinces
	Marine	15 assets in 6 provinces
	Surface	6 assets in 4 provinces

Why assess climate risk?

Because the effects of climate change are already being felt by Canadian transport assets



Starting a climate risk assessment

- Most projects use a consultant
- But – it's not a plug-and-play process
- Your decisions before starting:
 - What tool do you use?
 - What inputs do you select?
 - What do you want to get out of it?

What tool to use?



U.S. DOT Vulnerability Assessment Scoring Tool



Public Infrastructure Engineering
Vulnerability Committee (PIEVC)



ACRP

Fisheries and Oceans Canada

A National Coastal Infrastructure
Vulnerability Index (CIVI)

C · C · H · I · P



How to select a tool



Common flow, but different emphases:

- **Assessing criticality**
- **Assessing vulnerability**
- **Assessing interdependencies**
- **Assessing engineering resilience**

Which is right for you?

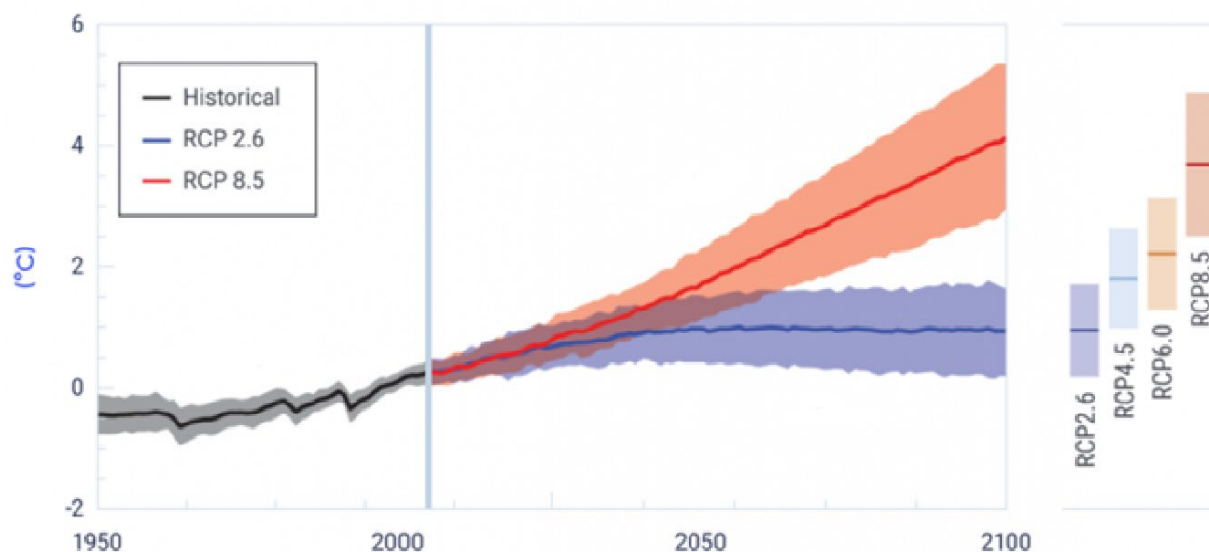
Review of PIEVC Climate Risk Assessments

- Use of publicly available PIEVC climate risk assessment reports
- Focus on the Canadian transportation system
- Establish an understanding of common recommendations

Type of recommendation	Development/update of policies and previous evaluations	Studies and instrumentation	Monitoring	Management and operational changes	Engagement to gather additional information and/or further apply assessment results	Engineering solutions	Vulnerability ranking and criticality parameters
Number of recommendations	35	33	24	6	5	5	2

Conditions for success

- Definition of scope, considering:
 - Interdependency of assets and risks
 - Sensitivity to weather events
- Choosing appropriate RCP



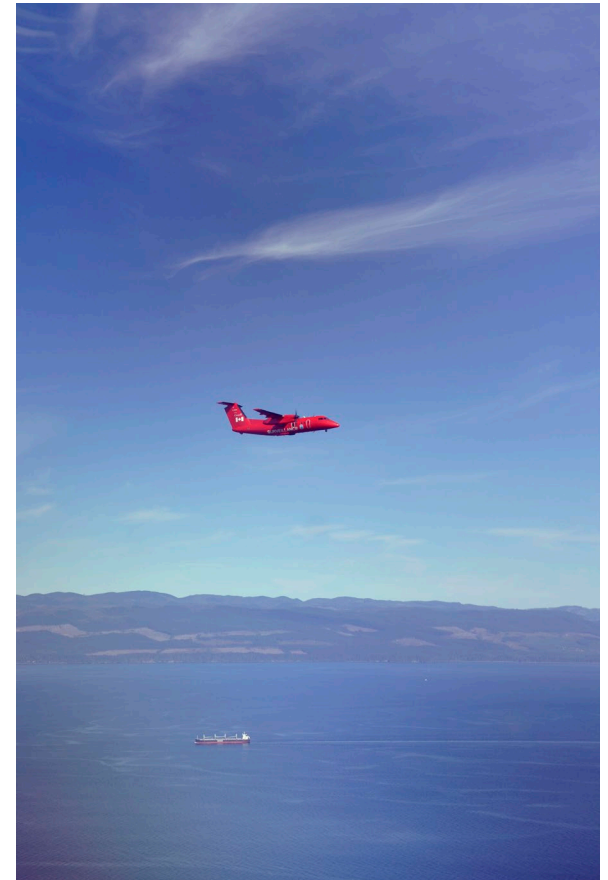
Conditions for success

Operator involvement

- impact analysis is anecdotally based

Need understanding of:

- on-the-ground impacts & current issues
- cumulative impacts



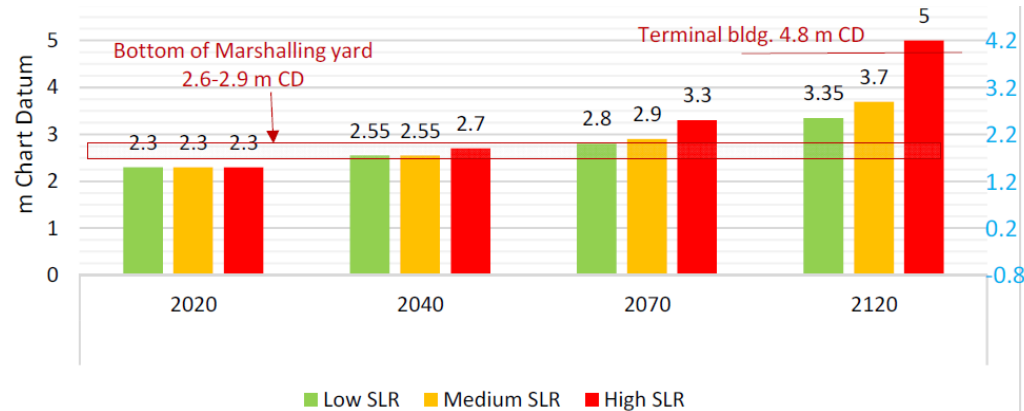
What do you want to get out of it?

<i>Expectation</i>	<i>Reality</i>
<ul style="list-style-type: none">• Decision-making tools• Capital recommendations• Engineering solutions• Simple integration with existing plans	<ul style="list-style-type: none">• Better understanding of your vulnerability• Recommendations for further analysis and planning

How do you get closer to what you want?

When approaching your climate risk assessment, consider including and analysis of:

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



In discussions with management, consider:

- Level of Service
- Risk Tolerance

KEY TAKEAWAYS

- Many decisions to be made
- Involve the operator!
- Final product can be strengthened

Questions / Comments?

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