

RESILIENT INFRASTRUCTURE SYSTEMS IN ONTARIO: OCC AND RYERSON UNIVERSITY WORKSHOP

# Climate Change Risk and Resilience Assessments

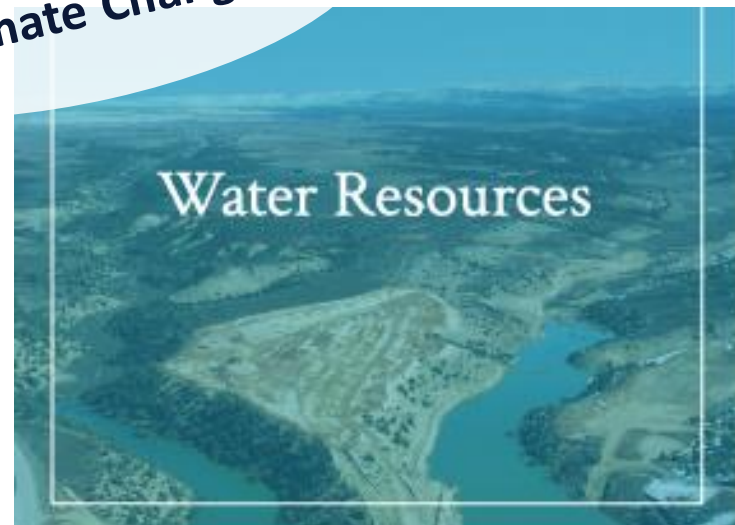
Lessons Learned from Applying Different Approaches in Ontario

# Savanta – GEI Consultants

- Environmental and Engineering consulting firm with 40 offices across North America
- **Our objective:** To deliver meaningful professional services that improve our world's natural and built environment.



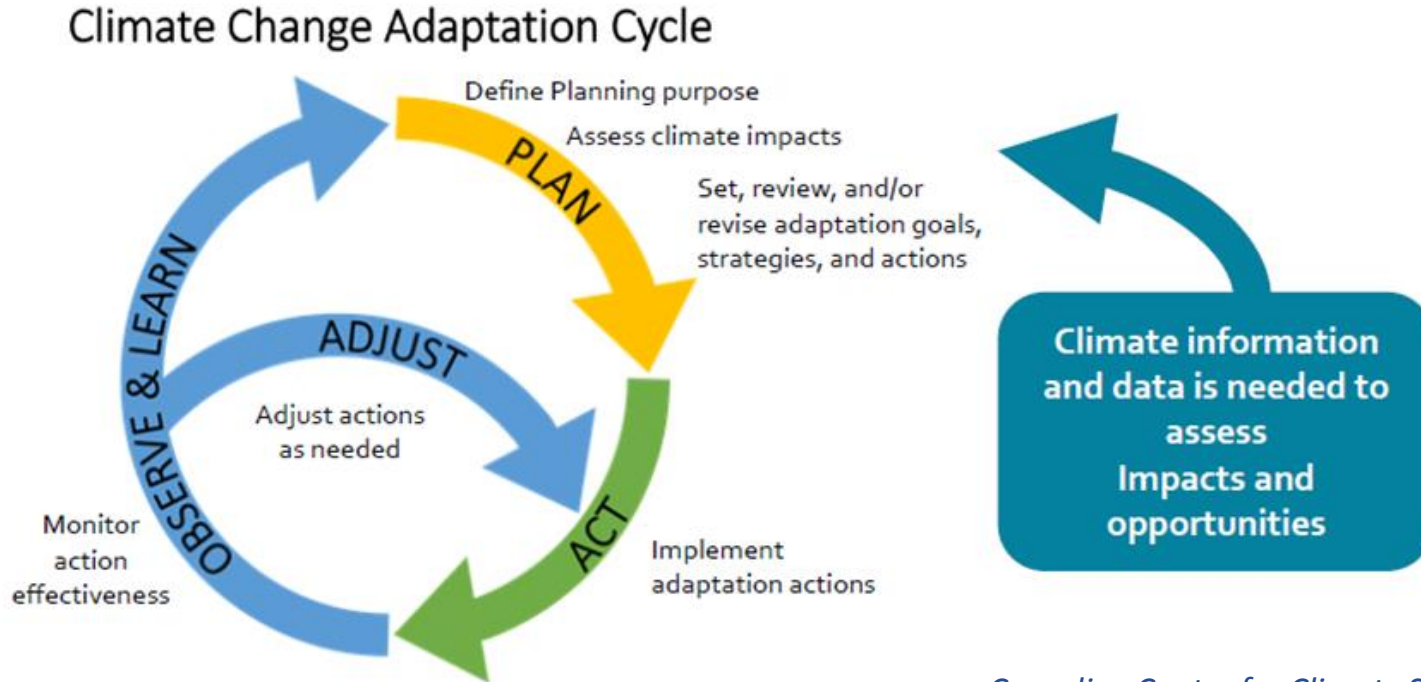
Climate Change



# Presentation Outline

- Why are risk and resilience assessments still important?
  - Fundamentals
  - Importance of Scale
- A Tale of Two Risk Assessments
- Top 3 Suggestions for Increasing the Value and Practicality of Assessments
- Putting it all Together – from Risk to Resilience

# Why do we need climate risk assessments?



*Canadian Centre for Climate Services, 2019*

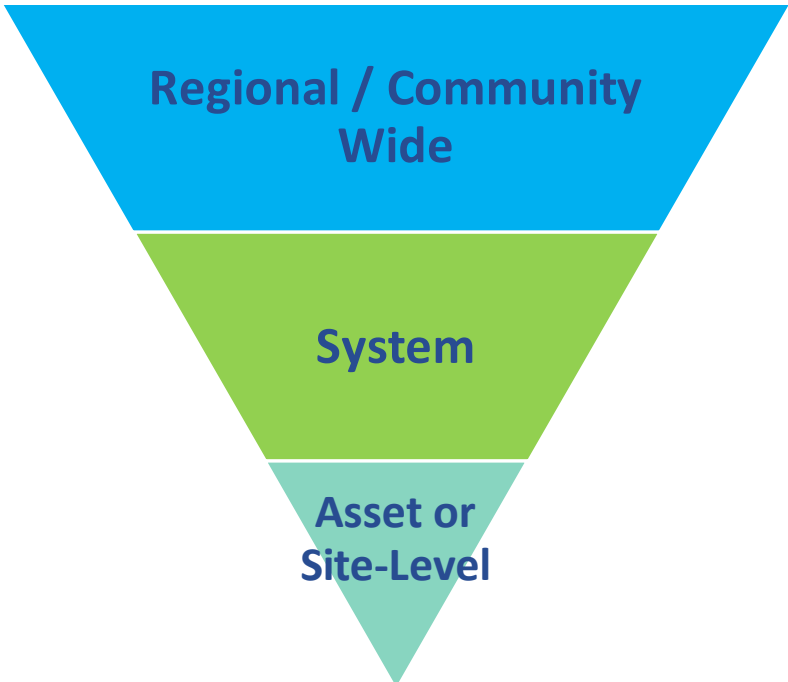
# Fundamentals of Climate Risk Assessments

- **Scoping:** Setting the context, establishing a team and assessment objectives.
- **Set-up:** Characterizing the system and hazards
- **Vulnerability & Risk Analysis:** Estimating, characterizing and comparing the vulnerabilities, the likelihoods of hazards occurring and consequences associated with them.
- **Risk Treatment:** Determining adaptation options, evaluating and selecting alternatives to manage risk or strategies to increase resilience.



# Scale Matters – and is dictated, in part, by Framework Selection

Scale of Analysis



Examples

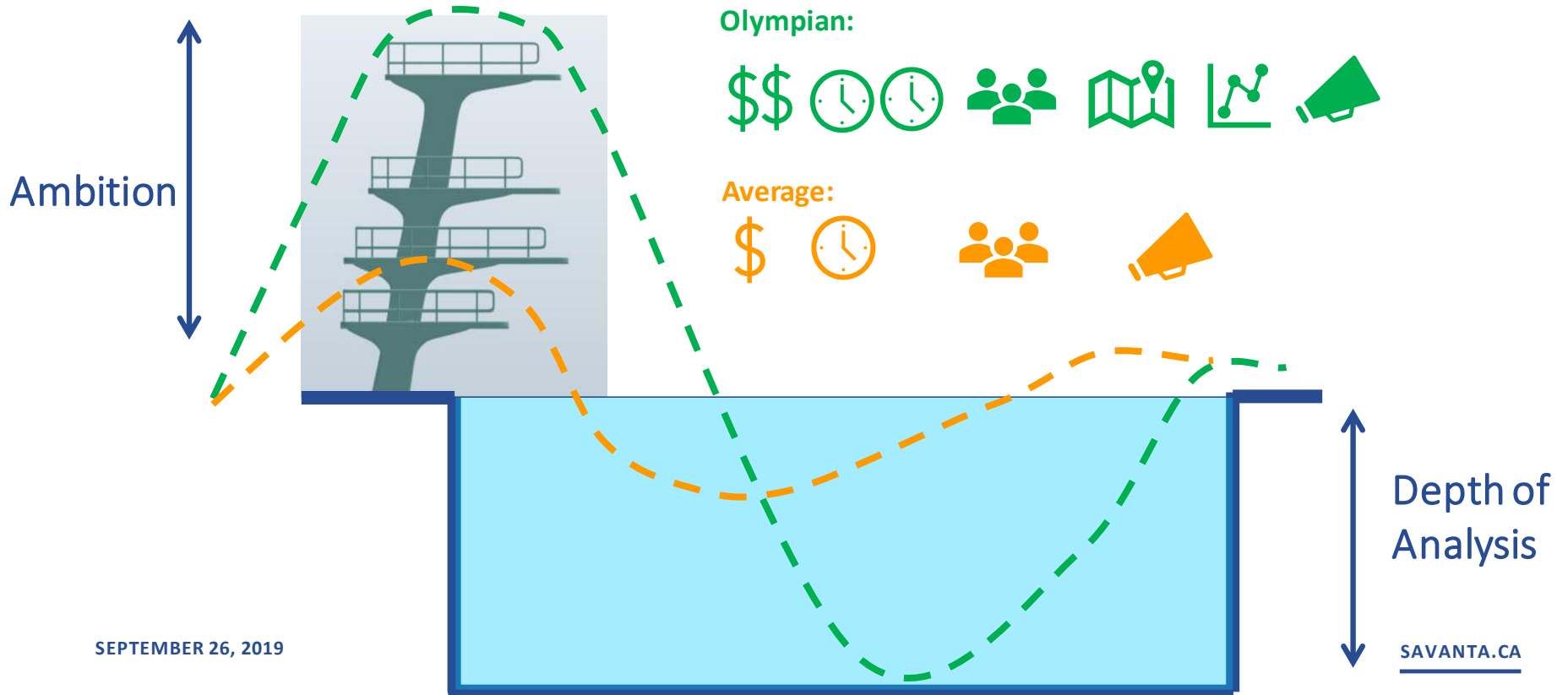
**I.C.L.E.I.**  
Local Governments for Sustainability



City of Toronto (COT) Tool



# A Tale of Two Climate Risk Assessments



# A Tale of Two Climate Risk Assessments – Where did they get to?





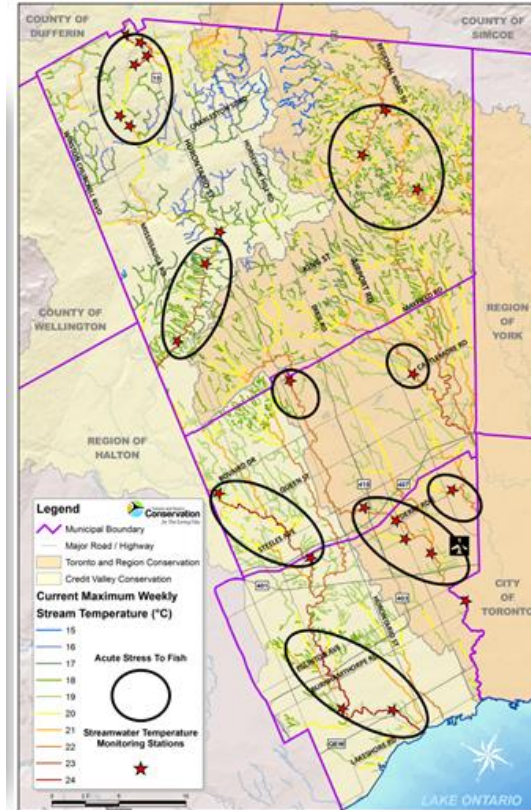
# Deep Dive Analysis can also produce...

Spatial data, and the tools to guide interventions across a portfolio or system



## Balancing Act:

While less detailed assessments save you time and resources upfront, they often end up leading to a deeper dive to set priorities and determine resilient actions – particularly for infrastructure design





# Top 3 Suggestions for Increasing the Value and Practicality of Risk and Resilience Assessments

# 1. Begin with the End in Mind

- What specifically will you use the information for?
- What level of detail is needed to enable actions?
- Envision the ideal outputs from your process - do not simply produce a report

# 2. Equip yourself with the Right Tools

- Avoid “going down the rabbit hole”
- Select an appropriate framework or process that enables your scale of assessment
- Don’t be afraid to incorporate non-traditional concepts and factors that are important in resilience - social and demographic factors

# 3. Enable Implementation of the Results

- Even at a high level, consider what it will take to implement your results
- Avoid unclear risks, opportunities or resilience building actions
- Identify lead/support roles, timing and costs if possible





How do we go from Risk to Resilience?

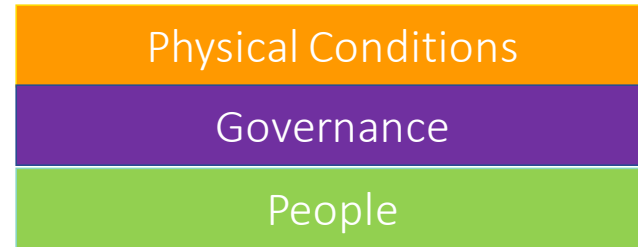
# What does this look like in Theory?

↓ Vulnerability  
and Risk

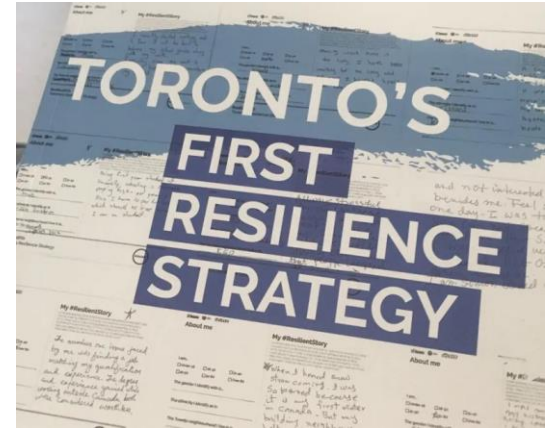
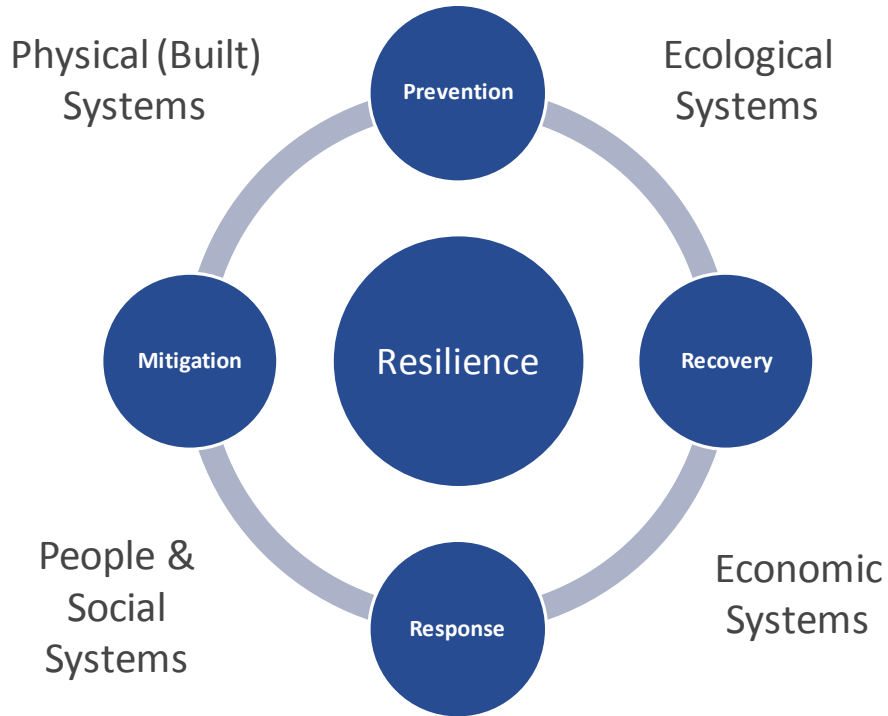
The attributes of a System can make it more or less resilient to climate events, including change.



↑ Resilience



# Resilience is broader than Climate Change



***“The Capacity of Individuals, Communities, Institutions and Systems to survive, adapt, and thrive in the face of chronic stresses and acute shocks...”***

# How Communities have used Climate Risk Information to start building Resilience





# Thank you

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