



Climate Change Impacts and Adaptation in the Mining Sector

Sean Capstick, Golder Associates

Adaptation Canada 2016



Sudbury Integrated Nickel Operations



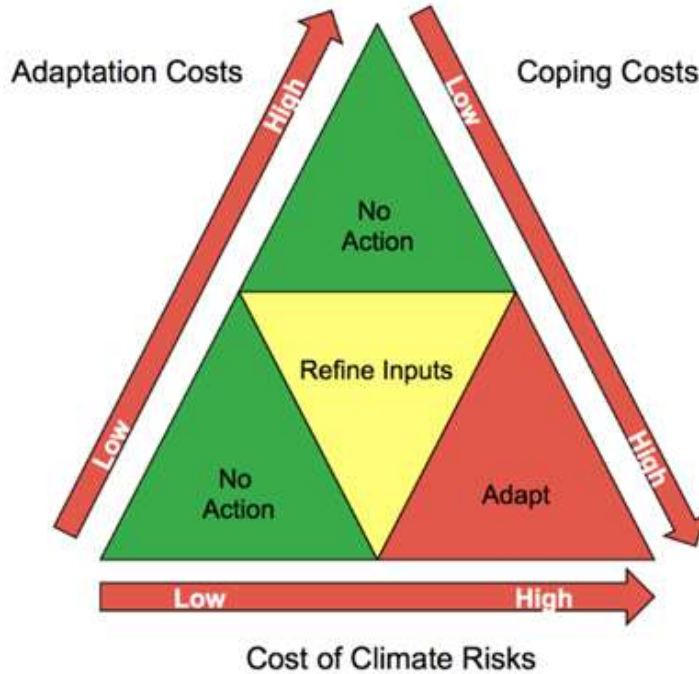


Climate Vulnerability Study

- Understand weather variability and long term climate change impacts on facilities
- Identify potential risks and how to adapt
- Analyze future water supplies, dam safety, flood control and requirements for water management
- Incorporate the assessment into the existing Risk Register and part of the Continuous Improvement Programs



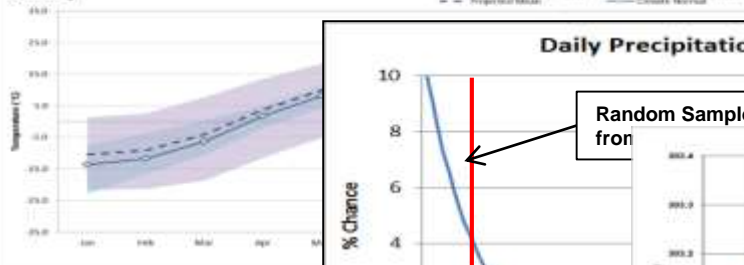
When to Invest in Adaptation?



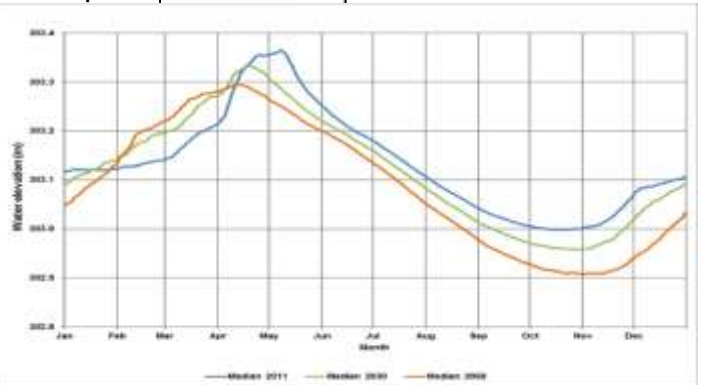
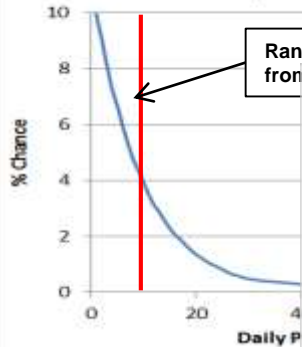


Innovations

Monthly Mean Projected Temperatures for All Models (2071 - 2100):
Sudbury



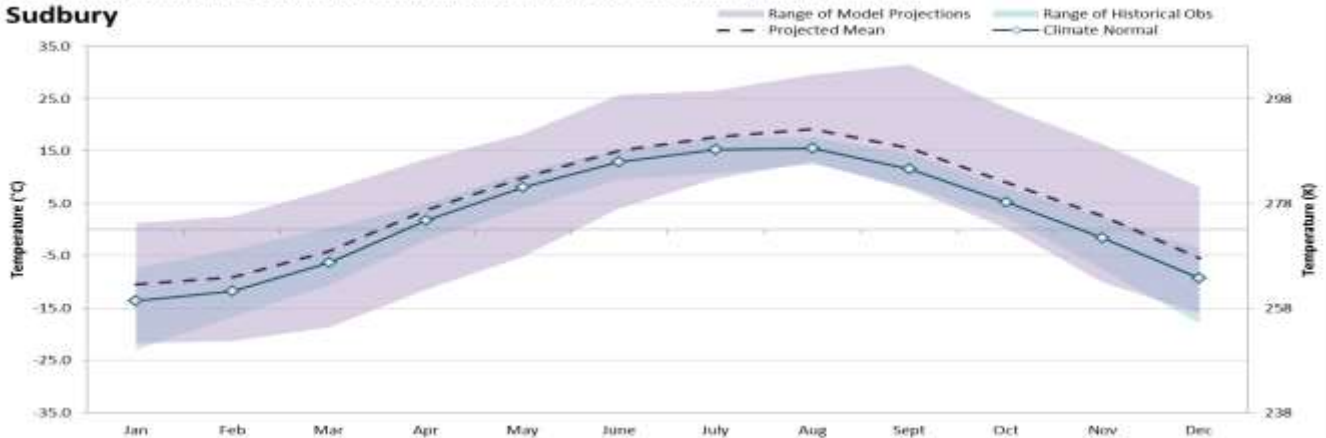
Daily Precipitation





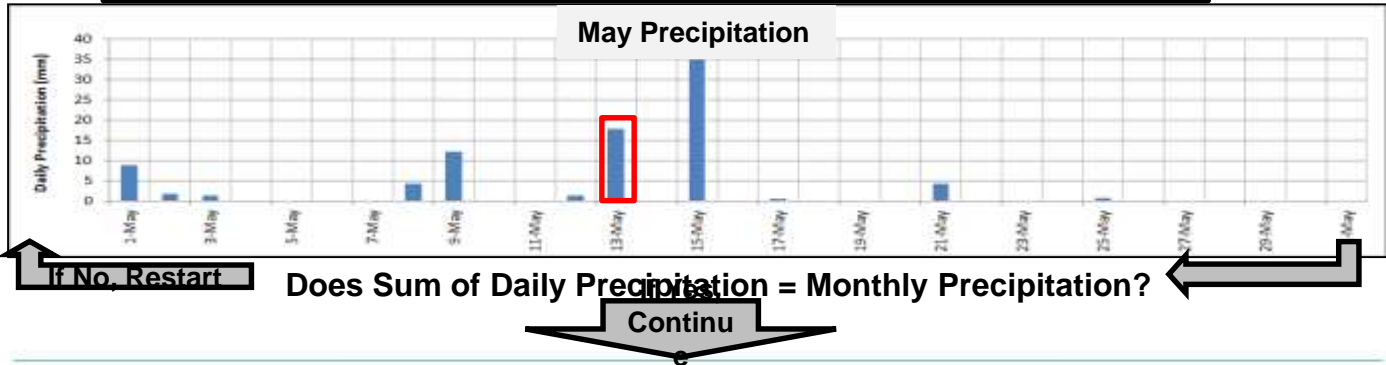
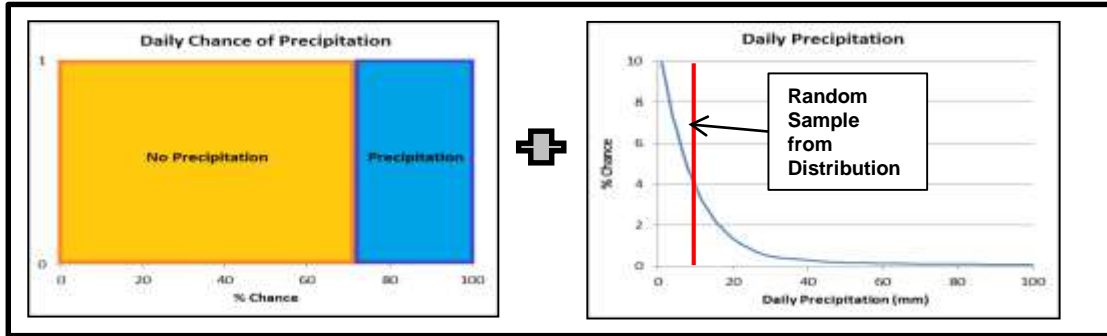
Innovation – Understanding Uncertainty

**Monthly Mean Projected Temperatures for All Models (2071 - 2100):
Sudbury**



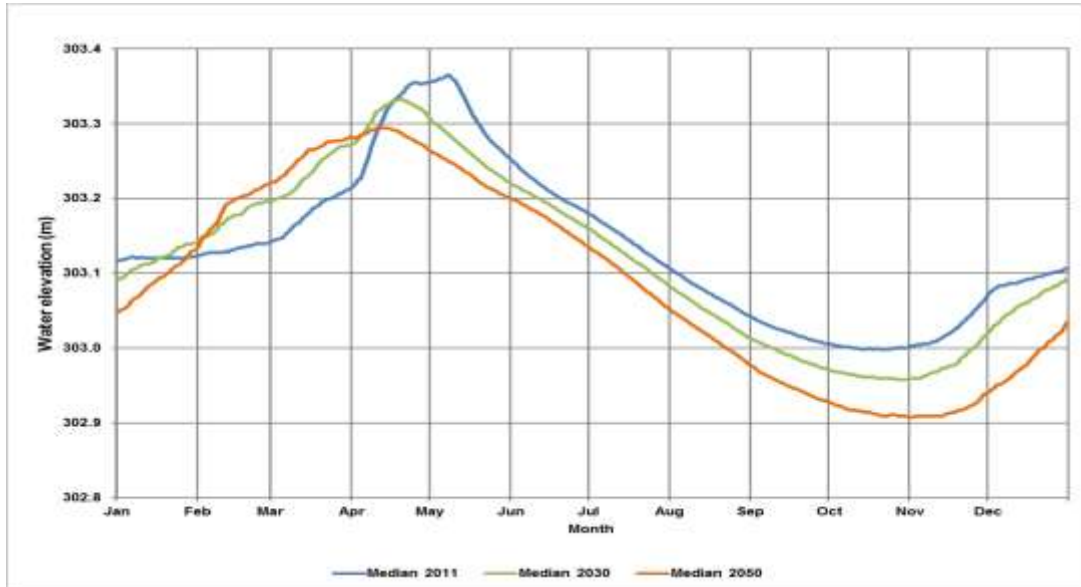


Innovation – Probabilistic Assessment





Innovation – Modelling the Future





- Data exists to describe the range and uncertainties of the future climate projections
- Risk Assessment framework can identify climate interactions that require further assessment
- Economic assessment can identify the preferred adaptation measures
- Continuous improvement process can create corporate buy in



Sean_Capstick@Golder.com