

MIABC Conference
Rising Waters: Managing Flood Claims and Municipal Risk
Wednesday, April 8, 2026



Hydrology and Flow Rates

- The 100-year flood has a 1% chance of happening each and every year, on every river.
- When the hydrological event aligns with the basin response, high flows will result (i.e. convective storm over an urban environment or atmospheric river over a mid-sized river)
- Compounding flood mechanisms can result in higher likelihood of total flood risk.
- Impacts of Climate Change are one component of many potential changes and cannot be looked at in isolation.
- Why consider climate change in your projects? We are experiencing increased climate extremes (e.g. precipitation, flow); the events can combine in new ways (e.g. river flows with higher sea levels); and we expect long service life of infrastructure (e.g. 75-years). This combination increases the chances of failures.

Dealing with Climate Change Uncertainty in Peak Flow Estimates

- **Model Uncertainty:** Some climate models are too hot, or too wet, or too <insert parameter of interest>
 - Solution: Use a model ensemble to frame uncertainty and to understand trends
- **Emissions Uncertainty:**
 - Solution: Include a range of possible future emission scenarios in the ensemble
- **Climate Variability:**
 - Solution: Consider changes over a long enough window that short-term climate variability does not significantly skew results

Community Impacts and Mitigation

- BC Professional Reliance model gives power to qualified professionals for guidance
- Guidance provides a range of probably values
- BC Provincial/EGBC guidelines require a muni to use one specific value (Q200+CC) for all infrastructure
- With limited resources, conscious choice is being made to protect less infrastructure to a single highest-in-Canada standard
- More projects would be possible if legal/professional protections existed to use risk-based analysis
- Risk-based analysis would require another guidance metric, NPV is one option

Legal Considerations

- Legal risk from drainage and flooding can be controlled but not eliminated.
- Some of the defences available are fact specific and technical.
- Actions and events should be documented and preserved for potential use in legal proceedings.