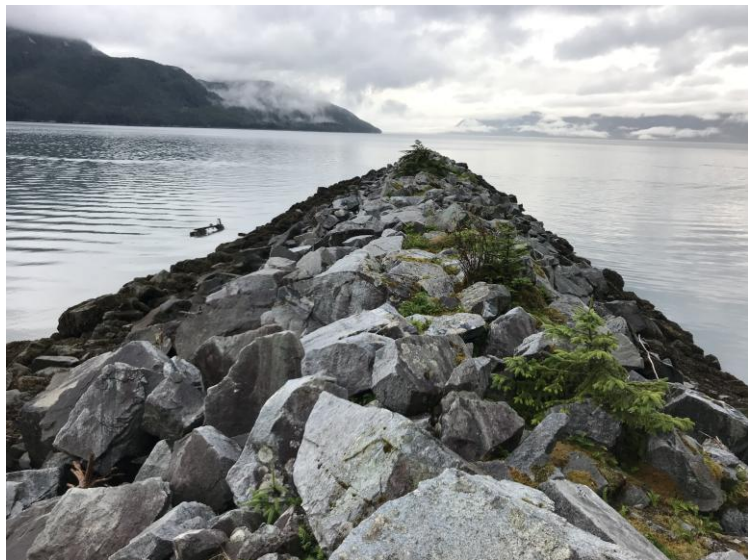


Lessons Learned from Considering Climate Change in Floodplain Mapping

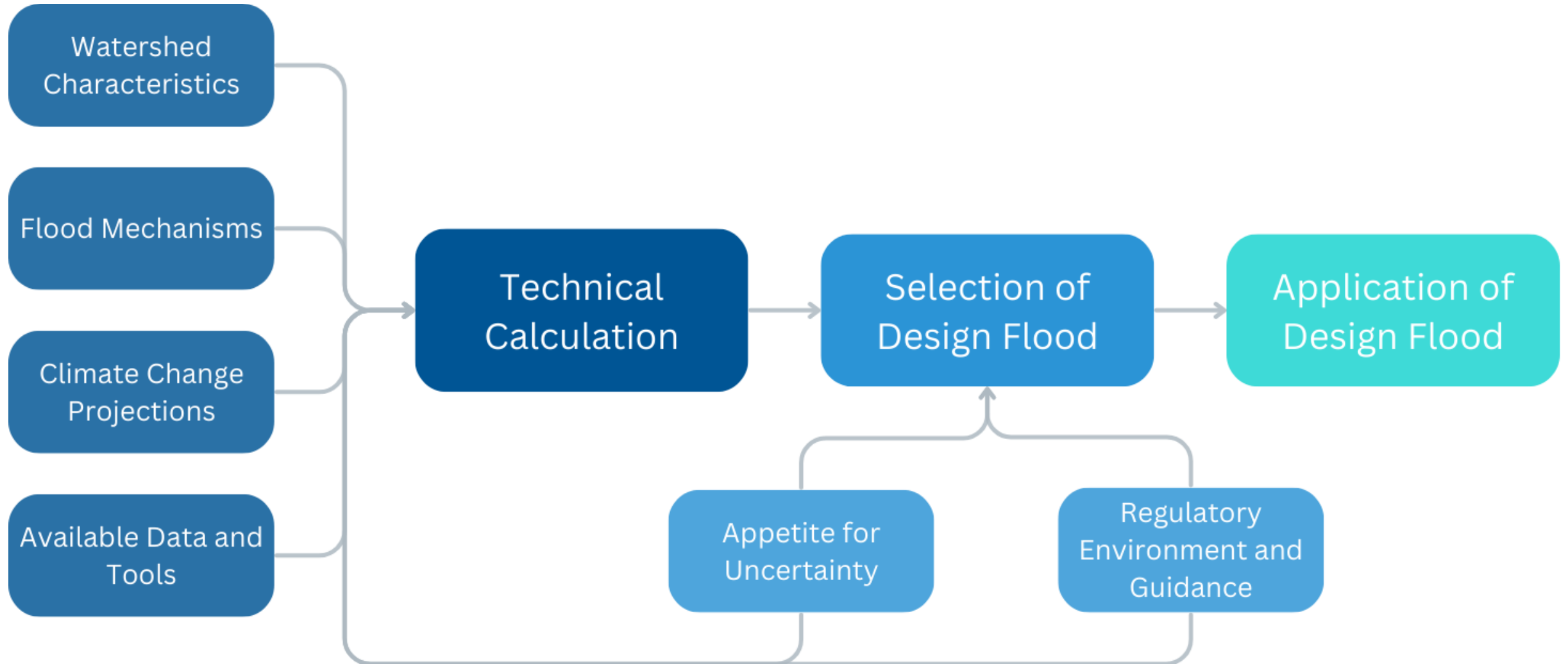
Western Floodplain Mapping Conference

February 19, 2025

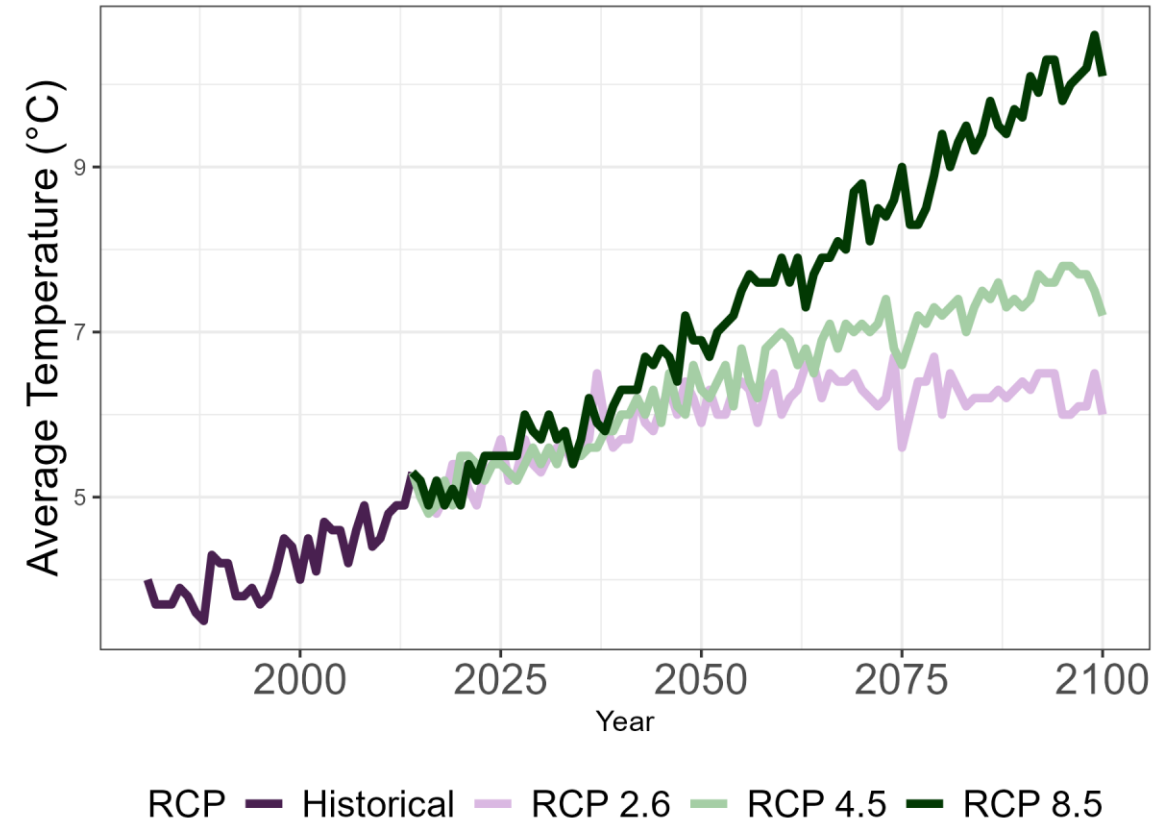
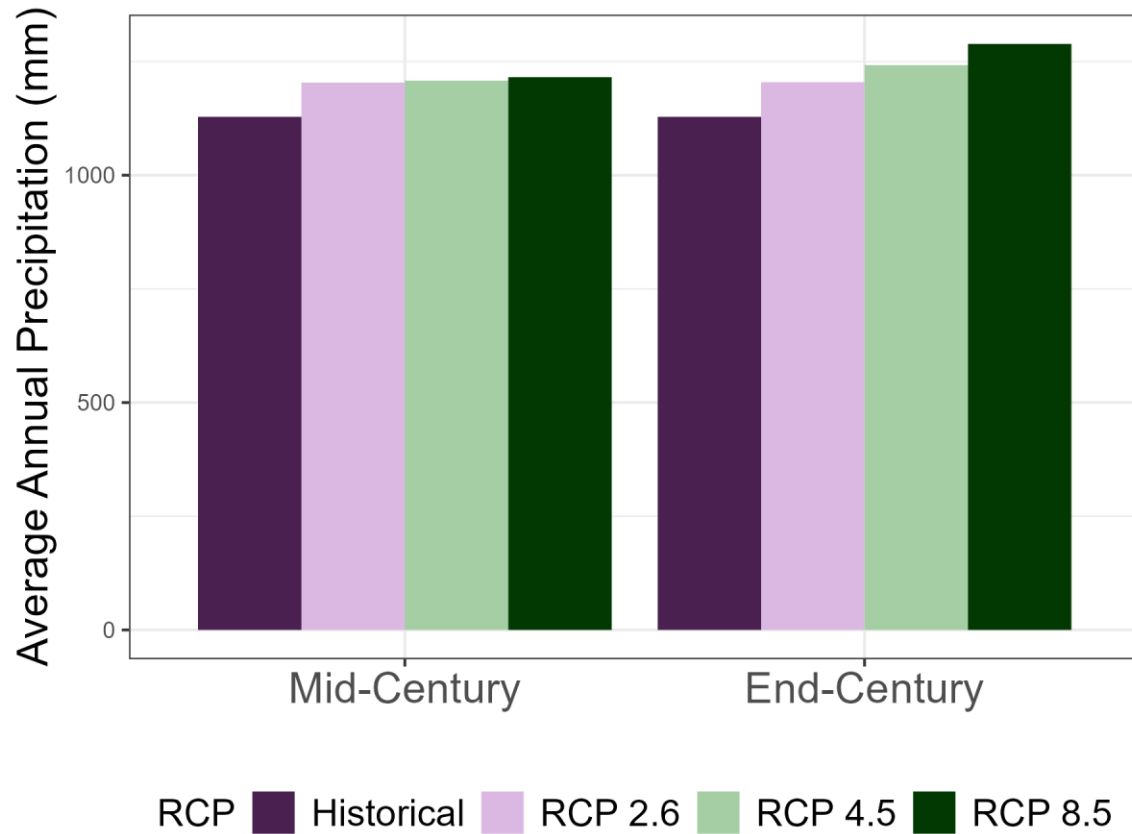
Introduction



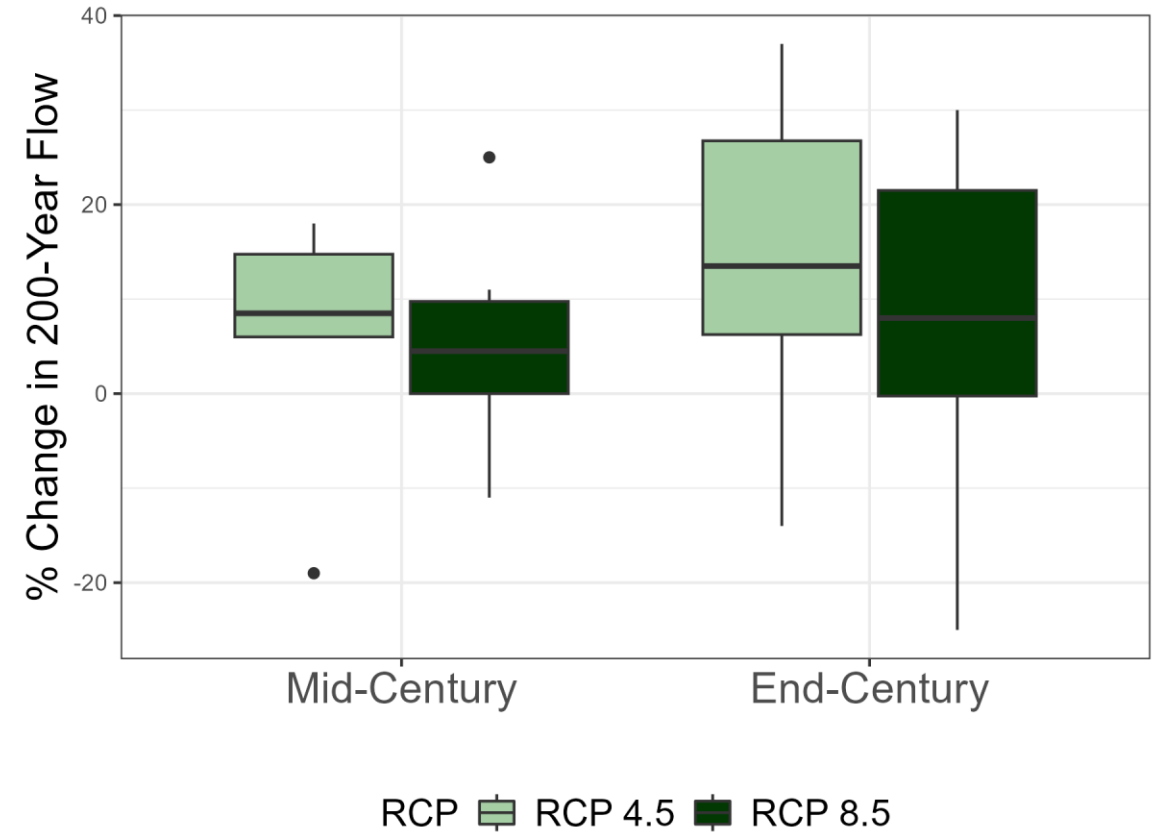
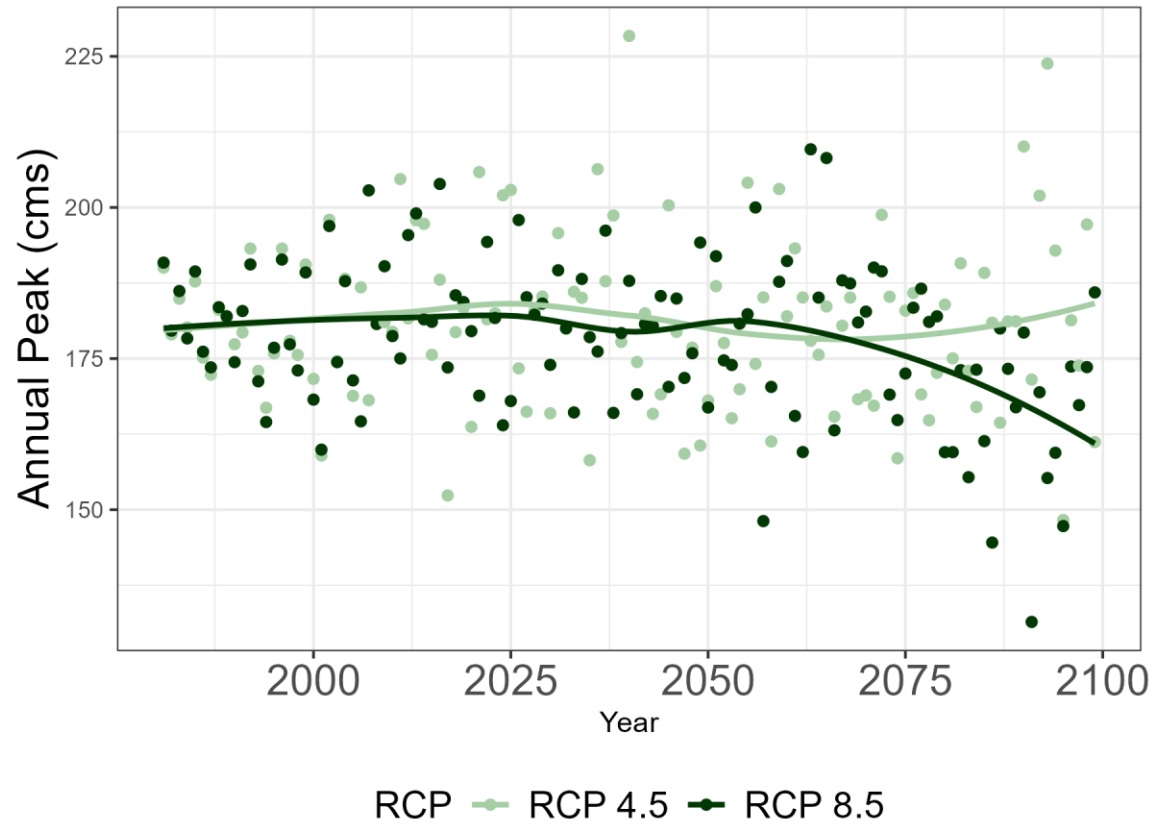
High Level Approach to Climate Change



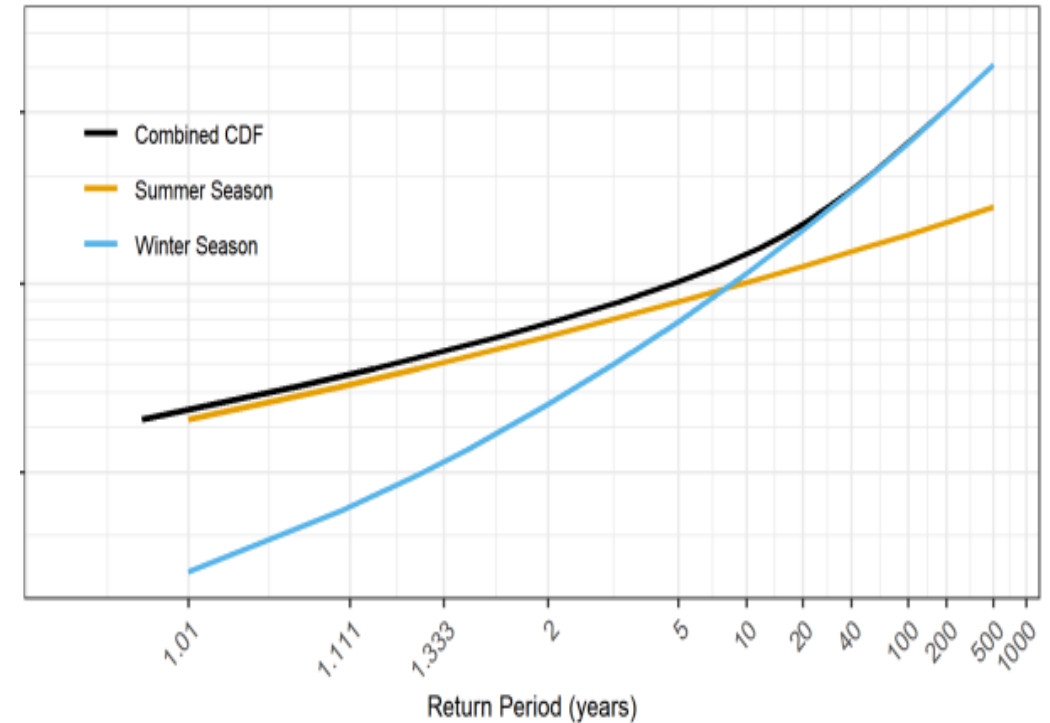
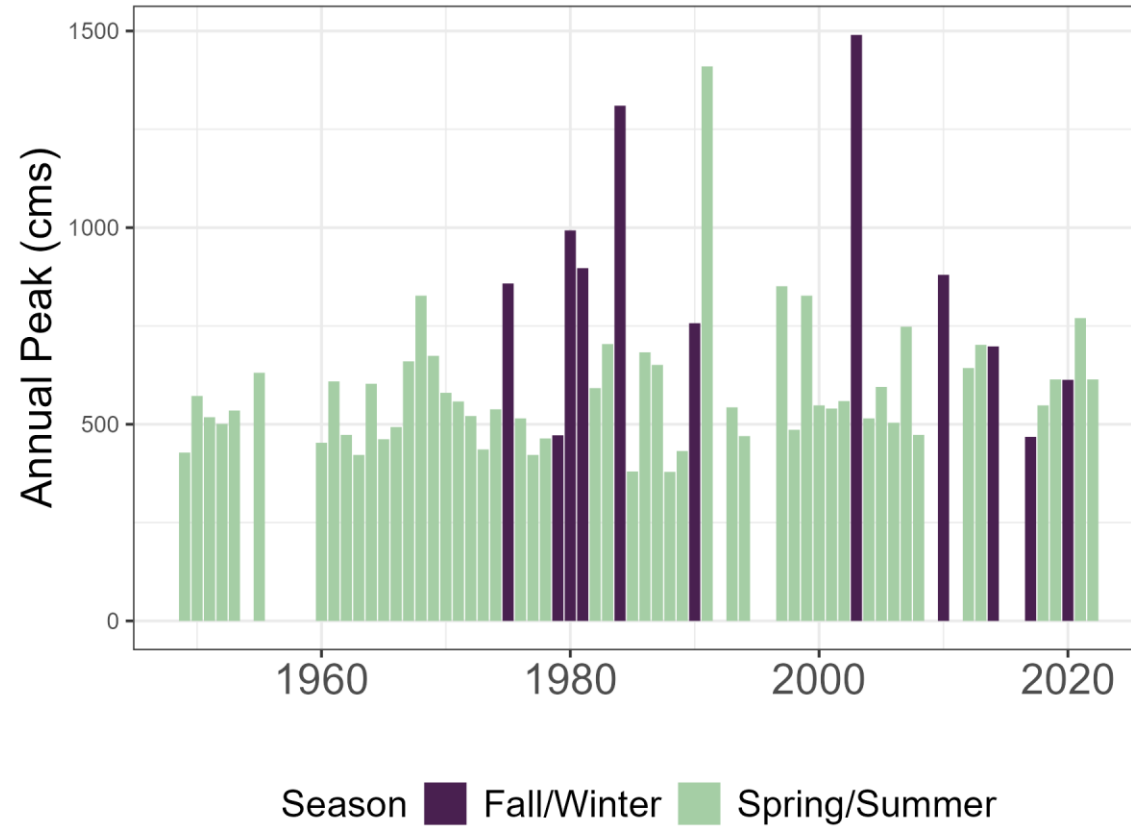
Emission Pathways



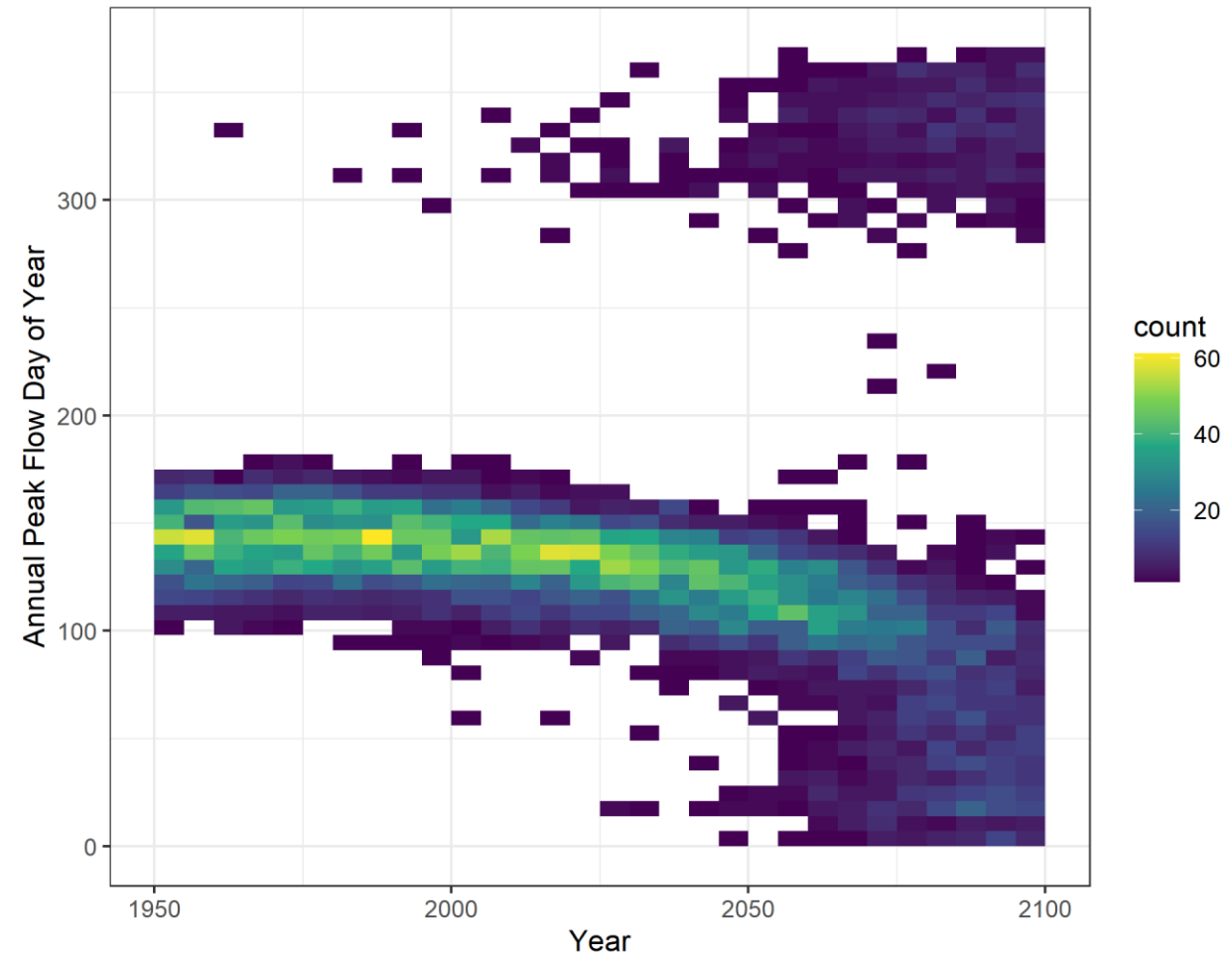
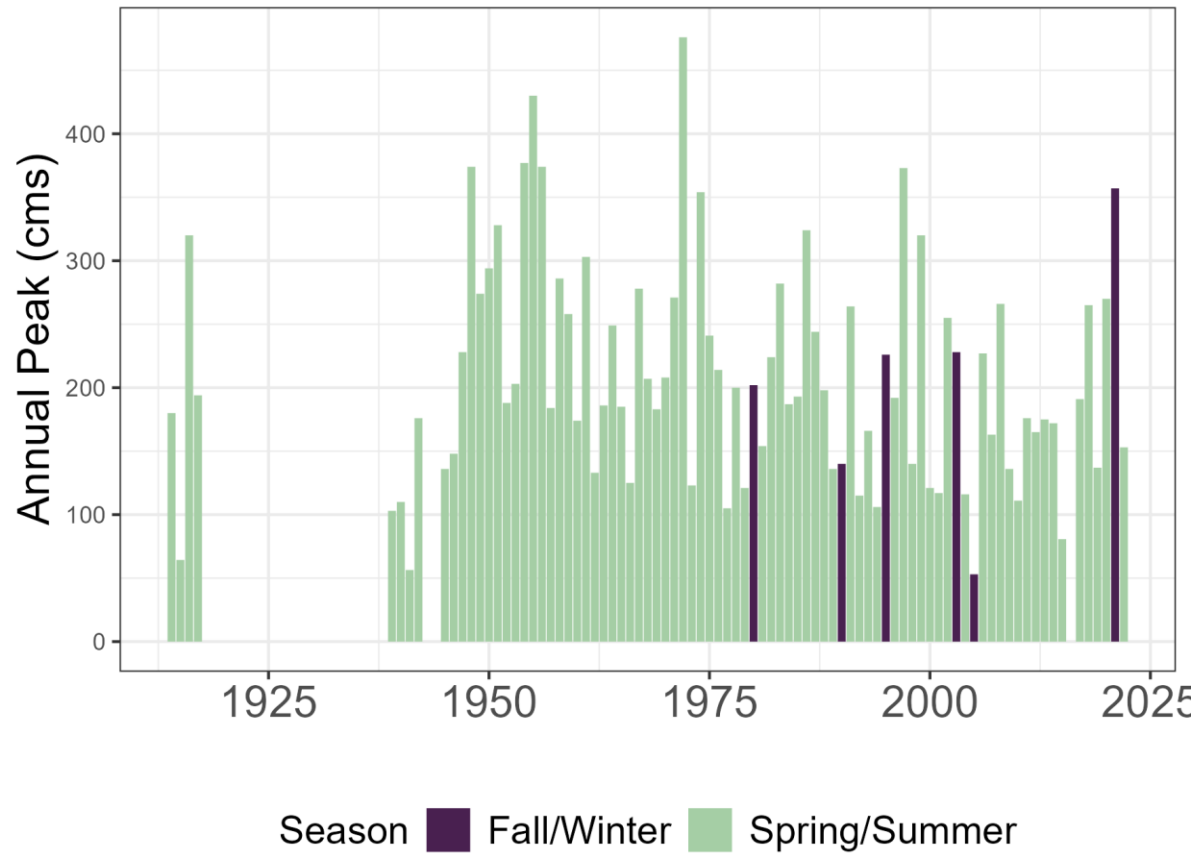
Emission Pathways



Mixed Regime Analysis – Historical Conditions

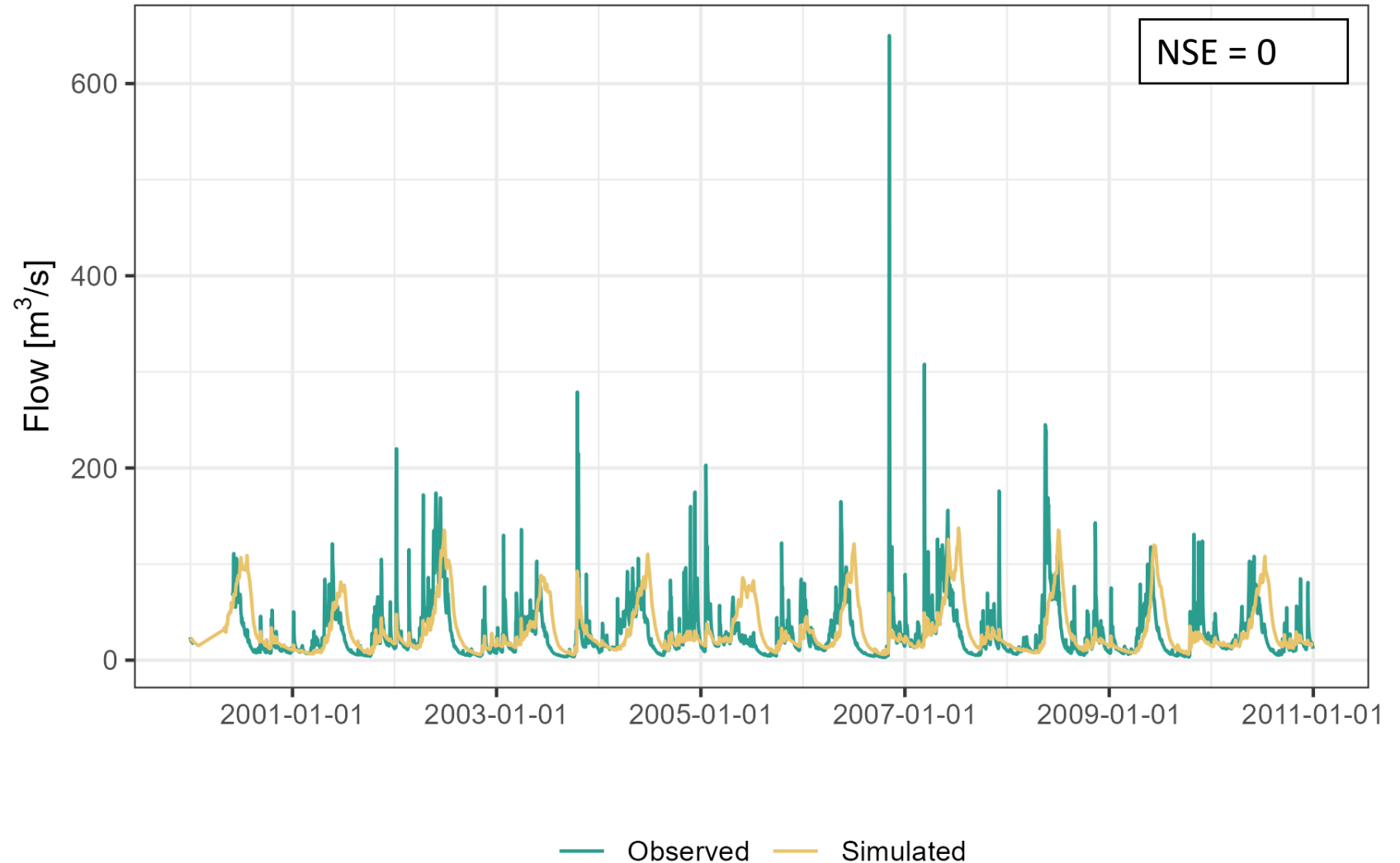


Mixed Regime Analysis – Climate Change Conditions



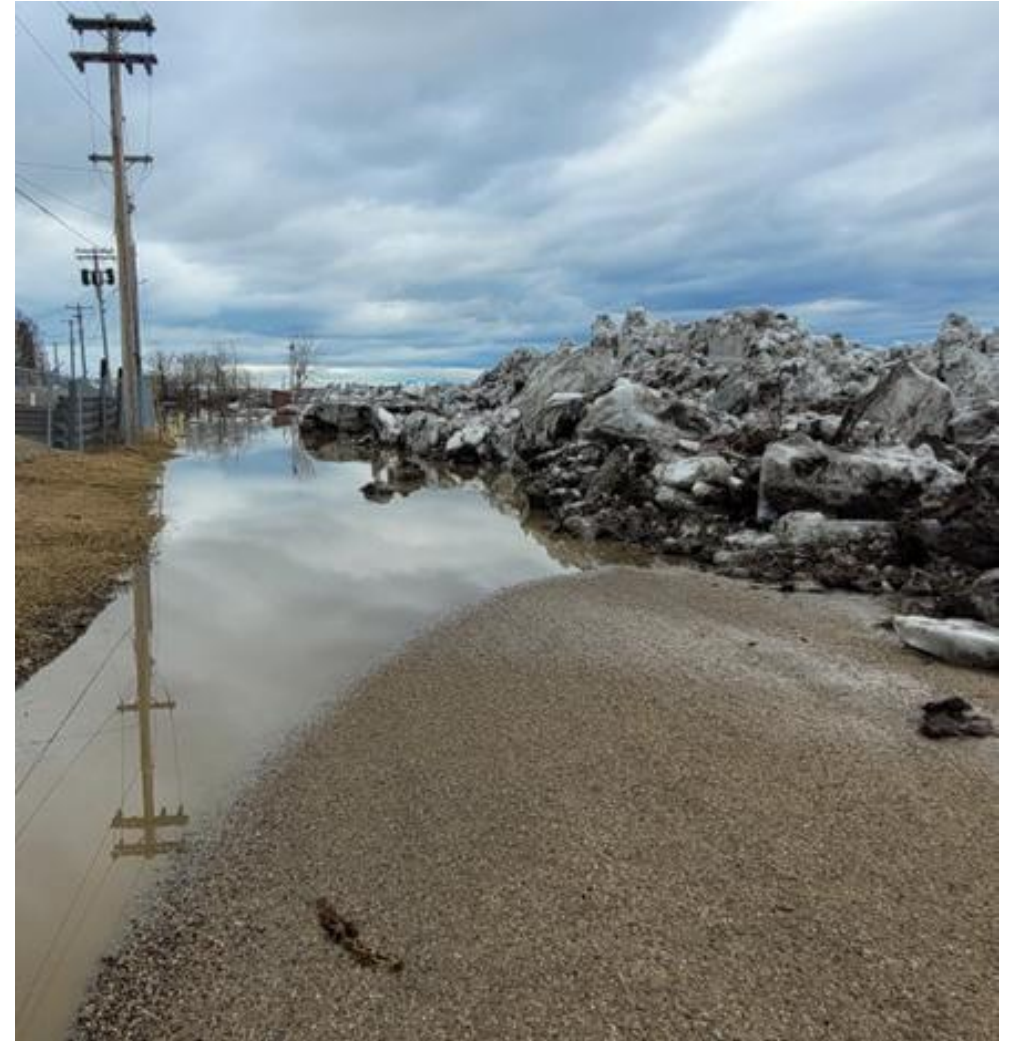
Availability of Data and Tools

- Increase in availability of data and tools to support understanding of future streamflow
- Critical to ensure data/tool is appropriate for purpose



Ice Jams

- Magnitude and frequency of events does not necessarily increase
- Process based and complex
- Requires integration from the start of the project when thinking about historical analysis as well



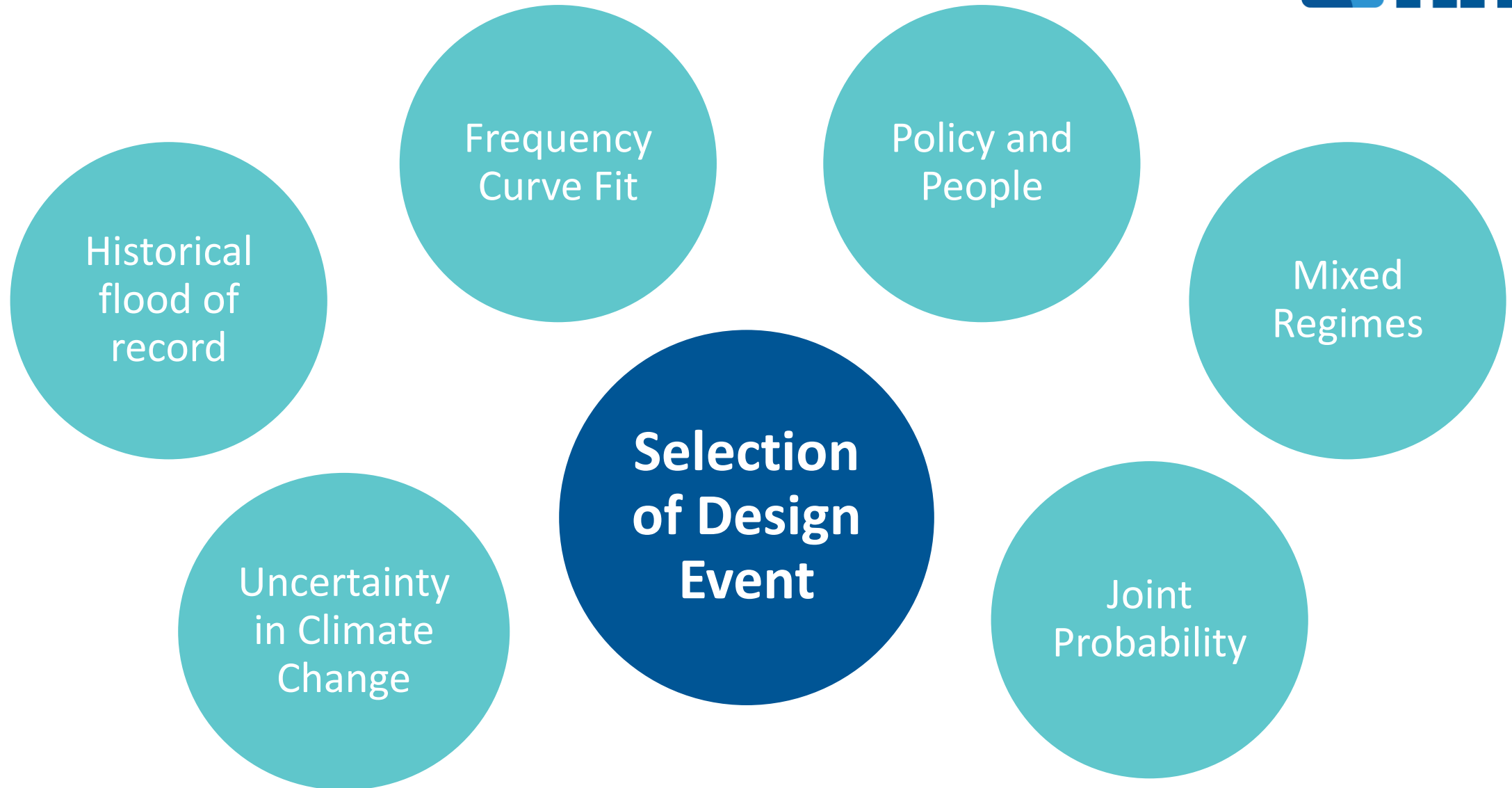
Selection of Design Events



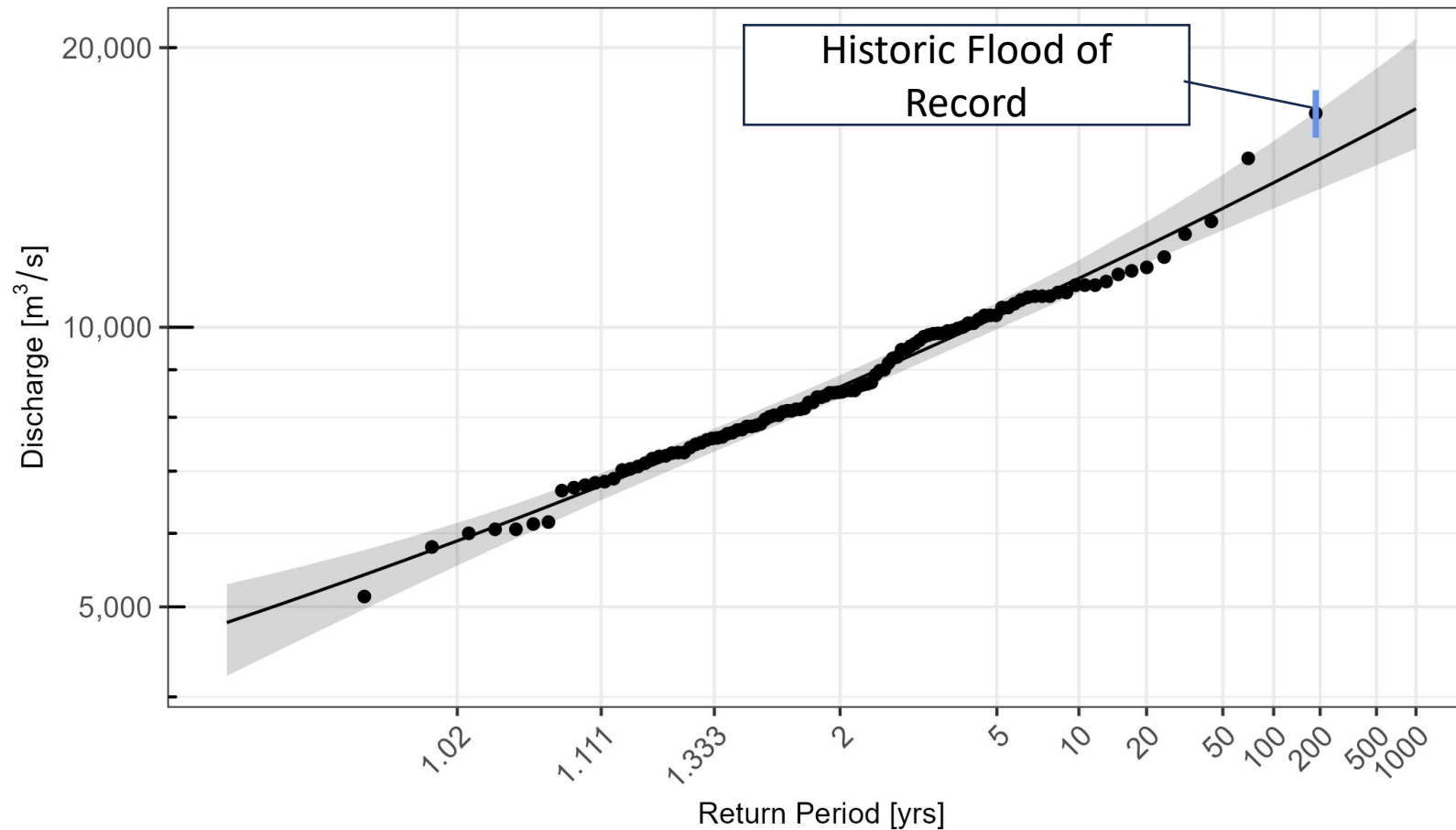
Province/Territory	Design Flood Standard	Climate Change Considerations
British Columbia	200-Year	EGBC Guidance
Alberta	100-Year	Typically require commentary, not integrated into mapping
Saskatchewan	500-Year	No standard
Manitoba	200-Year	Evaluating Methods
Yukon	Federal guidelines	No standard
Northwest Territories	100-Year or 200-Year	Considered in new ice jam guidelines

Adapted from Braden and Simonovic, 2020

Selection of Design Events



Selection of Design Events



“...the presence and uncertainty in the climate and flow projections should not be a barrier to decision making and effective flood mitigation”

Application of Design Flows



- Climate change should be a multi-disciplinary conversation
- More than just “how high”
- Consider integration from scoping through to implementation



Key Takeaways



- A good understanding of the underlying data and hydrology supports the technical analysis
- Selection of design events is more than just taking the X-Year peak flow
- Climate change needs to be integrated throughout project from scoping to implementation