



# CHEHALIS BASIN BOARD SPECIAL MEETING

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Topic: Technical Briefing on Climate Change Data

Date: June 24, 2022

Time: 1pm – 2:30pm

Location: Zoom meeting

## Attendees

### *Chehalis Basin Board Members Present:*

- Vickie Raines, Chehalis River Basin Flood Authority
- Edna Fund, Chehalis River Basin Flood Authority
- Jay Gordon, Chehalis River Basin Flood Authority
- J. Vander Stoep, Office of the Governor
- Steven Malloch, Office of the Governor
- Glen Connelly, Confederated Tribes of the Chehalis Reservation

### *Chehalis Basin Board Ex-Officio Members Present:*

- Alex Smith, Department of Natural Resources
- Josh Giuntoli, Washington State Conservation Commission
- Michael Garrity, Department of Fish and Wildlife
- Rich Doenges, Department of Ecology

### *Board Staff/Board Guests Present:*

- See Attachment A

## Welcome, Introductions

Chair Vickie Raines called the meeting to order at 1:05 p.m. and welcomed the Board, staff, and audience.

## Meeting Purpose

OCB Director McNamara Doyle noted that this special Board meeting was convened to:

- Brief board members on climate change methodologies and results that have informed decision-making to date

- Discuss the most recent climate change methodologies and results for high and low flows
- Provide information for future Board discussions

OCB Director McNamara Doyle also noted that decisions for use of climate models in the Final EISs for the proposed flood retention facility have been made by the SEPA and NEPA responsible officials in response to comments on the Draft EISs.

Below is the link to the presentation materials:

- [Climate change Board presentation](#)
- [Climate change memo for Chehalis Basin Board](#) (from April 25, 2022)

## **Climate Change Modeling for the Chehalis Basin Strategy**

Heather Page (Anchor QEA) provided a high-level overview of climate change models for the Chehalis Basin Strategy. This includes how climate change projections have been used for various planning and project-level elements, along with their associated timelines. Heather highlighted which elements of the Strategy have had climate change modeling completed, what years, and for what purpose. For all of these strategy elements, the primary purpose of the modeling has been at the planning level (versus project design level). In most instances, the modeling has been used to a) inform past strategic planning decisions by the Board, and b) to prepare for future decisions by the Board. In some cases, it has been used to inform project design.

Other elements of the Strategy have not used climate change modeling. However, many of these elements considered existing data, previous model results, and flood hazard areas (where required). In the case of the Draft NEPA EIS for the proposed flood retention facility, future climate conditions were not modeled. However, the Draft NEPA EIS considered precipitation patterns and air temperatures in the Chehalis Basin and qualitatively acknowledged that the climate could vary in the future (wetter in winter, drier in summer).

Larry Karpack (Watershed Science & Engineering), Guillaume Mauger (Univ. of Washington Climate Impact Group), Adam Hill and Merri Martz (Anchor QEA) provided additional background and history on the use of climate change models for the Chehalis Basin Strategy and more detail on the methodologies and uses in various Strategy elements. The presentations highlighted that peak flow (100-year flood) estimates under future climate change scenarios have changed over time as climate models have been refined and updated.

In the latest analysis, using climate change predictions from the Climate Impacts Group, increased precipitation is expected to increase the number of flood events. For example, this

would result in triggering the use of the proposed flood retention facility more frequently than under current conditions. In regard to summer streamflow changes, monthly mid- and late-century summer flows were predicted to decrease by 11-30%.

Below is a high-level summary of key comments, questions, clarifications, and discussion topics raised by Board members during the meeting:

- Streamflow changes impacted by climate change vary across the basin. Modeling work has changed over time to reflect these spatial patterns and variations.
- Models are derived from existing conditions and data. They are downscaled from a global climate model to a region of interest. Outputs of this are then fed into “impact” models where variables including temperature, precipitation, and weather are considered.
- In theory, dynamical downscaling is better than statistical downscaling. This might not be true in all cases.
- The Board has a policy choice in terms of deciding what level of risk is acceptable when determining the best approach for using climate change modeling.
- It’s not possible to assign a probability to either the low- or high-end streamflow predictions. That is largely because the global emissions projections used in the climate models vary widely and are subject to international geopolitical variables over a very long time horizon. Using or incorporating more climate models would not necessarily lead to greater *certainty* in the resulting projections, although it could be helpful if more *precision* is needed.
- Board members emphasized the challenge of defining their process and approach to using climate modeling in the Chehalis Basin Strategy when speaking to public groups and the legislature.

### Next steps for climate change modeling, not including the Final EISs

OCB Director McNamara Doyle encouraged Board members to focus on if there are additional information needs that would support discussions on the use of climate change modeling for future decision-making, and if there are additional questions that can be answered at future Board meetings.

### Next Steps and Closing

OCB Director McNamara Doyle and Chair Raines thanked Board members for their participation and adjourned the meeting. The next Board meeting is scheduled for July 7, 2022, to be held hybrid (in-person/online). Board members and presenters are encouraged to attend in-person and public should continue participating online.



## *Attachment A*

### *Board Staff/Board Guests:*

- Adam Hill, Anchor QEA
- Alexandra Gustafson, Trout Unlimited
- Andrea McNamara Doyle, Department of Ecology, Director, Office of Chehalis Basin
- Ann Costanza, Anchor QEA
- Arthur Grunbaum, Friends of Grays Harbor
- Casey Hart, Ross Strategic
- Cindy Hansen, Orca Network
- Devin Reck, Department of Transportation
- Diane Butorac, Department of Ecology
- Erik Martin, Flood Control Zone District
- Gary Morishima
- Guillaume Mauger, Climate Impacts Group
- Heather Page, Anchor QEA
- Hope Rieden, Department of Natural Resources
- Jennifer Tice, Ross Strategic
- Jim Kramer, Kramer Consulting
- John Robinson, Flood Control Zone District
- Ken Ghalambor, Ross Strategic
- Larry Karpack, Watershed Science & Engineering
- Lee First, Twin Harbors Waterkeeper
- Matt Procriv
- Matt Szymanowicz
- Merri Martz, Anchor QEA
- Michael Kasch
- Mike Olden, City of Montesano
- Nat Kale, Department of Ecology, Office of Chehalis Basin
- Scott Boettcher, Flood Authority
- Sean Swope, Lewis County
- Victoria Knorr