CHEHALIS BASIN BOARD SUMMARIZED MEETING AGENDA AND ACTIONS

Date: November 4, 2020
Time: 9:00 am to 1:00 pm
Location: Zoom online meeting

ITEM	FORMAL ACTION	FOLLOW-UP ACTION
1. Consent November 4,2020 agenda; approval of September 15 and 30, 2020 meeting summaries	Decision: Current agenda approved; September 15 and 30 meeting summaries approved	No follow-up action.
2. Local Actions Program	Decision: Board consensus approval for the near-term climate change modeling option of continued use of the 26% increase, incorporating the 50% increase in flood flows and completing the complementary analysis on precipitation for tributaries. Decision: Board consensus approval for the near-term approach of using local knowledge of focus areas and identifying high priority erosion areas in up to 100 miles of basin.	OCB staff will work with the Technical Advisory Group to bring more detailed information to the Board regarding areas of concern based on the flooding expansion in the 26% and the 50% climate change modeling scenarios. OCB staff will work with the Technical Advisory Group to develop a more detailed plan for Board consideration on how and when the high priority erosion areas could be addressed over the longer term.
3. Proposed 2021 Board Meeting Dates	Decision: Board consensus approval for the 2021 Chehalis Basin Board meeting schedule with amended times for additional meeting dates to extend from 9:00am-12:00pm.	OCB staff will submit notices in the Washington State Register for the 2021 Board meeting dates. OCB staff will send out new 2021 calendar invites for Board members.
4. Community Flood Assistance & Resilience (CFAR)	Discussion	No follow-up action.
5. Chehalis River Basin Flood Control Zone District plan for continued analysis of potential	Discussion	No follow-up action.

ITEM		FORMAL ACTION	FOLLOW-UP ACTION
	for FRE avoidance, minimization, mitigation		
6.	Next Steps and Closing	Discussion	No follow-up action.

Attendees

Chehalis Basin Board Members Present:

- Vickie Raines, Chair, 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
- Steve Malloch, Office of the Governor
- Tyson Johnston, Quinault Indian Nation (QIN)
- Glen Connelly (alternate to Harry Pickernell), Confederated Tribes of the Chehalis Reservation

Chehalis Basin Board Ex-Officio Members Present:

- Rich Doenges, Department of Ecology
- Stephen Bernath, Department of Natural Resources
- Michael Garrity, Department of Fish and Wildlife
- Josh Giuntoli, Conservation Commission
- Bart Gernhart, Department of Transportation

Board Staff/Board Guests Present:

- See Attachment A

Welcome, Introductions

Chair Vickie Raines called the meeting to order at 9:05 a.m. and welcomed the Board, staff, and audience.

Consent Agenda

The Board did not have additions or revisions to the November 4, 2020 Special Meeting Agenda.

BOARD DECISION: Agenda approved by consensus.

Approval of September 15, 2020 Special Meeting Summary

The Board did not have additions or revisions to the September 15, 2020 Special Meeting Summary.

BOARD DECISION: September 15, 2020 meeting summary approved by consensus.

Approval of September 30, 2020 Special Meeting Summary

The Board did not have additions or revisions to the September 30, 2020 Meeting Summary.

BOARD DECISION: September 30, 2020 meeting summary approved by consensus.

Local Actions Program

OCB Director Andrea McNamara Doyle provided the Board an update on the work plan for the newly developed Local Actions Program Technical and Implementation Advisory Groups, and reminded the Board of the potential elements of a Local Actions Program and the Board approved planning assumptions and outcomes.

Climate Change Modeling Near- and Long-term Recommendations

The Board was reminded of their decision that a Local Actions Program should plan for the 100-year flood conditions that are predicted for 2080 when considering outcomes and actions. This planning assumption provides the foundation for all the outcome measures agreed to by the Chehalis Basin Board and requires a decision about what climate change assumptions to use in predicting future flooding.

Guillaume Mauger (Climate Impacts Group) and Larry Karpack (Watershed Science and Engineering) provided the Board with an overview of the Local Actions Program technical analyses for climate change modeling options. Based on current modeling, the average peak flows were predicted to increase by 13% at mid-century and 11% by late-century for the low-end emissions scenario. Average peak flows were predicted to increase by 11% at mid-century and 26% by late-century for the high-end emissions scenario. This analysis was more refined than previous climate change analyses completed for the Programmatic SEPA EIS, which had assumed peak flow increases of 66% during a 100-year flood event.

Members of the Technical Advisory Group concurred with the benefits of a near-term approach (over the next couple of months) to climate change modeling that uses a 26% increase for flood flows, while also exploring the impacts of larger changes by testing the effect of other scale factors (e.g., 50% increase) and completing a complementary analysis on precipitation for tributaries. OCB staff also recommended this near-term approach, noting that this information would then be incorporated into figures showing the bracketed low- and high-end range (26% and 50% increase), and tributary-specific effects. These updated future floodplain figures would then inform a range of actions that could address damage from 100-year flood events for 2080.

In the longer term, the basin-wide hydrologic model could be refined to improve flow estimates on tributaries of importance for the Local Actions Program, simulate results for the full ensemble of General Circulation Models (GCMs) that are now available, and re-evaluate the analysis of projected changes in peak flows. Climate change analyses would be conducted in the near- and long-term for the entire Chehalis Basin including the mainstem and tributaries. OCB staff recommended the Board provide additional guidance to the Technical Advisory Group about the intended use and application of the models. This would allow advisory group members to better formulate a recommendation that is informed by updated near-term climate change modeling and the intended use of future model results.

Key comments and discussion topics included:

- Board members were reminded that the climate change model is looking at the statistical pattern of rainfall, but it is not a forecasting model that looks at time sequencing of rainfall.
- Board members are interested in better understanding how this information will be used in the future for planning and land use analyses versus more specific design analysis for on the ground projects.
- Board members are interested in seeing more details on projected areas of concern and what the implications are of using different analytical tools.

- Board members voiced the need for additional consideration of the impacts of continuing to use the 26% increase rather than focusing on larger changes, e.g. 50% increase in flood flows.

Below is a link to the presentation materials:

- Local Actions Program Presentation
- LAP Climate Change Board Presentation
- Climate Change Modeling Near- and Long-term Recommendations
- Magnitude of Late Century Flood for Local Actions Program

BOARD DECISION: Board approved the near-term climate change modeling option of continued use of the 26% increase, incorporating the 50% increase in flood flows and completing the complementary analysis on precipitation for tributaries.

FOLLOW UP ACTION: OCB staff will work with the Technical Advisory Group to bring more detailed information to the Board regarding areas of concern based on the flooding expansion in the 26% and the 50% climate change modeling scenarios.

Delineating Erosion Hazards Recommendations

OCB Director Andrea McNamara Doyle reminded the Board of the agreed upon outcome measures for a Local Actions Program, with the following being the most directly relevant to erosion and channel migration hazards:

- The number of locations where migrating river channels and bank erosion pose a high risk of near-term damage to valuable structures or loss of economically productive land uses would be reduced by an average of X per year over up to 30 years, while protecting ecological processes
- No new structures would have been developed that are vulnerable to channel erosion, mainstem, or tributary flooding from 2080 predicted 100-year flood levels.

Marri Martz (Anchor QEA) provided the Board with an overview of the Local Actions Program technical analyses for options for delineating erosion hazards. The potential mapping options include several different levels of mapping that provide different levels of detail and precision.

The mapping options are defined as follows:

1. **Modern valley bottom mapping**: Area where channel migration has likely occurred since glaciation or other major geologic events (past few thousand years).
2. **Historical CMZ mapping**: Area where channel migration has occurred as documented in historical records including aerial photographs (past 80 to 150 years).
3. **Avulsion hazard mapping**: Area where the channel may not have been in the historical record, but there is a potential for rapid channel migration into low-lying areas in the floodplain.
4. **Planning-level CMZ mapping**: GIS-based and includes the previous three map products, but also includes mapping of disconnected migration areas, areas of potential slope instability on the channel margin, and identification of geomorphic landforms and other valley bottom characteristics to more comprehensively identify the CMZ.
5. **CMZ delineation**: Both GIS analysis of the above mapping products and field analysis of soils, channel and valley bottom characteristics, and valley margin slopes to most accurately predict

where channel migration has historically occurred and could occur over a designated future timeline.

Technical Advisory Group members agreed that it is important, within the next few months, to identify high priority areas that have known bank erosion areas of concern. Some members also supported completing focused area mapping in a few known, high-risk areas—using LiDAR and historical channel tracing and structure information—on the grounds that it would support the Board's initial evaluations and provide a good foundation to build upon for the future. OCB staff recommended the near-term approach of identifying high priority erosion areas based on input from the Implementation Advisory Group and others with local knowledge of conditions on the ground, and using this in-basin knowledge to focus on up to 100 miles of high priority areas to develop initial maps.

Below is a link to the presentation materials:

- LAP Erosion Hazard Delineation Board Presentation
- Delineating Erosion Hazards Recommendations

Key comments and discussion topics included:

- Board members agreed on the importance identifying high priority erosion areas using technology such as LIDAR and using local on the ground knowledge of conditions for the near-term.
- Board members suggested using CMZ delineation (Option 5) as a useful planning and development tool for the longer-term and it could be used in conjunction with any updates to the Shoreline Master Plan.
- Board members are interested in understanding more how erosion hazard areas and flood flows are connected.
- The term "local knowledge" was clarified to mean local governments and conservation districts. The Technical Advisory Group is seeking the input of these local entities because they are aware of both individual landowner and large-scale erosion that may be occurring.
- Board members requested more information on the scope and scale of erosion hazards over the long-term.

BOARD DECISION: Board consensus approval for the near-term approach of identifying high priority erosion areas based on input from the Implementation Advisory Group and others with local knowledge of conditions on the ground, and using this in-basin knowledge to focus on up to 100 miles of high priority areas to develop initial maps.

FOLLOW UP ACTION: OCB staff will work with the Technical Advisory Group to develop a more detailed plan for Board consideration on how and when the high priority erosion areas could be addressed over the longer term.

Proposed 2021 Board Meeting Dates

OCB Director McNamara Doyle reminded the Board of their previous discussion at the September 30 meeting, where OCB staff proposed to continue holding regular Chehalis Basin Board meetings on the first Thursday of each month during 2021. Board members also discussed additional Board meetings in the February-March 2021 timeframe as they develop their recommendations on a long-term strategy.

Below is a link to the presentation materials:

- 2021 Chehalis Basin Board meeting schedule

BOARD DECISION: Board consensus approval for the 2021 Chehalis Basin Board meeting schedule with amended times for additional meeting dates to extend from 9:00am-12:00pm.

FOLLOW UP ACTIONS:

- OCB staff will submit notices in the Washington State Register for the 2021 Board meeting dates.
- OCB staff will send out new 2021 calendar invites for Board members.

Community Flood Assistance & Resilience (CFAR)

Chrissy Bailey (OCB Staff) provided the Board an update on the results of the Community Flood Assistance and Resilience (CFAR) interim program solicitations for technical assistance, technical support, and project development. The program is divided into two phases. The current phase is the "interim" phase, which runs from now through the end of the current biennium (June 30, 2021). The objective during this phase is to "test" the program and identify lessons learned that will inform the long-term program.

The CFAR early opportunity projects are in the Town of Bucoda and City of Aberdeen. In Bucoda, property owners are generally interested in home retrofits such as the installation of flood vents. In Aberdeen, two pilot neighborhoods that will not be protected by the proposed North Shore Levee have been selected to help residents and businesses use elevation data to protect buildings from flood damage and lower flood insurance premiums.

Below is a link to the presentation materials:

- Community Flood Assistance and Resilience Program Presentation

Key comments and discussion topics included:

- Board members discussed how OCB will act as the entity that implements and manages the CFAR program, but will ask for input, as needed, from property owners, local governments, and the Chehalis Basin Board.

Chehalis River Basin Flood Control Zone District (FCZD) plan for continued analysis of potential for FRE avoidance, minimization, mitigation (AMM)

Jim Waldo (consultant to Flood Control Zone District) provided an update on the FCZD's plan for continued analysis of the potential for avoidance, minimization, and mitigation (AMM) of the proposed flood retention facility in response to Governor Inslee's letter. Efforts taken to-date by the FCZD regarding AMM include (1) reviewing the project configuration, including eliminating the bump-out at the Chehalis Airport and eliminating one of the quarry area candidates, (2) refining the proposed construction phase sequencing to avoid and minimize impacts and identify best management practices to control effects of construction activities, and (3) avoiding burning of vegetation during reservoir preparation.

Ongoing AMM efforts include:

- Additional assessment to determine potential aquatic species/habitat mitigation benefits by species/location and capacity to mitigate higher levels of impact
- Additional review of existing geo-technical report to assess mitigation opportunities regarding slope stabilization within temporary storage reservoir site
- Review of operational procedures to assess linkage with aquatic and cultural impacts near Rainbow Falls/Fisk Falls
- Analyze opportunities for construction phase fish passage
- Prepare a cross indexed list of all measures proposed by the District to the resources affected and impacts addressed
- Analyze opportunities to minimize water temperature impacts
- Determine if an adaptive vegetation management approach will minimize temperature impacts

Lisa Danielski (HDR) reviewed the conceptual Vegetation Management Plan, which includes six key elements:

1. More detailed mapping of vegetation communities in FRE temporary reservoir area
2. More detailed analysis of flood frequency, flow and inundation duration
3. Inundation mapping based on flood frequency and storage duration
4. Defining inundation zones (i.e., reservoir evacuation zones)
5. Overlay of proposed inundation zones on vegetation mapping to assess impacts to vegetation
6. Conceptual selective tree harvest and vegetation replanting plan during construction and operation, and adaptive management plan

The vegetation management approach includes:

- Selective Tree Harvest/re-vegetation during construction to minimize loss of shading
    - Tree removal and re-vegetation optimized for each inundation zone
    - Inventory of replacement vegetation species based on inundation tolerance
    - Focus on shading along water courses
- Develop Adaptive Management Goals/Objectives to maintain shading
- Monitoring, vegetation replacement, and implementation of contingency measures in response to FRE facility operations

Next steps regarding the vegetation management plan include:

- Provide briefings on plan development and contents to those who are interested
- Consult with Ecology, WDFW, DNR, USACE and Tribes regarding water quality modeling
- Conduct additional water quality model simulations that integrate vegetation composition scenarios based on the Conceptual VMP

Below is a link to the presentation materials:

- Flood Damage Reduction Project presentation

Key comments and discussion topics included:

- Board members are interested in knowing how many miles each of the vegetation flood tolerance areas represent.
- Board members were reminded that flooding frequency has not yet been addressed yet as part of the FCZD flooding tolerance assessment.
- The FCZD expressed interest in working with DNR to consult on permitting and operational considerations.

Next Steps and Closing

Jim Kramer (Facilitator) reminded the Board of the regularly scheduled Board meeting on November 5, 2020.

Attachment A

Board Staff/Board Guests:

- Andrea McNamara Doyle, Washington Department of Ecology, Director, Office of Chehalis Basin
- Betsy Dillin, Lewis County
- Brian Stewart, Conservation Northwest
- Carson Coates, Office of Congresswoman Jaime Herrera Beutler
- Celina Abercrombie, Department of Fish and Wildlife
- Chrissy Bailey, Department of Ecology, Office of Chehalis Basin
- Cindy Bradley, Department of Ecology, Office of Chehalis Basin
- Claudia Yaw
- Colleen Granberg, Department of Natural Resources
- Cynthia Carlstad, NHC
- Dave Bingaman, Quinault Indian Nation, ASRP Steering Committee
- Diane Butorac, Department of Ecology
- Emelie McKain, Department of Fish and Wildlife
- Erik Martin, Chehalis River Basin Flood Control Zone District
- Gordon White, Department of Ecology
- Guillaume Mauger, UW Climate Impacts Group
- Heather Page, Anchor QEA
- Jennifer Hennessey, Governor's Office
- Jessica Helsley, Wild Salmon Center
- Jim Kramer, Kramer Consulting (Facilitator)
- Jim Waldo, Consultant to Flood Control Zone District
- John Robinson, Consultant to Flood Control Zone District
- Ken Ghalambor, Ross Strategic
- Kim Marcotte, Anchor QEA
- Kirsten Harma, Chehalis Basin Lead Entity
- Kris Koski, City of Aberdeen
- Lara McRea, Lewis County
- Larry Karpack, Watershed Science and Engineering
- Lisa Danielski, HDR
- Mark Glyde, Quinault Indian nation
- Merri Martz, Anchor QEA
- Nicole Czarnomski, Department of Fish and Wildlife, ASRP Steering Committee
- Ron Averill, City of Centralia, Chehalis River Basin Flood Authority
- Rona Spellecacy, HDR
- Scott Boettcher, Staff to Chehalis River Basin Flood Authority
- Teri Wright, Orca Conservancy
- Tom Gorman, Department of Natural Resources
- Trent Lougheed, City of Chehalis