CHEHALIS BASIN BOARD MEETING

LONG-TERM STRATEGY PATHWAYS AND 2021-23 BUDGET PLANNING

APRIL 1, 2021

DEPARTMENT OF ECOLOGY
State of Washington
OFFICE OF CHEHALIS BASIN

PRESENTATION OBJECTIVES

Objectives

- Update on preparation of work plans & budget options for 2021-23 biennium
- Receive additional Board direction for refining some major work elements
  - Local area structural flood damage reduction options
  - Focus for flood events and damage
  - Aquatic Species Restoration Plan (ASRP) messaging
  - Integrating habitat, harvest, hatchery, hydro, and predation management

BOARD DECISIONS FROM MARCH 4 MEETING

- Agree that additional information is needed to determine what combination of actions can meet the Board's outcomes for flood damage reduction
- Support the process to recommend 2021-2023 funding allocations and project lists by June 3, 2021
- Support development of scopes/budgets for crosscutting, flood damage reduction, and aquatic species habitat restoration elements to inform 2021-23 budget recommendations

BOARD APPROVED PATHWAYS FOR DEVELOPING 2021–23 BUDGET RECOMMENDATION OPTIONS

- Crosscutting/Integrated Work
- Flood Damage Reduction Actions
- Aquatic Species Habitat Restoration Actions

Crosscutting/Integrated Work (Projects and Analyses Advancing the Integration of Flood Damage Reduction & Habitat Restoration Objectives)

- Skookumchuck Dam Analysis
- Erosion Management Guidance & Pilot Project Development
- Floodplain Acquisition Program Design
- Floodplain Mapping and Modeling
- Land Use Recommendations & Guidance
- Community Outreach/Engagement

Aquatic Species Habitat Restoration

- Restoration projects
  - Reach-scale project design/construction
  - Non reach-scale project design/construction (amphibian focused, barriers)
  - Ramp-up capacity (project development efforts)
- High quality/unique habitat acquisition projects
- Implementation support
  - Sourcing project materials
  - Ramp-up capacity (Local implementation teams and project design review)
  - Monitoring and adaptive management

Flood Damage Reduction

- Flood Control Zone District Flood Damage Reduction Project
- Flood Authority Projects
- North Shore Levee Project
- Other Structural Flood Protection Evaluations
- Community Flood Assistance & Resilience (CFAR)
  - Technical and financial assistance to local governments, tribes & landowners

CROSSCUTTING/INTEGRATED WORK

Projects and Analyses Advancing the Integration of Flood Damage Reduction & Habitat Restoration Objectives

- Skookumchuck Dam Analysis
- Erosion Management Guidance & Pilot Project Development
- Floodplain Acquisition Program Design
- Floodplain Mapping and Modeling
- Land Use Recommendations & Guidance
- Community Outreach/Engagement

AQUATIC SPECIES HABITAT RESTORATION

- Restoration projects
  - Reach-scale project design/construction
  - Non reach-scale project design/construction (amphibian focused, barriers)
  - Ramp-up capacity (project development efforts)
- High quality/unique habitat acquisition projects
- Implementation support
  - Sourcing project materials
  - Ramp-up capacity (Local implementation teams and project design review)
  - Monitoring and adaptive management

FLOOD DAMAGE REDUCTION

- Flood Control Zone District Flood Damage Reduction Project
- Flood Authority Projects
- North Shore Levee Project
- Other Structural Flood Protection Evaluations
- Community Flood Assistance & Resilience (CFAR)
  - Technical and financial assistance to local governments, tribes & landowners

ANALYSIS OF FLOOD DAMAGE REDUCTION ACTIONS

- Current information is not sufficient at this time to determine if suite of actions, with or without a dam, can meet the Board outcomes
- Additional information is needed over the next biennium to provide the information needed by the Board

- *Information from crosscutting and flood damage reduction categories will be used to determine if a suite of actions, with or without flood retention facility, can achieve the Board's preferred flood damage reduction outcomes*

ADDITIONAL BOARD DIRECTION NEEDED

Guidance needed to refine preparation of work plans/budget options for:

- Local area structural flood damage reduction options
- Focus for flood events and damage
- Aquatic Species Restoration Plan (ASRP) messaging
- Integrating habitat, harvest, hatchery, hydro, and predation management

LOCAL AREA STRUCTURAL FLOOD DAMAGE REDUCTION OPTIONS

LOCAL ACTIONS PROGRAM REPORT

PLAN B: The Local Actions work began after Board members asked for a "Plan B" to water retention for significant basin-wide flood damage reduction

BOARD OBJECTIVES/OUTCOMES: The objective of the intense work of the OCB and Local Actions Program Advisory Groups since August has been to determine if there are a set of options that could meet the desired outcomes set by the Board for a basin-wide flood damage reduction alternative

OPTIONS: One of the options is constructing levees

POTENTIAL PATHWAYS FOR 2021-23

Local Actions Program Advisory Groups formed by OCB in fall 2020 reviewed prior studies and reports, looking at dozens of alternatives for Chehalis Basin flood damage reduction. Out of this work came the following recommendation:

- Evaluate **frequency and sources of flooding and types of levee structures at 14 potential priority areas** that could potentially be candidates for structural protection through levees.
- The evaluation will require identifying existing and long-range land use, zoning, buildout, economic development and social justice considerations for jurisdictions, costs, added hydraulic modelling and overall feasibility.

PREVIOUS LEVEE EVALUATIONS

- I-5 Corridor, Centralia, Chehalis
  - USACE study 2003 – Authorized in 2007
  - USACE re-evaluation of authorized project after 2007 and 2009 floods; study was terminated in 2012
  - WSDOT evaluated a levee and floodwall protection alternative in 2014; 5 mile stretch of I-5 from 13thStreet to Mellen Street
- Basin-wide Projects Considered
  - Chehalis Basin Flood Hazard Mitigation Alternatives Report (Ruckelshaus Center 2012)
  - Scenario of Small Flood Damage Reduction Projects (HDR and WSE 2014)
- Continuing Flood Authority funding for projects

QUESTIONS RAISED ABOUT LEVEE OPTIONS

- Board member concerns about continuing to evaluate structural flood damage reduction options (besides the FRE, North Shore Levee, and Airport Levee). Reasons included:
  - Flood Authority has solicited projects to protect communities and infrastructure since 2008, and local governments have proposed no new levee projects
    - (Other than North Shore Levee and West Segment)
  - USACE levee I-5 proposal was shelved as it did not have a positive benefit
  - WSDOT put their study on hold for this process and have recently expressed reservation about I-5 walls and levees project effectiveness in future climate change scenarios

WHERE COULD LEVEES WORK?

Pros

- Could address areas not protected by FRE or North Shore Levee
- Could address smaller geographic areas or on tributaries

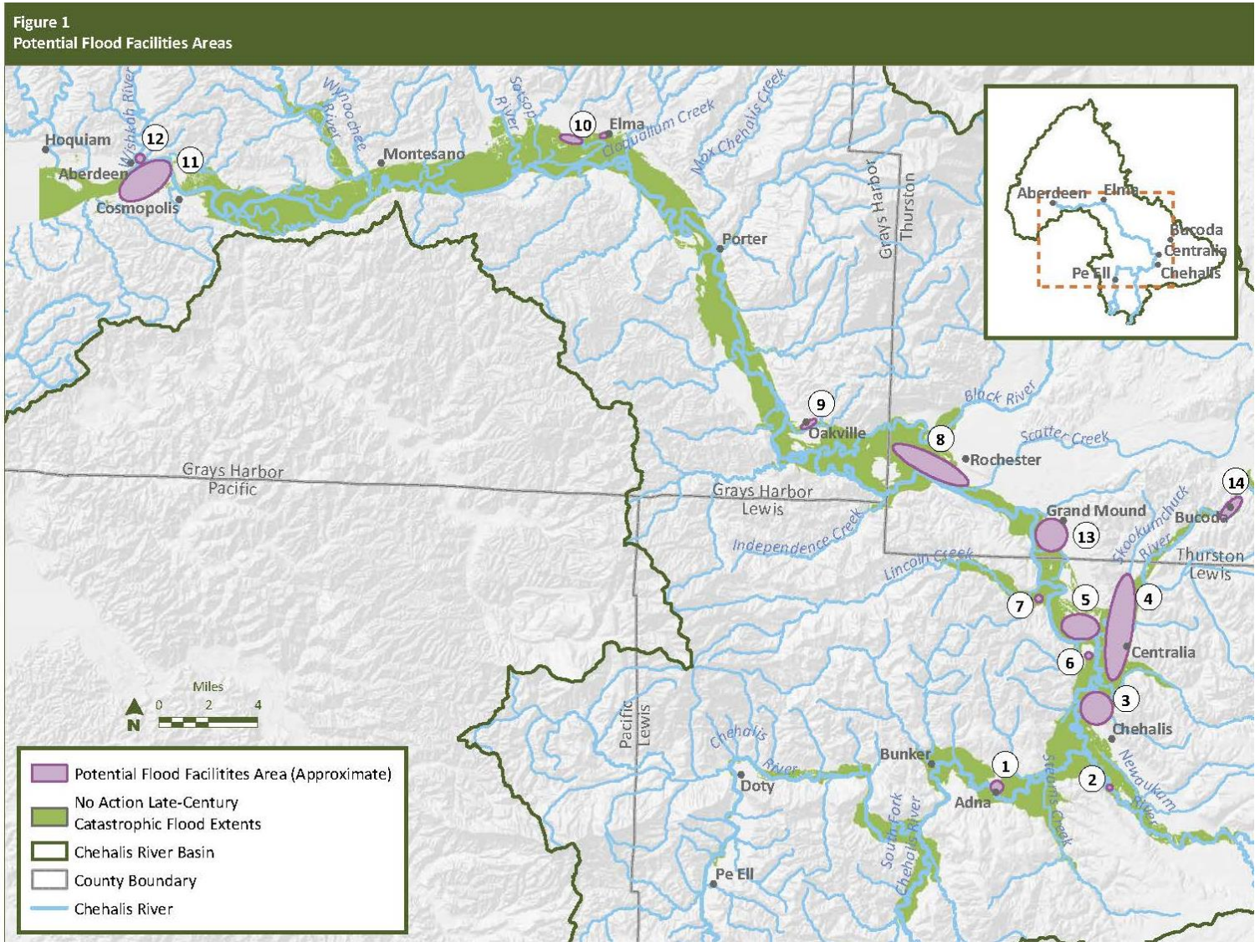
Cons

- Not likely to be effective at addressing mainstem catastrophic flooding
- Can be complicated to design a cost-effective alignment and elevation and adequately avoid or mitigate for any potential water surface elevation rise that could occur downstream or upstream from the levee

INITIAL AREAS IDENTIFIED BY ADVISORY GROUPS FOR STRUCTURAL FLOOD PROTECTION CONSIDERATION

1. Adna
2. Lower Newaukum
3. Airport Levee/Chehalis
4. Centralia
5. West Centralia
6. Military Road
7. Galvin
8. Independence Road and north floodplain
9. Oakville
10. Elma (south and west, Monte-Elma Road)
11. South Aberdeen Levee Area
12. East Aberdeen
13. Grand Mound
14. Bucoda

DEPARTMENT OF ECOLOGY
State of Washington
OFFICE OF CHEHALIS BASIN



REFINED LOCATIONS FOR CONSIDERATION

- **Skookumchuck River** – not addressed by FRE; potential to address flooding in areas of dense development along with habitat improvements
- **Newaukum River / Dillenbaugh Creek** – not substantially addressed by FRE; further increased flood risk in late century high-end climate change scenario
- **Elma and other Lower Chehalis basin areas** – minor benefit from FRE; potential to address road closures and flooding in specific local areas from Chehalis or tributaries
- **South Aberdeen** – not addressed by FRE; potential to address existing drainage problems and future sea-level rise along with habitat improvements

QUESTIONS FOR BOARD

- Should the local area structural flood damage reduction (levee) options be evaluated with and without the potential FRE?

- Do you want OCB staff to engage with local jurisdictions about their interest in a levee project in their area including confirming level of interest in either a with- or without-FRE scenario?

FOCUS FOR FLOOD EVENTS AND DAMAGE

FOCUS FOR FLOOD EVENTS AND DAMAGE

- Board direction to evaluate 2080 flood estimates for 26 and 50 percent increases in flows from climate change
- Issues have been raised about the ability to feasibly address future flows by some alternatives
- Technical Advisory Group provided additional recommendations to look at damage from more frequent events
- Board member questions about why OCB would look at damage from smaller or more frequent flood events

FOCUS FOR FLOOD EVENTS AND DAMAGE

- Technical Advisory Group noted there are multiple flood hazard conditions within the basin, which can occur at various flood flows (magnitude, frequency, and duration), each being location specific
- Some **transportation routes** may be inundated by lower magnitude, higher frequency flood events
- **Erosion hazards** are more appropriately evaluated under more frequently recurring, lower flood conditions
- **Urban stormwater & nuisance flooding** generally associated with lower flood events (2 year, 10 year, etc)

POTENTIAL OPTIONS MOVING FORWARD

- Conduct additional analyses to look at flood damage from more frequent events, focusing on:
  - Erosion hazards
  - Transportation closures that may occur during smaller flood events which could be more easily addressed than 2080 catastrophic flood levels

AQUATIC SPECIES RESTORATION PLAN MESSAGING

INTEGRATING HABITAT, HARVEST, HATCHERY, HYDRO, AND PREDATION MANAGEMENT

HABITAT, HARVEST, HATCHERIES, HYDRO, PREDATION

- Previous Board discussion of issues
- Acknowledgement that actions need to be well integrated to increase the success of ASRP
- Management of harvest and hatcheries are legal responsibility of WDFW and tribes within complex state, federal and international requirements and processes
- Puget Sound Chinook Recovery Plan and the Lower Columbia Conservation and Sustainable Fisheries Plan are examples of integrated plans

DRAFT CONCEPT FOR INTEGRATION

Components

- Habitat: completion of the ASRP to set the goals, actions and measures for assessing success for salmonid populations as the plan is implemented.
- Harvest: Continued efforts by WDFW and Tribes to ensure harvest supports conservation of fisheries and surplus for harvest.
- Hatcheries: Updated to ensure implementation in a manner that is consistent with the goals of ASRP

DRAFT CONCEPT (CONT.)

Components:

- Hydro: OCB, with WDFW and tribal support, consult with owners of hydropower facilities and other dams and explore ways to better manage, mitigate, or otherwise reduce impacts from existing dam projects
- Predation: assess impacts and determine appropriate strategies
- All H and Predation Plan: Potentially develop plan similar to Lower Columbia
- Communication: Additional communication with Board and basin communities.

POTENTIAL OPTIONS MOVING FORWARD

Does the Board support development of a workplan and budget to support work by WDFW, the tribes and OCB to advance integrated management of habitat, harvest, hatcheries, hydropower and predation?