

# MEMORANDUM

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**Date:** October 1, 2020  
**To:** Chehalis Basin Board  
**From:** Andrea McNamara Doyle, OCB Director  
**Re:** FINAL Outcomes for Evaluating Flood Damage Reduction from Local Actions Program

This memorandum reflects the final version of the planning assumptions and outcomes the Chehalis Basin Board approved on September 30, 2020, to guide the development and evaluation of a comprehensive, basin wide local actions program for addressing flood damage in the Chehalis Basin.

## CONTEXT

The Chehalis Basin Board by March 30, 2021 will evaluate the potential for local actions to reduce flood damage, with or without a proposed flood retention facility. The planning assumptions and outcomes below will be used by the Office of Chehalis Basin staff and consultants, the Technical Advisory and Implementation Advisory Groups, along with input from tribes, stakeholders, and interested members of the public to identify and analyze local action options for the Board's consideration. The Board will use these outcomes to evaluate the potential magnitude of flood damage that can be reduced, over what timeframe, and at what cost, as well as the implications on other Board objectives.

For some of the outcomes below, percentages are proposed to measure the desired results, but placeholders are included rather than specific percentage targets. This is because, at this time, the Board does not yet have sufficient information to weigh the cost, benefits and implications for achieving a particular percentage reduction of different types of flood damage. By approving these outcomes, the Board is agreeing on **what** results should be evaluated and measured, and is not establishing an absolute design or performance standard that must be met for a particular action to be included as part of the local actions program. As more information becomes available regarding the technical, operational, and economic feasibility of different actions between now and March 30, 2021, the Board will revisit what percentage reductions are appropriate to use as a measure of success for particular outcomes. In the meantime, the approved outcomes will help focus attention on the types and locations of actions needed to effect these measures. The outcomes will also help the Board optimize the combinations of actions to achieve the best overall results for reducing flood damage while supporting other community values and restoring the natural environment.

## PLANNING ASSUMPTIONS

### 1. TIMEFRAME FOR PLANNING

The Local Actions Program will consider a timeframe of up to 30 years to implement the actions necessary to achieve the draft outcomes outlined below, while recognizing that different actions may take longer or shorter to implement and that there will need to be synergy between implementation of the Local Actions Program and Aquatic Species Restoration Plan.

### 2. FUTURE FLOOD CONDITIONS

The Local Actions Program will plan for the 100-year flood conditions that are predicted for 2080 when considering outcomes and actions to include in the program.<sup>1</sup>

### 3. BASIN-WIDE COORDINATION

The Local Actions Program will require any projects funded through the program to be designed, implemented, and mitigated to avoid making flood damage worse in other areas.

## OUTCOMES

The Board will use the following measurable flood damage reduction outcomes to guide the development of a Local Actions Program and the Board's evaluation of what can feasibly be achieved within a timeframe of up to a 30 years.<sup>2</sup>

### 1. VALUABLE STRUCTURES PROTECTED FROM MAINSTEM, CATASTROPHIC FLOODING

X percent of all structures in each county that could be flooded by the 2080 predicted 100-year flood levels in the basin would no longer be vulnerable to flood damage, because they are protected by localized infrastructure, flood-proofed/elevated, or the structure has been removed.

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<sup>1</sup> With the assistance of the Technical Advisory Group, the predicted 2080 flood conditions will be described in relation to the existing 100-year floodplains and historic floods of record for different parts of the basin. Local flood damage reduction projects implemented through the Chehalis River Basin Flood Authority are not subject to this recommendation and are expected to continue planning for and addressing different kinds of current and future flood damage risks.

<sup>2</sup> Through information considered by technical and implementation advisory groups over the next several months, the Board will consider the magnitude of any measurable flood damage reduction outcomes based on an understanding of the level of effort and estimated costs needed to achieve results.

## **2. HOMES & BUSINESSES PROTECTED FROM SEASONAL URBAN FLOODING**

Municipal stormwater systems in all basin cities and towns would be capable of adequately accommodating stormwater runoff levels and protecting homes and businesses from seasonal flood damage.

## **3. LOWER BASIN PROPERTIES & BUSINESSES PROTECTED FROM COASTAL STORM SURGES**

The Cities of Aberdeen and Hoquiam will complete:

- Construction and certification of the North Shore Levee and obtain a letter of map revision removing at least 3,100 properties and 990 businesses from the FEMA Special Flood Hazard Area designation.
- Construction and certification of the North Shore Levee West Segment and obtain a letter of map revision removing at least 2,000 properties and 360 businesses from the FEMA Special Flood Hazard Area designation.

## **4. FARMLAND AND RURAL STRUCTURES PROTECTED**

4.A. 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.

4.B. Protective measures prevent flood damage from increasing above the damage to commercial agricultural operations that occurred in the 1990 flood, while protecting ecological processes.

## **5. CRITICAL FACILITIES PROTECTED**

X percent of all critical facilities that could be flooded by 2080 predicted 100-year flood levels would no longer be vulnerable to flood damage, because they are protected by localized infrastructure, elevated/flood-proofed, or relocated.

## **6. TRANSPORTATION ROUTES PROTECTED**

6.A. A substantial reduction in the overtopping and closure of I-5 and the BNSF rail mainline would be achieved for 2080 predicted 100-year flood levels, and alternative routes would be available to minimize negative effects of closures on freight mobility and commerce.

6.B. Key county and city intersections and interchanges would not be closed due to flooding, and for flood events that result in short-term closures, alternative routes would be available to ensure emergency services are not interrupted.

6.C. A substantial reduction in the closures of State Highways 6 and 12 due to flooding would be achieved, and alternative routes would be available to ensure emergency services are not interrupted and to minimize negative effects of closures on freight mobility and commerce.

## **7. ENVIRONMENTAL JUSTICE ADVANCED**

Communities with environmental justice concerns would suffer less hardship and damage from flooding, would not be economically disadvantaged by displacement or otherwise disproportionately adversely affected by actions to reduce flood damage, and would be improved by flood solutions.

## **8. PREVENT NEW AT-RISK DEVELOPMENT**

No new structures would have been developed that are vulnerable to channel erosion or mainstem or tributary flooding from 2080 predicted 100-year flood levels, because all basin local governments have adopted model floodplain management ordinances that exceed the State and National Flood Insurance Programs' minimum requirements; all local government construction and building code standards support flood damage risk reduction through measures such as subdivision set-asides, filling restrictions, freeboard height of new buildings, critical facility placement and protection, and non-conversion agreements; and incentives direct future development out of harm's way.