

CHEHALIS BASIN STRATEGY

*REDUCING FLOOD DAMAGE AND
ENHANCING AQUATIC SPECIES*

LEGISLATIVE BRIEFING
FEBRUARY 26, 2014



CHALLENGE: HISTORY OF FLOOD DAMAGE



March 1910



December 1933



January 1974



November 1990

2007 STORM: \$938M BASIN-WIDE DAMAGE



Exit 77 (I-5) in Chehalis
STEVE RINGMAN / SEATTLE TIMES



City of Centralia
STEVE RINGMAN / SEATTLE TIMES



**State Route 6,
West of Adna**
MIKE SALSBURY /
AP



← Photos Source: LEWIS COUNTY,
DIVISION OF EMERGENCY
MANAGEMENT ↑

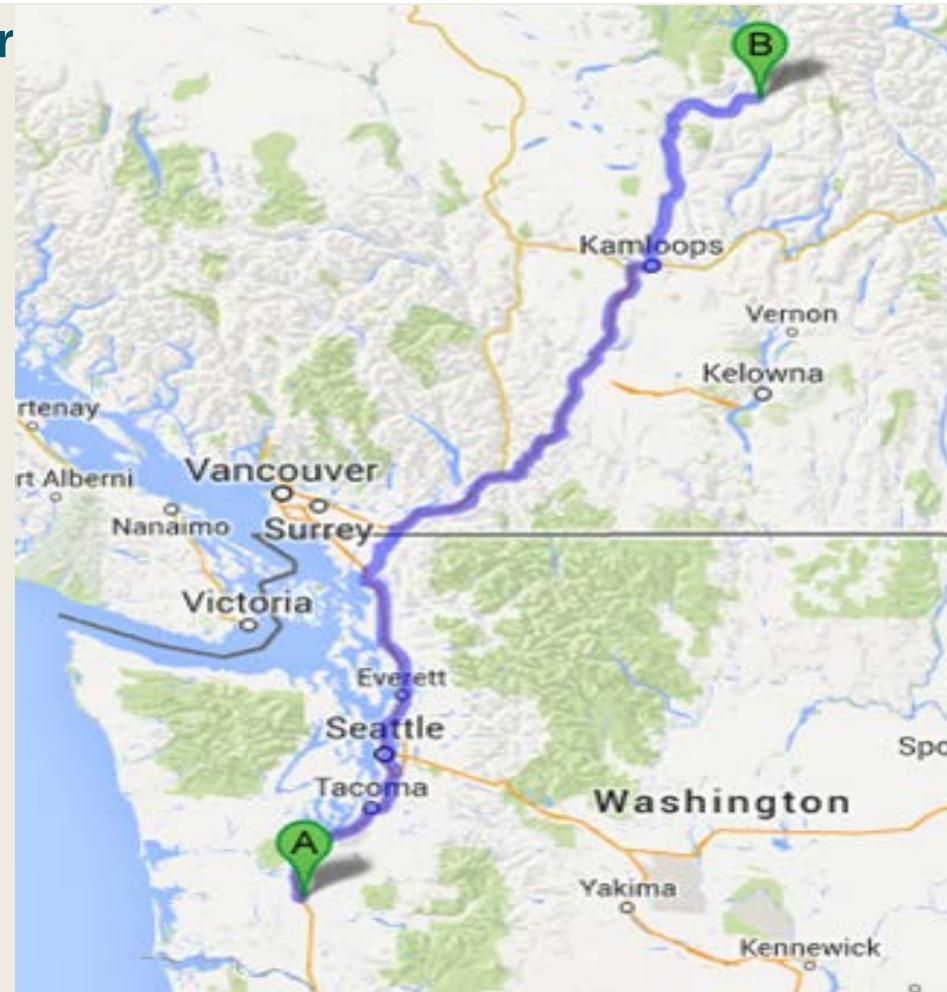
2007 FLOOD: I-5 & HWY 507 INTERCHANGE

**City of Centralia
and I-5
STEVE RINGMAN /
SEATTLE TIMES**



2007 FLOOD: HOW MUCH WATER?

- 289,983 acre feet of measured water (12/03-08/2007).
- Equivalent to covering roadway between Chehalis and North of Kamloops with 1 foot of water or similarly covering . . .
 - 80% of Kitsap County.
 - 69% of Clark County.
 - 59% of Thurston County.

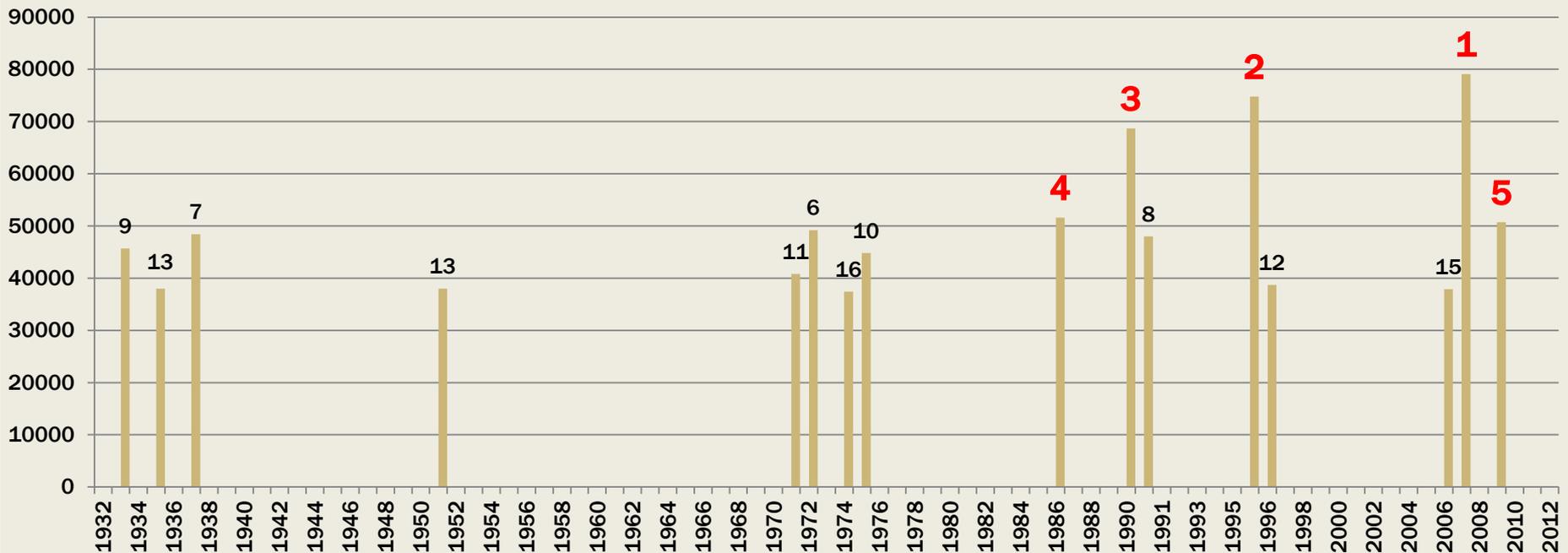


RANKED HIGH-FLOW EVENTS:

CHEHALIS RIVER FLOW RATES NEAR GRAND MOUND (CUBIC FT./SEC.)

☐ I-5 closed 1990, 1996, 2007, 2009

☐ Five largest events since 1986 – *Frequent floods are getting worse and damage is increasing . . .*



CHALLENGE: NEED FOR FISHERY ENHANCEMENT

- Salmon populations are 15-25% of historic levels.
- Water quality is seasonally poor.



Upper Chehalis (5/31/2010)
JAMES E. WILCOX / WILD GAME FISH
CONSERVATION INTERNATIONAL

CHEHALIS BASIN SALMON & TROUT

OCEAN PHASE

The salmonid lifecycle involves adults maturing in the ocean, migrating back to their home streams and spawning, embryos incubating, fry emerging, juveniles growing, and smolts migrating to the estuary to acclimate to saltwater and moving out into the ocean

WHAT SALMON NEED IN FRESHWATER HABITAT

- Cool, clean water
- Appropriate water depth, quantity and flow velocities
- Upland and riparian (stream bank) vegetation to stabilize soil & provide shade
- Clean gravel for spawning and egg-rearing
- Large woody debris to provide resting and hiding places
- Adequate food
- Varied channel forms

SPAawning PHASE

Chinook
Oncorhynchus tshawytscha
Also known as King, Silver Salmon
Average size: 26-37" (11 lbs. up to 55 lbs. Full grown, 2-4 years, 8 months run

Coho
Oncorhynchus kisutch
Average size: 20-27" (10 lbs. up to 35 lbs. Full grown, 2-3 years, 4 months run

Chum
Oncorhynchus keta
Average size: 20-30" (10 lbs. up to 35 lbs. Full grown, 2-3 years, 4 months run

Sockeye
Oncorhynchus nerka
Average size: 20-27" (10 lbs. up to 35 lbs. Full grown, 2-3 years, 4 months run

Steelhead
Oncorhynchus mykiss
Average size: 20-30" (10 lbs. up to 35 lbs. Full grown, 2-3 years, 4 months run

Salmon
Average size: 20-27" (10 lbs. up to 35 lbs. Full grown, 2-3 years, 4 months run

Trout
Average size: 20-27" (10 lbs. up to 35 lbs. Full grown, 2-3 years, 4 months run

www.chehalisbasinpartnership.org



CHANGING THE LONG HISTORY POLITICAL FAILURE

- No action since 1933.
- More than 830 studies.
- Today is different . . .

Aquatic
Species
Surveys,
2013



Adna Levee, 2013

CHEHALIS RIVER BASIN FLOOD AUTHORITY

City of Montesano
Home of the Tree Farm
www.montesano.ca

Another Chehalis Basin Flood Protection Project
www.ezview.wa.gov

Wastewater Treatment Plant Flood Prevention Dike

Schedule → February 2014 to April 2014

Budget → \$511,153

Benefit → Protecting essential public infrastructure for all Basin residents

STELLAR J
An engineering, architectural, planning
Parametrix

Montesano WWTP, 2014



Airport Levee, 2014

RUCKELSHAUS CENTER REPORT

- Required by 2011 Legislature.
- Summarized what is known about potential projects.
- Created a common base of understanding.

<http://ruckelshauscenter.wsu.edu/ChehalisFlooding.html>

The screenshot shows the website for the William D. Ruckelshaus Center at the University of Washington. The page features a navigation menu on the left with links for Home, I Want to Give, Contact Us, About Us, Services, Project Criteria, Projects, Publications, and News/Media. The main content area is titled "Chehalis Flooding" and includes sections for "Upcoming Policy Workshop" and "Project Description". The "Upcoming Policy Workshop" section states that the workshop will be held on November 13, 2013, from 8:30am to 4:30pm at the Great Wolf Lodge in Centralia, WA, and is open to the public. The "Project Description" section notes that the Chehalis Basin has repeatedly flooded over the past decades, with seven major floods in the past 30 years alone, including a 2007 flood that caused over \$900 million in damages and a 2010-11 flood that closed Interstate 5 and a major rail line for days. On the right side of the page, there is a "Documents and Resources" section with links to the "January 2014 Chehalis Basin Strategy" (2 MB PDF) and the "November 13 policy workshop slide deck" (12 MB PDF). There is also a link to the "Chehalis Basin Strategy Overview for 2013-2015" (437 KB PDF).

CHEHALIS RIVER BASIN FLOOD AUTHORITY

- ▶ Grays Harbor County
- ▶ City of Aberdeen
- ▶ City of Cosmopolis
- ▶ City of Montesano
- ▶ City of Oakville
- ▶ Lewis County
- ▶ City of Centralia
- ▶ City of Chehalis
- ▶ City of Napavine
- ▶ Town of Pe Ell
- ▶ Thurston County
- ▶ Town of Bucoda



GOVERNOR'S CHEHALIS BASIN WORK GROUP

- Appointed by Gov. Gregoire (2012); Re-confirmed by Gov. Inslee (2013).
- Developed Next Steps Framework, \$28.2 capital budget request (2013-15).
- Tasked by Governor to oversee budget and recommend next steps for water retention; I-5; Other Basin improvements; Aquatic species enhancement.
- Members are:
 - David Burnett (Chairman Chehalis Tribe).
 - Karen Valenzuela (Thurston County Commissioner, Vice-Chair Flood Authority).
 - Vickie Raines (Mayor Cosmopolis, Chair Flood Authority).
 - J. Vander Stoep (Private Attorney, Pe Ell Alternate Flood Authority).
 - Jay Gordon (President Washington Dairy Federation and Chehalis Farmer).
 - Sandi Triggs (Capital Budget Advisor to Governor).
 - Keith Phillips (Governor's Energy and Environment Advisor).

FORGING A BASIN-WIDE STRATEGY

Local, tribal, state and federal governments working together over this year to create the long-term strategy and implementing solution.

2013-15 STATE BUDGET

1. Design alternatives for large capital flood projects (basin-level water retention, local projects, and Interstate 5 protection).	\$9,200,000
2. Construct priority local flood protection projects.	\$10,742,000
3. Construct local multipurpose projects that reduce flood damage and benefit fish, create aquatic species enhancement plan.	\$4,350,000
4. Enhance land use management and reduce damages to residential and other structures in the floodplain.	\$1,750,000
5. State agency technical assistance, public process and project management.	\$2,160,000
TOTAL →	\$28,202,000

Contracts have been issued for the majority of the funds. Local contribution since 2007 is over \$16M.

CURRENT PROJECTS UNDERWAY IN THE CHEHALIS BASIN

GRAYS HARBOR COUNTY

1. Burger King Trail/Dike
2. Dike Bank of Wishkah North of Highway
3. Market Street Dike
4. Southside Dike/Levee Certification
5. Oxbow Lake Reconnection
6. Sickman-Ford Overflow Bridge
7. Mill Creek Dam Improvement
8. Elma-Porter Flood Mitigation
9. Satsop River Floodplain Restoration (Phase I)
10. Wishkah Road Flood Levee
11. Revetment for Montesano Road, Sewage Treatment
12. Satsop River Floodplain Restoration (Phase II)

BASIN-WIDE PROJECTS

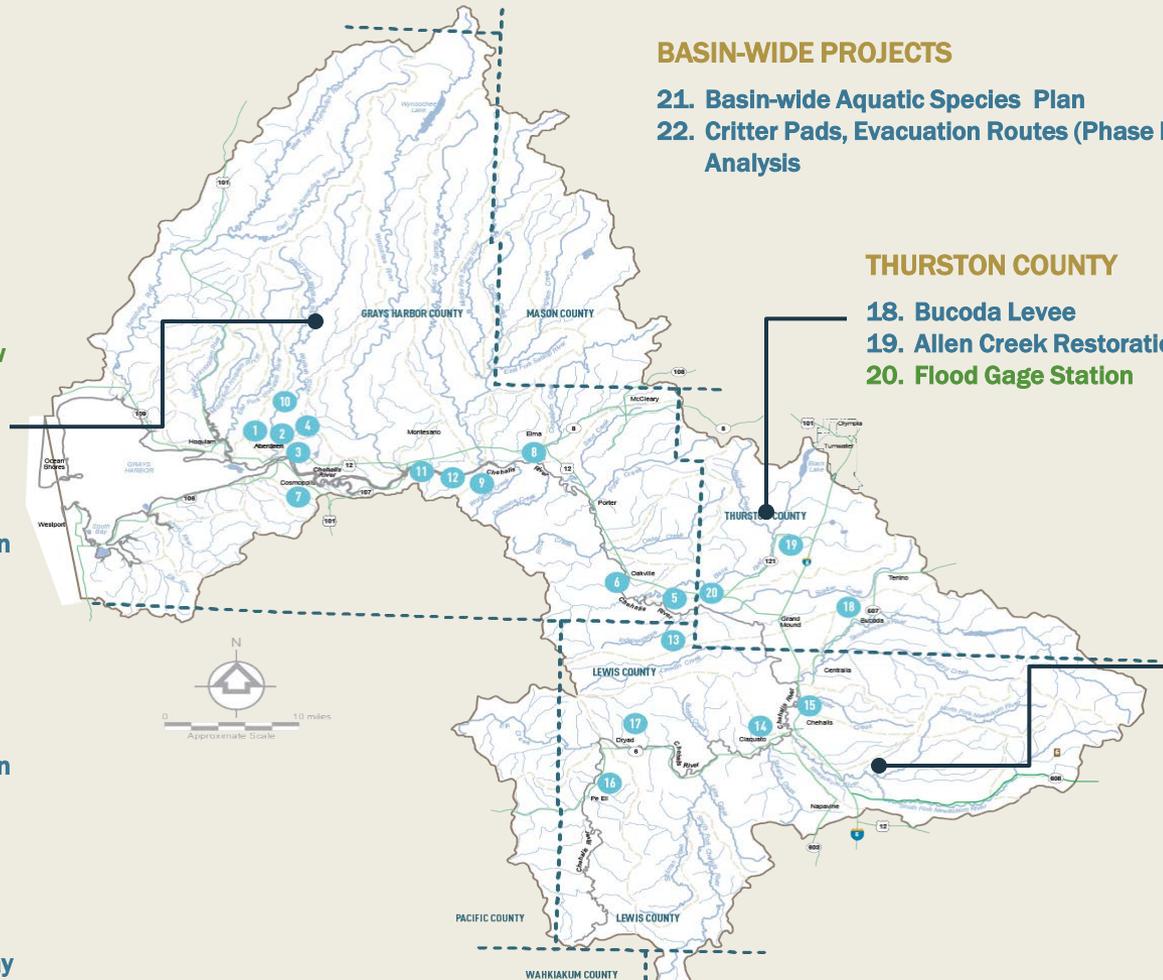
21. Basin-wide Aquatic Species Plan
22. Critter Pads, Evacuation Routes (Phase II) and Geomorphic Analysis

THURSTON COUNTY

18. Bucoda Levee
19. Allen Creek Restoration
20. Flood Gage Station

LEWIS COUNTY

13. Oxbow Reconnection at RM 78
14. Adna Levee
15. Airport Levee (Phase I)
16. Wastewater Treatment Plant Flood Prevention
17. Critter Pads, Evacuation Routes (Phase I)



STATUS: **Finished** / Underway

2/26/2014

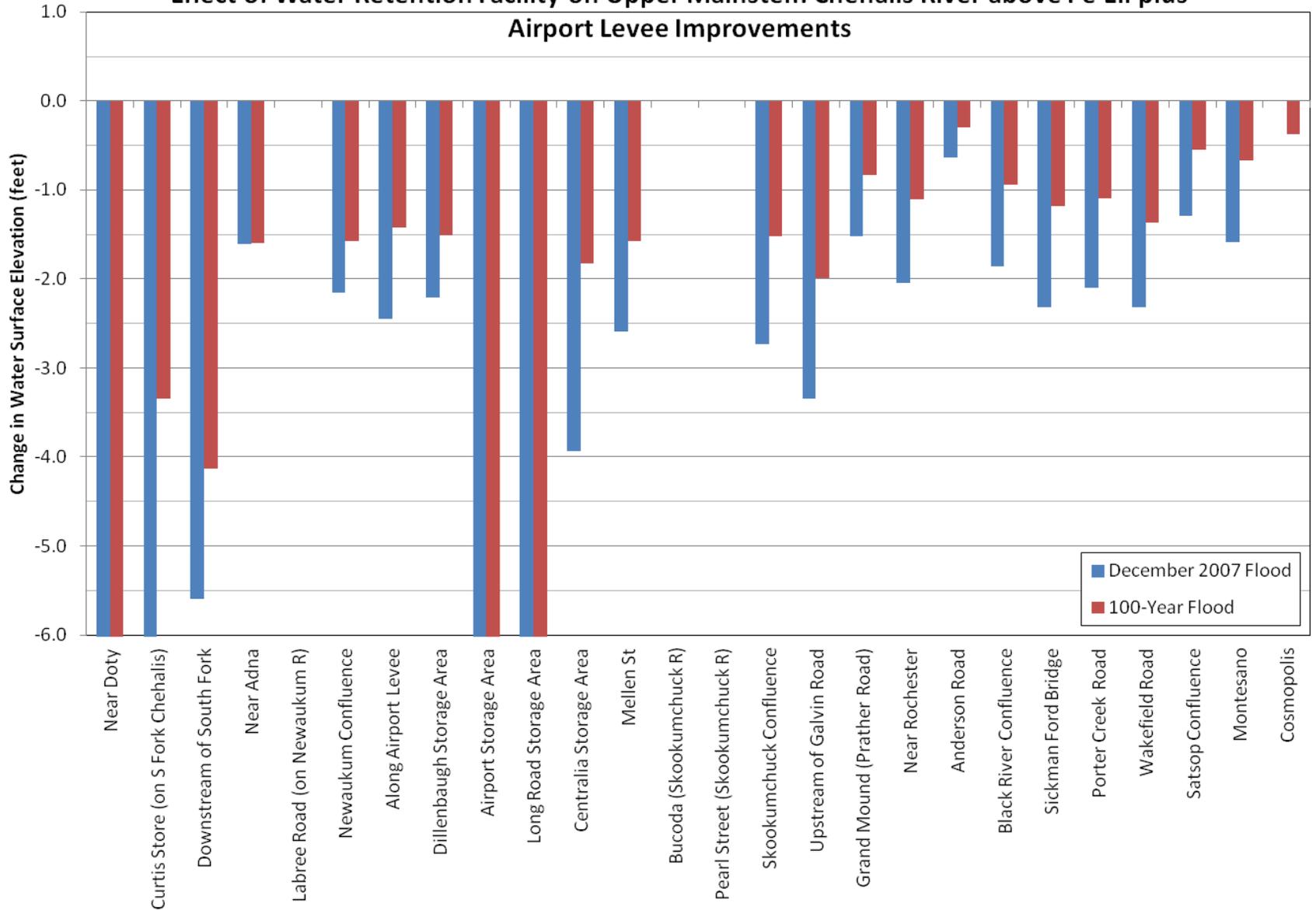
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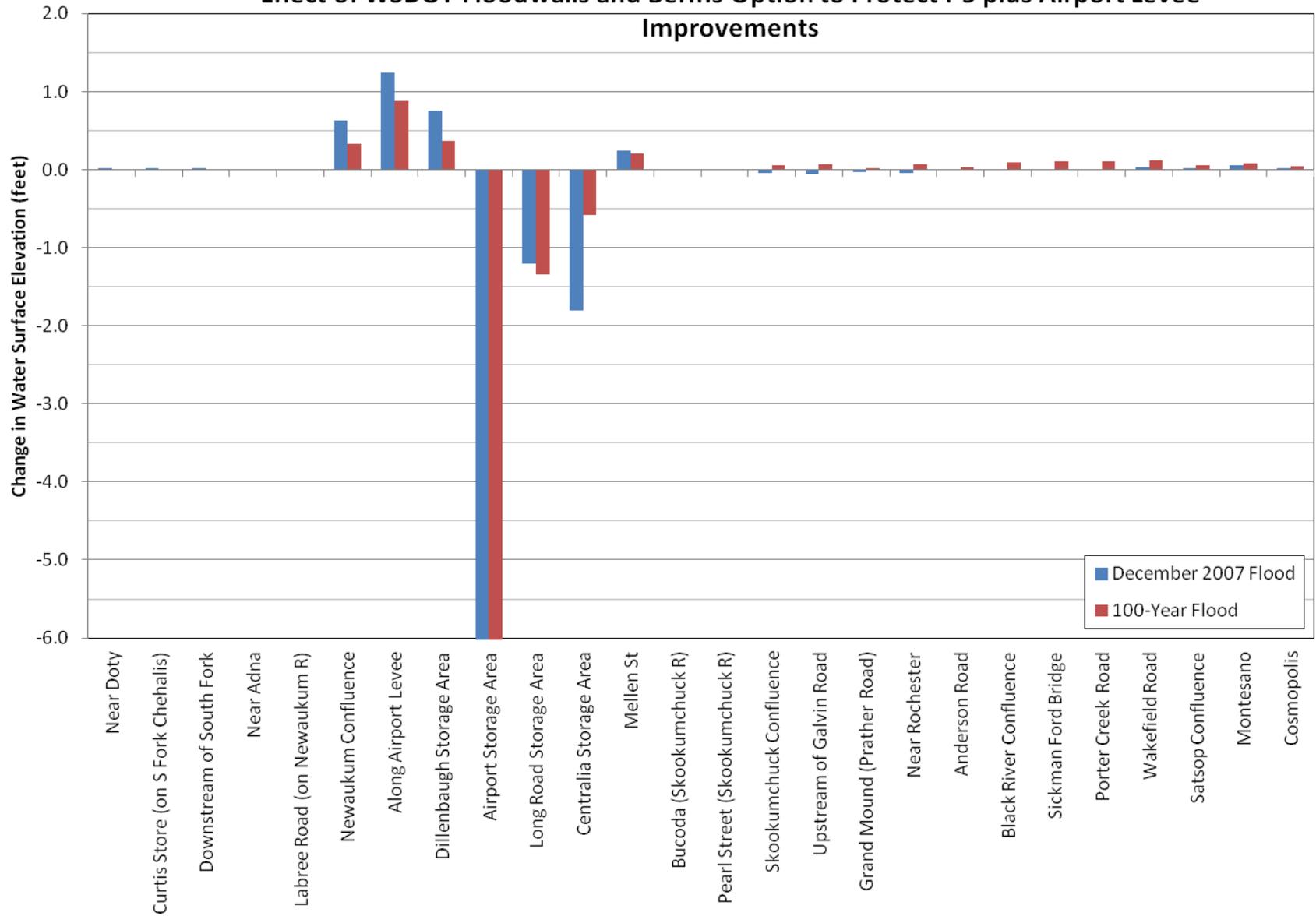
FEASIBILITY ANALYSES

- **Water Retention Feasibility.**
- **Protection of I-5.**
- **Aquatic Species Enhancement.**
- **Small Projects and Land Use Changes.**

Effect of Water Retention Facility on Upper Mainstem Chehalis River above Pe Ell plus Airport Levee Improvements



Effect of WSDOT Floodwalls and Berms Option to Protect I-5 plus Airport Levee Improvements



NEXT STEPS



GOVERNOR'S WORK GROUP PROCESS OVERVIEW

- **July 2013- January 2014:**
 - Determine alternatives for dam design and operation, I-5 and small projects scenario.
 - Guidance on aquatic species plan and benefit/cost methodology.
- **February – September 2014:**
 - Finalize potential dam design/operation plan, and assessment of benefits and impacts.
 - Finalize species enhancement plan.
 - Assess local floodplain management.
 - Public Meetings.
 - Finalize all other technical analyses.
- **September – November 2014**
 - Work Group develops recommendations to Governor and Legislature.

DECISION: NOVEMBER – DECEMBER 2014

- **Water Retention Permitting?**
- **Protection of I-5?**
- **Aquatic Species Enhancement?**
- **Small Projects and Land Use Changes?**

2007 FLOOD

I-5 Under Water
BRUCE ELY /
OREGONIAN



2/26/2014

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