

# Chehalis River Basin

*Reducing Flood Damage and  
Restoring Aquatic Species*

8:30 a.m.

March 11, 2019

Thurston County Commissioner Menser

# Today's Presentation . . .

- Provide update, encourage discussion.

- Key messages . . .

1. **Broad agreement** -- For first time in a century there is progress across the Basin on next steps to reduce flood damage and enhance salmon, aquatic species.

2. **Basin-wide strategy** -- An action-oriented, multi-phased Basin-wide strategy is needed to protect communities along the river and to enhance aquatic species.

3. **Collaboration is key** -- WA Legislature, Governor's Office, Governor's Chehalis Basin Work Group, Chehalis River Basin Flood Authority, and WA Agencies all working together = Action!

4. **Fundamental principle** -- Solving one's problems doesn't increase another's.



# Action . . .



Photo Source: THE CHRONICLE →

March 2019

# “Chehalis River Basin Flood Authority”

- **Formed in 2008**
  
- **Formal body focused on:** (1) flood hazard mitigation throughout the Basin; and (2) decision-making that is . . .
  - informed by science.
  - protective of Basin residents/communities.
  - environmentally appropriate.



- **Basin jurisdictions represented**

- ▶ Grays Harbor County
  - City of Aberdeen
  - City of Cosmopolis
  - City of Hoquiam
  - 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

March 2019

# "Office of Chehalis Basin"

Washington State Department of Ecology - Committees

https://www.ezview.wa.gov/site/alias\_1962/committees\_chehalis\_basin\_board/37068/chehalis\_basin...

### Board Member Contact Information

#### Voting Members

Name	Appointing Authority	Phone	E-mail
Harry Pickemell	Confederated Tribes of the Chehalis Reservation	360-273-5911	<a href="mailto:pickemell@ecy.wa.gov">pickemell@ecy.wa.gov</a>
Edna Fund	Chehalis River Basin Flood Authority	360-740-1120	<a href="mailto:fund@ecy.wa.gov">fund@ecy.wa.gov</a>
Jay Gordon	Chehalis River Basin Flood Authority	360-482-3485	<a href="mailto:gordon@ecy.wa.gov">gordon@ecy.wa.gov</a>
Tyson Johnston	Quinault Indian Nation	360-276-8211 ext. 1855	<a href="mailto:johnston@ecy.wa.gov">johnston@ecy.wa.gov</a>
Steve Malloch	Office of the Governor	206-818-0482	<a href="mailto:malloch@ecy.wa.gov">malloch@ecy.wa.gov</a>
Vickie Raines, Chair	Chehalis River Basin Flood Authority	360-249-3731	<a href="mailto:raines@ecy.wa.gov">raines@ecy.wa.gov</a>
J. Vander Stoep	Office of the Governor	360-748-9281	<a href="mailto:vstoep@ecy.wa.gov">vstoep@ecy.wa.gov</a>

#### Ex Officio Members

Name	Agency	Phone	E-mail
Justin Allegro	Department of Fish and Wildlife	360-707-8927	<a href="mailto:justin.allegro@dfw.wa.gov">justin.allegro@dfw.wa.gov</a>
Stephen Bernath	Department of Natural Resources	360-902-1028	<a href="mailto:stephen.bernath@dnr.wa.gov">stephen.bernath@dnr.wa.gov</a>
Bart Gernhart	Department of Transportation	360-905-2012	<a href="mailto:GernhaB@wsdot.wa.gov">GernhaB@wsdot.wa.gov</a>
Stu Trefry	Washington State Conservation Commission	360-584-5213	<a href="mailto:strefry@scc.wa.gov">strefry@scc.wa.gov</a>
Gordon White	Department of Ecology	360-407-6977	<a href="mailto:gordon.white@ecy.wa.gov">gordon.white@ecy.wa.gov</a>

#### Staff contact

**Chrissy Bailey**  
 Email: [chrissy.bailey@ecy.wa.gov](mailto:chrissy.bailey@ecy.wa.gov)  
 Phone: 360-407-6781

Washington State Department of Ecology

https://ecology.wa.gov/About-us/Get-to-know-us/Our-Programs/Office-of-Chehalis-Basin

DEPARTMENT OF ECOLOGY  
State of Washington

Regulations & Permits | Research & Data | Site Map | Contact Us

Home | Air & Climate | Water & Shorelines | Waste & Toxics | Spills & Cleanup

About us > Get to know us > Our programs > Office of Chehalis Basin

## Office of Chehalis Basin

Meet our director

Our programs

- Air Quality
- Environmental Assessment
- Hazardous Waste & Toxics Reduction
- Nuclear Waste Program
- Office of the Columbia River
- Office of Chehalis Basin**
- Strategy
- EIS
- Shorelands & Environmental Assistance
- Solid Waste Management
- Spills Program
- Toxics Cleanup
- Water Quality
- Water Resources
- Contact us

Building on the success of the earlier Chehalis Basin Work Group, the 2016 Washington Legislature created a new Office of Chehalis Basin within Ecology to administer legislative funding to implement the Chehalis Basin Strategy. In April 2018, Director Maia Bellon selected [Andrea McNamara Doyle](#) to lead our newest office.

When the Legislature formed the Office of Chehalis Basin, lawmakers also established the Chehalis Basin Board to provide long-term oversight of the strategy. The Board is responsible for developing budget recommendations to the Governor's office to implement the strategy. Our Office of Chehalis Basin provides support to the board.

The seven-member board typically meets the third Thursday of every month. Members represent the Chehalis River Basin Flood Authority, Confederated Tribes of the Chehalis Reservation, and Quinault Indian Nation, as well as agricultural, environmental, and economic interests in the basin. There are also five non-voting Board members representing various state agencies. Meeting agendas and materials as well as Board members and their contact information is available on the [Chehalis Basin Board's EZ View website](#).

### Chehalis Basin Board Meetings

UPDATE - The Oct. 4, 2018, special meeting of the Chehalis Basin Board that was to take place in Aberdeen has been **cancelled**. All Board agendas and meeting materials are available through [EZ View](#).



## Helping reduce flood damages, restore aquatic habitat

# Background . . .

- 2007 Storm -- \$938M Basin-wide damage, \$300M lost economic activity (WA).



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



**City of Centralia**  
STEVE RINGMAN / SEATTLE TIMES



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



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



# Background . . .

- 2007 Flood -- I-5 and Hwy 507 Interchange looking South.

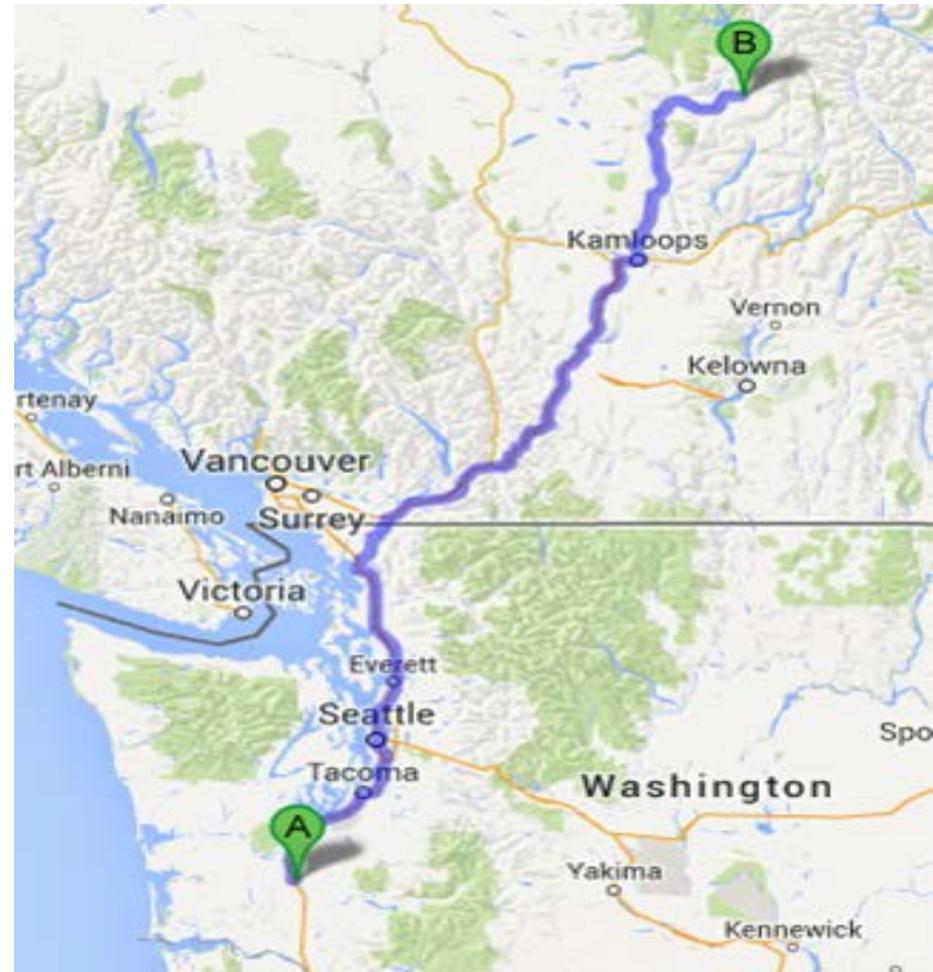


**City of Centralia and I-5**  
STEVE RINGMAN /  
SEATTLE TIMES

March 2019

# Background . . .

- 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 1-mile wide or covering . . .
  - 80% of Kitsap County.
  - 69% of Clark County.
  - 59% of Thurston County.

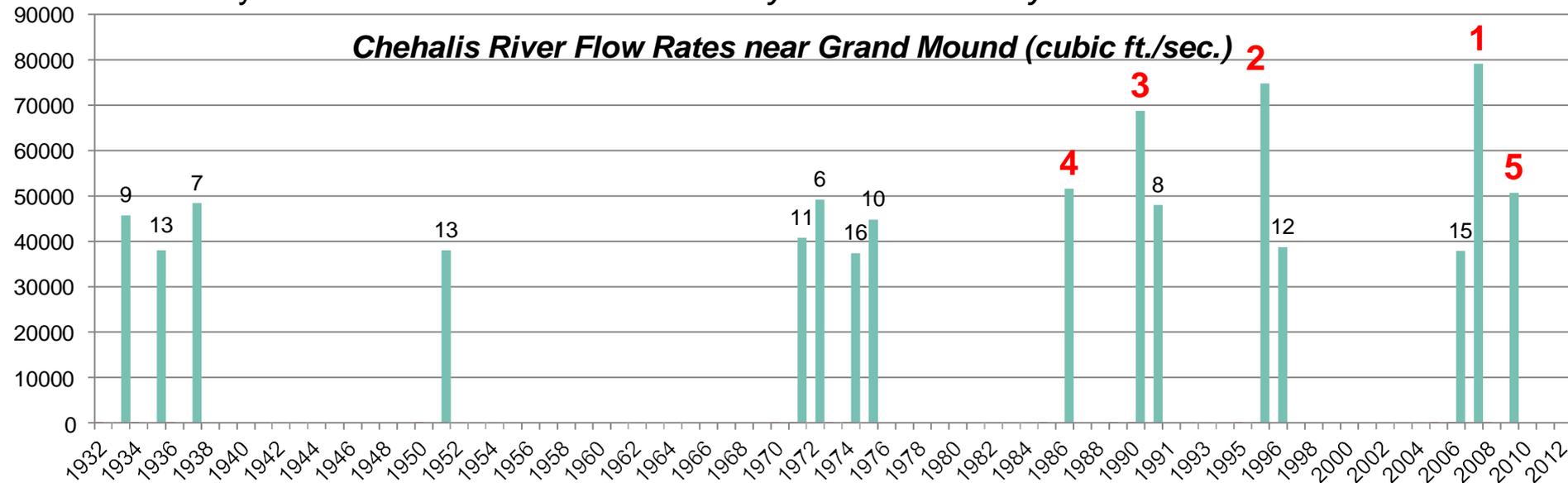


# Background . . .

## ■ Ranked high flow events (1932 - 2012) . . .

- ❑ I-5 closed 1990, 1996, 2007, 2009.
- ❑ Five largest events since 1986 -- *Frequent floods are getting worse and damage is increasing . . .*
- ❑ 100 year flood estimate -- *Increased by 33% in last 30 years.*

**Chehalis River Flow Rates near Grand Mound (cubic ft./sec.)**



# Background . . .

- Chehalis is the second largest river basin in the state, rich in natural resources . . .
- Salmon populations are 15-25% of historic levels.
- TMDL for the basin (<http://www.ecy.wa.gov/programs/wq/tmdl/ChehalisRvrTMDLSummary.html>).



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

CHEHALIS BASIN SALMON & TROUT

OCEAN PHASE		SPAWNING PHASE
<p>Chinook Coho Coho Steelhead Bull trout Cutthroat</p>	<p>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</p> <p><b>WHAT SALMON NEED IN FRESHWATER HABITAT</b></p> <p>Cool, clean water</p> <p>Appropriate water depth, quantity and flow velocities</p> <p>Upland and riparian (stream bank) vegetation to stabilize soil &amp; provide shade</p> <p>Clean gravel for spawning and egg-rearing</p> <p>Large woody debris to provide resting and hiding places</p> <p>Adequate food</p> <p>Varied channel forms</p>	<p>Chinook Coho Coho Steelhead Bull trout Cutthroat</p>

[www.chehalisbasinpartnership.org](http://www.chehalisbasinpartnership.org)

# Background . . .

## Salmon-habitat potential

Species	Current Spawner	Habitat Degradation
Spring Chinook Salmon	2,300	78%
Fall Chinook Salmon	24,317	45%
Coho Salmon	42,000	69%
Winter-run Steelhead	8,700	44%

*Source: Chehalis Basin Strategy: Reducing Flood Damage and Restoring Aquatic Species; Pe Ell Public Meeting; 10/14/2014; Page 13.*

# Solution = Basin-wide Approach

## Action-oriented, Multi-phased Approach

1. Basin-Wide Relationships
2. Hydraulic Understanding
3. Master Strategy (Game Plan)
4. Large Capitol Projects
5. Small-Scale Local Projects
6. Local Floodplain Management
7. Restore Salmon and Aquatic Species
8. Early Flood Warning
9. Outreach, Education and Communication

### Chehalis Basin Strategy: Reducing Flood Damage and Restoring Aquatic Species

For the first time—after over a century of catastrophic floods and hundreds of studies—Inland agreement is building on a comprehensive strategy to reduce flood damage, restore salmon populations, and support the prosperity of communities in the Chehalis Basin.



*The problems in the Chehalis Basin are real and action is being taken now to protect communities and restore aquatic species.*

**Frequent Floods Are Getting Worse and Damage is Increasing.** The five largest floods in the Chehalis Basin's history were caused by big, wet and cold storms, causing unprecedented damage to homes, property, businesses, roads, and bridges. Each of the worst floods struck in the days of a large charge outside from the thousands of warnings of possible significant increases in sea level rise over the next century, and coastal communities face larger estimates that the cost of future floods will exceed \$10 billion in the next 50 years if steps are taken.



**Salmon Populations Are Seriously Degraded and Continue to Decline.** The natural resources of the Chehalis Basin have suffered historic and rapid declines due to a combination of factors including both direct and indirect impacts of climate change. The Chehalis Basin supports the world's largest and most diverse population of steelhead trout, but the steelhead population is declining rapidly. The steelhead population is degraded, with salmon populations at 15% of their historic levels. It is very probable that the current trajectory, coupled with the potential impacts of climate change, would lead to the complete loss of steelhead and other salmonids in the basin.

**Changing the History of Inaction.** For a long time, there has been a failure to meaningfully address the real problems of our world: flooding and significant degraded and degraded waters in the Chehalis Basin. One of the most important actions to address flood damage have been completed, with no real change, still now. The Chehalis Basin Flood Action Plan is a catalyst for a number of such other projects to reduce flood damage and restore the basin.

7/2/2015

Implementing a Comprehensive, Integrated Approach for Fish and Floods. An extensive evaluation of the potential social, technical, financial, and ecological impacts of flood damage reduction ideas. In November 2014 the Governor's Chehalis Basin Work Group issued the updated Governor's work plan, state agencies, and the Chehalis Basin Flood Action Plan. The plan is a key step in the development of a comprehensive approach to flood damage reduction and aquatic species restoration. These recommendations include:

- A concrete flood retention dam on the upper Chehalis River, paired with investments to the Chehalis Central Mainstem Restoration.
- Restoration of over 200 miles of Spring Chinook spawning and rearing habitat, removal of priority fish passage barriers, restoration of 10 miles of steelhead spawning habitat, and a comprehensive strategy to address river restoration.
- Investments in high-priority, low-cost flood damage reduction projects, with a specific emphasis on low-cost solutions.
- Local government land use management actions to protect existing floodplain functions, to provide for homes and floodproofing businesses and public structures to provide additional protection for residential structures that are already located in floodways.

Over the next two years, the Washington State Department of Ecology—in consultation with the Work Group, Governor's office, and other agencies and stakeholders—will set an agenda and set the terms and cost of the recommended package of flood damage reduction and aquatic species restoration actions through implementation of the Chehalis Basin Flood Action Plan (CBFAP). The Governor's report to the legislature will analyze the potential economic, social, and economic impacts associated with the recommended package of flood damage reduction and aquatic species restoration actions as well as a "best fit" alternative for the basin.

There is a second opportunity for public input on this programmatic plan:

- October 2015: public meeting and formal public comment period on the draft plan.
- August 2016: public meeting and formal public comment period on the draft plan document.
- November 2016: public meeting and formal public comment period on the draft plan document.

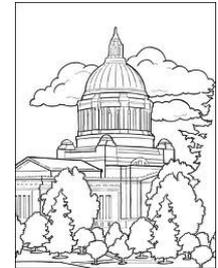
The development of a programmatic plan is a process that involves agencies, stakeholders, and other interested parties with a broad and diverse portfolio in order to evaluate the interests to meet flood damage reduction and restoration goals in the Basin. The plan is a key step in the development of a comprehensive approach to flood damage reduction and aquatic species restoration. The plan is a key step in the development of a comprehensive approach to flood damage reduction and aquatic species restoration.



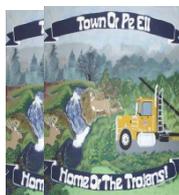
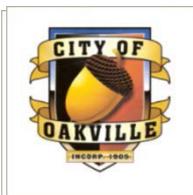
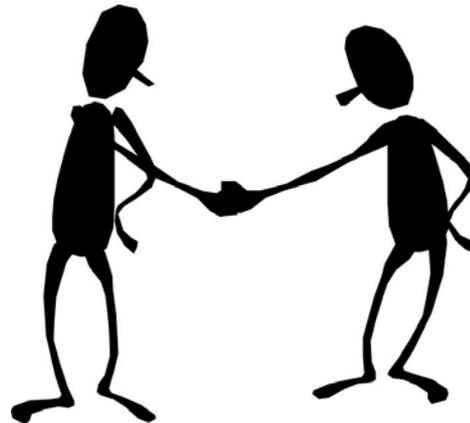
*We are happy to answer questions or provide further information about the work in the Chehalis Basin. We can be reached through Facebook's Ask a Question at (206) 844-2245 or @governor.wa.com/askagovernor.*

7/2/2015

# 1. Basin-Wide Relationships



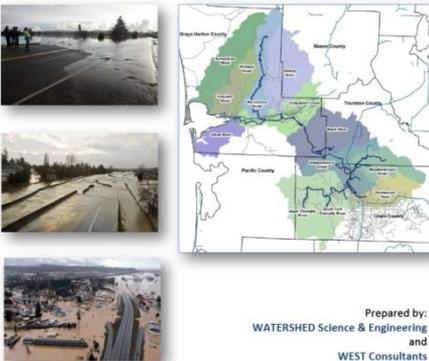
TOWN of BUCODA



## 2. Hydraulic Understanding

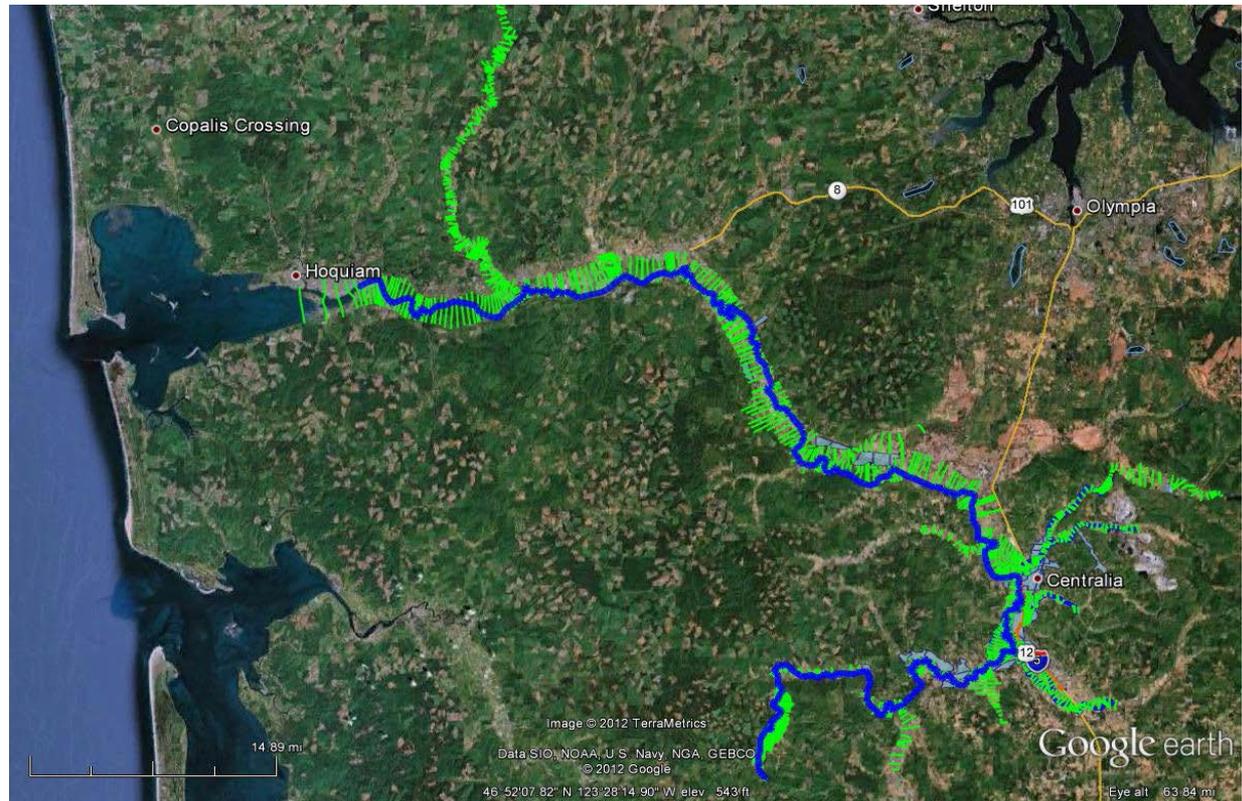
- **Science-based model** -- To inform decision-makers on hydraulic effects of potential flood relief options (at basin-wide and localized scales).
- **108 miles** -- Mouth of Chehalis River upstream to Pe Ell (108 miles).

Draft Report - Chehalis River  
Hydraulic Model Development Project



Prepared by:  
WATERSHED Science & Engineering  
and  
WEST Consultants  
Prepared for:  
Chehalis River Basin Flood Authority

July 23, 2012



March 2019

## 2. Hydraulic Understanding

- **Example: Basin-wide effects analysis**  
(Governor's Chehalis Basin Workgroup, 2014 Recommendations Report, 11/25/2014)

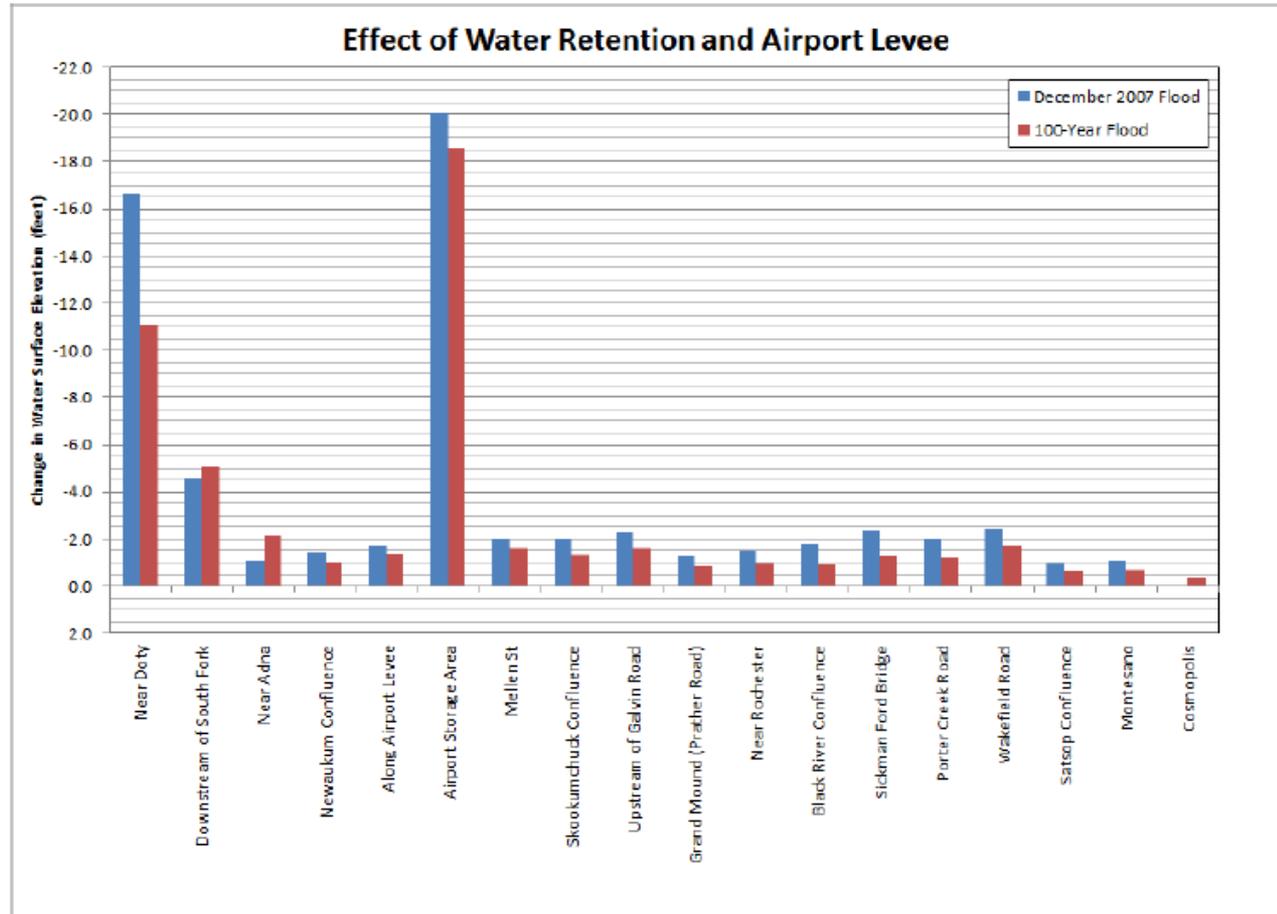


Figure 2: Predicted Changes in Water Surface Elevations from Water Retention and Airport Levee

For 60 years, little has come from efforts to reduce flood damage in the Chehalis Basin. Now, for the first time, there is a broadly-supported, Basin-wide process that is implementing long-sought local projects and leading to a comprehensive strategy to address flooding, while at the same time enhancing aquatic species across the Chehalis Basin.

The 2013 legislature funded a \$26 million program of



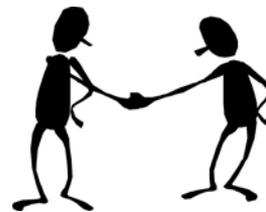
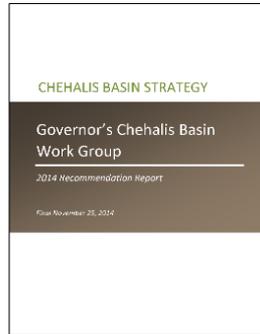
## 3. Master Strategy (Game Plan)

### ❑ Evolution (2008 to present):

Flood Authority → Governor's Workgroup → Office of Chehalis Basin.

### ❑ Key Elements:

1. Evaluation, implementation of Large Capital Projects:
  - Flood Retention Dam on upper Chehalis River.
  - Airport Levee Improvements.
  - North Shore Levee in Aberdeen, Hoquiam.
2. Basin-wide Aquatic Species Restoration (100+ miles spawning/rearing habitat).
3. Local Flood-Damage Reduction Projects.
4. Local Flood-Proofing, including raising homes, CRS actions, local ordinance improvements, etc.
5. Cost = \$500-600M; Benefit = \$720M (100 yrs.); No Action = \$3.5B (100 yrs.).



# 4. Large Capitol Projects



## 2013-15:

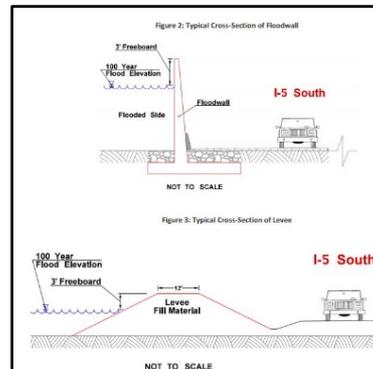
- ❑ Technical team developed baseline knowledge on safety, feasibility of Flood Retention Dam alternatives -- field visits, site and design considerations, world-wide research, etc.
  - Permanent reservoir (w/ fish passage) or Run-of-the-river (no permanent reservoir).
  - Roller compact concrete or Earthen fill.
  - Flood-control only or Multi-purpose.
- ❑ WSDOT evaluated I-5 Protection alternatives -- levees, walls, raise road, etc.

## 2015-17:

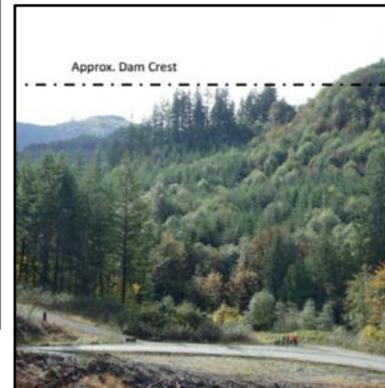
- ❑ Formal environmental review (Programmatic EIS) was conducted to evaluate alternatives.

## 2017-19:

- ❑ Project-level EIS starts.



March 2019



← Photo source:  
ANCHOR QEA

**Another Chehalis Basin Flood Protection Project**  
**Wastewater Treatment Plant Flood Prevention Dike**  
 Schedule → February 2014 to April 2014  
 Budget → \$511,153  
 Benefit → Protecting essential public infrastructure for all Basin residents  
[www.ezview.wa.gov](http://www.ezview.wa.gov)  
 STELLAR  
 Parametrix

## Aberdeen Proposed Northside Dike/Levee



# 5. Local Projects (Basin-wide)

## 2012 Supplemental Capital Budget:

- \$5.0M

## 2013-15 Capital Budget:

- \$10.74M

## 2015-17 Capital Budget:

- \$15.7M

## 2017-19 Capital Budget:

- \$9.6M

- 24 complete
- 15 underway
- \$40.4M State (2012-19)
- \$9.3M Local (2012-19)



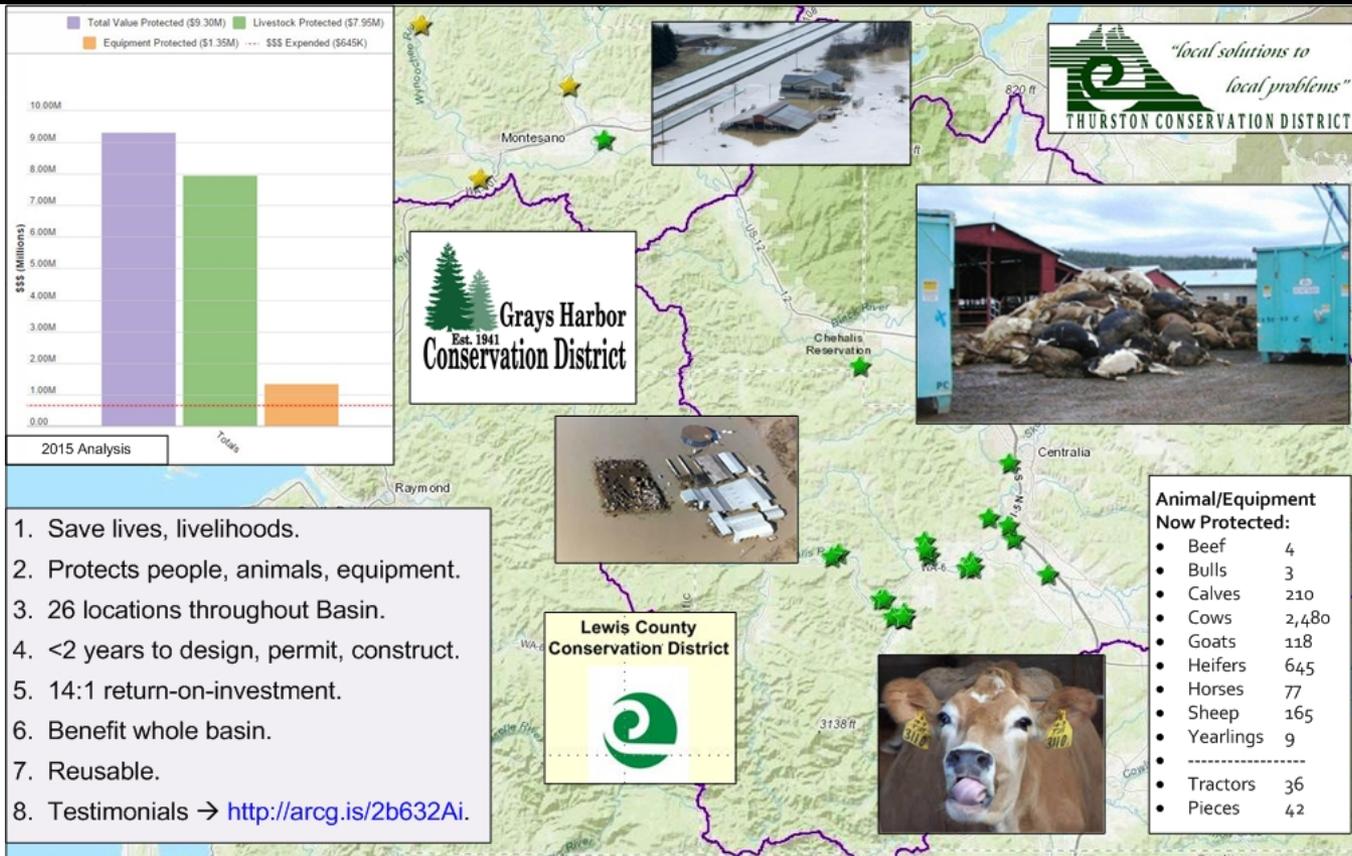
1. ~2-3 years to design, permit, construct.
2. Protect people, property, infrastructure.
3. Improve readiness, response, resiliency.
4. Examples:
  - ✓ Drinking Water (Boistfort, Bucoda).
  - ✓ Wastewater (Montesano, Pe Ell).
  - ✓ Emergency Response (Grays Harbor County, Chehalis-Centralia Airport).
  - ✓ Regional Economic Infrastructure (Montesano).
  - ✓ Community Protection (Adna, Bucoda, Centralia, Chehalis, Chehalis Tribe, Oakville).
  - ✓ Flood Warning Infrastructure (Basin-wide).
5. Typical cost = \$250K to \$2-3M.

- Construction, Complete
- Construction, Incomplete
- Plan/Study/Tool, Complete
- Plan/Study/Tool, Incomplete

[www.ezview.wa.gov/chehalisbasinlocalfloodreliefprojects](http://www.ezview.wa.gov/chehalisbasinlocalfloodreliefprojects)

**Local Projects (2012-19)**  
[www.ezview.wa.gov/chehalisfloodauthority](http://www.ezview.wa.gov/chehalisfloodauthority)

# 5. Local Projects (Farm Pads)



1. Save lives, livelihoods.
2. Protects people, animals, equipment.
3. 26 locations throughout Basin.
4. <2 years to design, permit, construct.
5. 14:1 return-on-investment.
6. Benefit whole basin.
7. Reusable.
8. Testimonials → <http://arcg.is/2b632Ai>.

## Farm Pads, Evacuation Routes (2012-19)

- ★ → Complete
- ★ → Underway



[www.ezview.wa.gov/chehalisfloodauthority](http://www.ezview.wa.gov/chehalisfloodauthority)



March 2019

10/05/2018

# 6. Land Use, Floodplain Management (Floodproofing Pilot)

1. Foundation vents (right) will not protect against floods; foundation flood openings (below) will.
2. Bucoda pilot installed proper foundation flood openings in 11 homes, and provided new Elevation Certificates to homeowners to lower flood insurance payments.

**2015-16 Local Floodproofing Pilot**  
**"Bucoda Foundation Flood Opening Retrofits"**

[www.ezview.wa.gov/bucodafloodrelief](http://www.ezview.wa.gov/bucodafloodrelief)  
 March 2019

# 7. Restore Salmon and Aquatic Species

## Correcting Fish Barriers



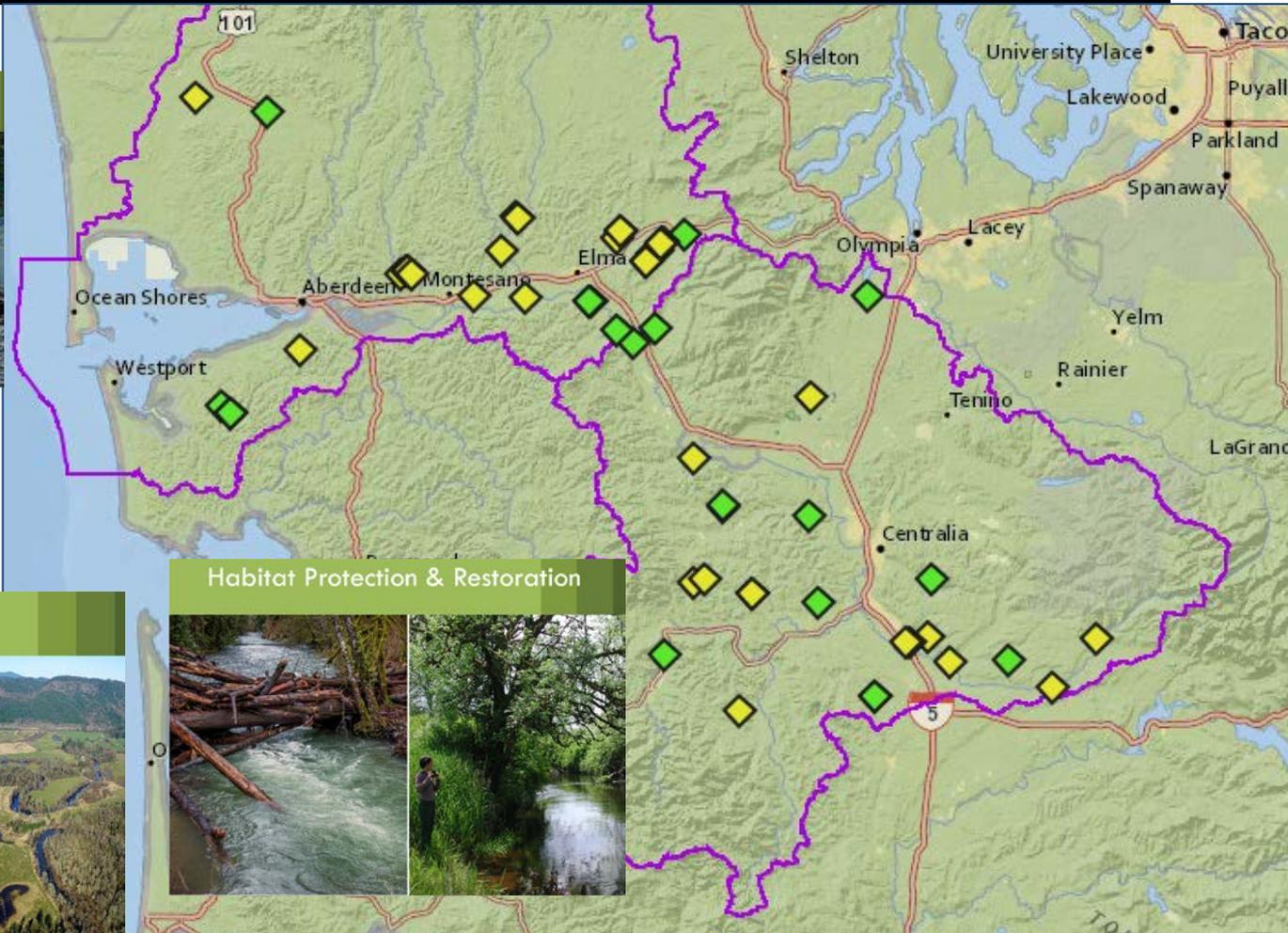
Results so far . . .

- 23 Complete (\$3.8M)
- 31 Underway (\$7.9)

## Uplands & Floodplains



## Habitat Protection & Restoration



# 7. Restore Salmon and Aquatic Species

## Other Fish and Aquatic Species



March 2019

# 8. Early Flood Warning

- [www.chehalisriverflood.com](http://www.chehalisriverflood.com)

- Front-facing website.

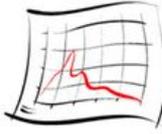
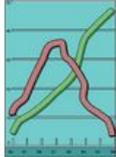
- Data collection, data synchronization.

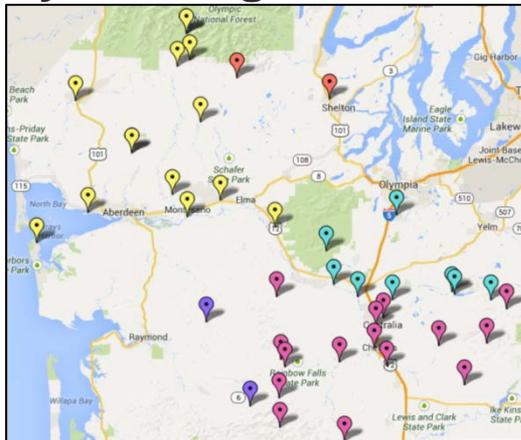
- Improved forecasting, early-warning.



Home <http://www.chehalisriverflood.com>

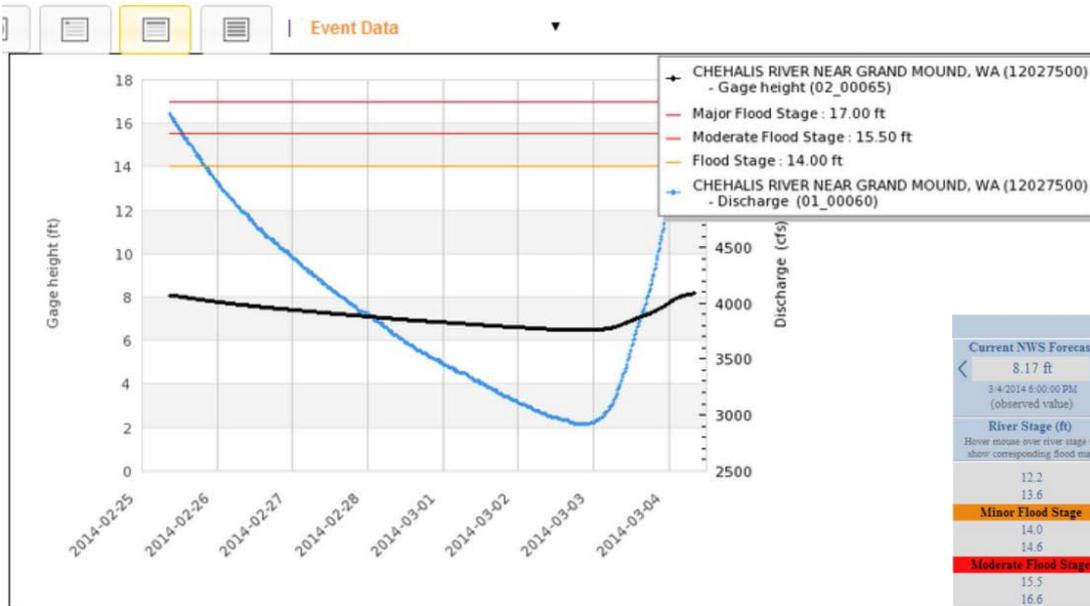
## Chehalis River Basin Flood Authority

 Weather Forecast	 Rainfall Forecast	 River Forecast	 Flood Maps	 Gage Data Graphs
 Gage Data Maps	 Flood Authority News	 Road Conditions	 USGS Gages	 Help



# 8. Early Flood Warning

## Localized tracking, forecasting . . .



Daily discharge, cubic feet per second -- statistics for Mar 4 based on 84 years of record [more](#)

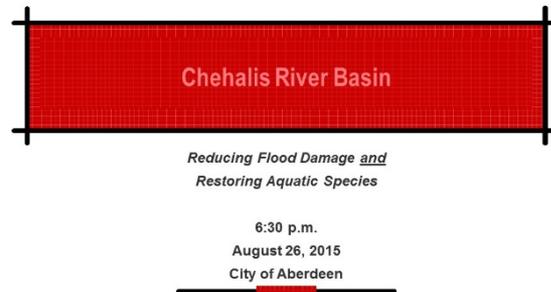
Min (2005)	25th percentile	Median	Mean	Most Recent Instantaneous Value Mar 4	75th percentile	Max (1987)
903	2340	3260	4670	5830	6340	22700

# 9. Outreach, Education and Communication

## Website



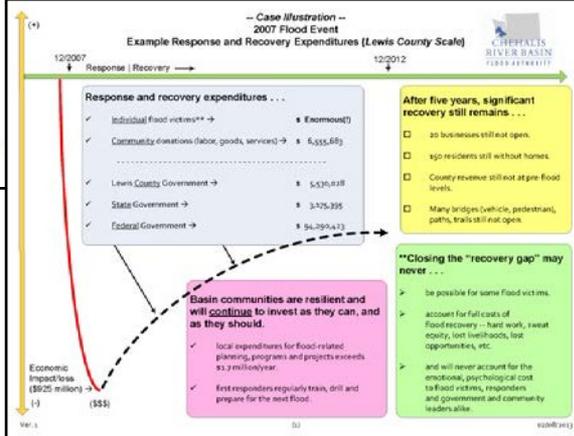
## Outreach Visits



## Project Signs



## Informational Analyses



## Chehalis Basin Flood Stories

### Chehalis Basin Flood Stories

- [Farm Pads & Evacuation Routes](#)
- [Flood Warning System](#)
- [Local Capital Construction Projects](#)



# 9. Outreach, Education and Communication

Washington State Department of Ecology website. The page is titled "Office of Chehalis Basin" and includes a navigation menu with options like "Regulations & Permits", "Research & Data", "Site Map", and "Contact Us". The main content area provides information about the office's mission, its creation in 2016, and details about the Chehalis Basin Board. A sidebar on the left lists various environmental programs such as "Air Quality", "Environmental Assessment", and "Nuclear Waste Program".

[www.chehalisbasinstrategy.com](http://www.chehalisbasinstrategy.com)

Chehalis Basin Strategy website. The page features a video player with the title "Chehalis Basin Strategy Challenges and Opportunities". A call to action reads: "Watch this short presentation on the Chehalis Basin Strategy. Draft EIS Available for Review. To submit comments on the EIS, click here". The website header includes navigation links for "HOME", "STRATEGY", "ENVIRONMENTAL REVIEW", "GET INVOLVED", "CURRENT ACTIONS", and "RESOURCES".

[www.ezview.wa.gov/chehalisfloodauthority](http://www.ezview.wa.gov/chehalisfloodauthority)

EZview website for the Chehalis River Basin Flood Authority. The page features a navigation menu with "Home", "Local Projects", "Meetings", "Capital Budget 2013-15", "Outreach & Education", "Gages & Stations", "Documents", "Contacts", "Library", and "FAQs". Key sections include "ANNOUNCEMENTS!!" with a "Click for latest news" link, "THE CHEHALIS BASIN STRATEGY" with a "Click icon for 2014 strategy" link, "Current Flood Forecast" with a "Click icon for current river forecast" link, and "GIVE US YOUR FEEDBACK" with a "Click icon to provide feedback" link. A "CRBFA Governing Documents" link is also present.

[www.chehalisriverflood.com](http://www.chehalisriverflood.com)

Chehalis River Flood website. The page features a navigation menu with "Home", "About", "Floods", "Maps", "Gages", "News", "Meetings", "Documents", "Contacts", "Library", and "FAQs". A prominent "Information" section highlights "Flood inundation maps for the Nooksack River near Chehalis are now available." Below this, there are several icons representing different resources: "Weather Forecast", "Basin Forecast", "River Forecast", "Flood Maps", "Open Data Location", "Map Data Files", "Flood Authority News", "Road Conditions", "USGS Gages", and "Help".

# Closing – 2007 Flood Damage . . .



Chehalis  
River near  
Doty  
USGS

# Closing – 2007 Flood Damage . . .



**Clearing Mud in  
Curtis, WA**  
STEVE RINGMAN /  
SEATTLE TIMES

March 2019

# Closing – 2007 Flood Damage . . .



**Curtis, WA, Aftermath  
of 7 Feet of Water**  
STEVE RINGMAN /  
SEATTLE TIMES

# Closing – 2007 Flood Damage . . .



**Chandler Road Bridge  
near Doty, WA**  
STEVE RINGMAN /  
SEATTLE TIMES

March 2019

# Closing – 2007 Flood Damage . . .



# Closing – 2007 Flood Damage . . .



March 2019

# Closing – 2007 Flood Damage . . .

**I-5 Under Water**  
BRUCE ELY /  
OREGONIAN



March 2019

# Closing – 2007 Flood Damage . . .

**Chehalis, WA**  
STEVE RINGMAN /  
SEATTLE TIMES



March 2019

# Closing – 2007 Flood Damage . . .



March 2019

# Closing – 2007 Flood Damage . . .

**Jackson Street,  
Centralia, WA**  
STEVE RINGMAN /  
SEATTLE TIMES



March 2019

# Closing – 2007 Flood Damage . . .



**I-5 Under Water**  
BRUCE ELY / OREGONIAN

# Closing – 2007 Flood Damage . . .



**Photos Source:**  
WSDOT

March 2019

# Closing – 2007 Flood Damage . . .



March 2019

# Closing – 2007 Flood Damage . . .



# Closing – 2007 Flood Damage . . .



**Wakefield Road,  
Elma, WA**  
GREG GILBERT /  
SEATTLE TIMES

# What's Next – 2019-21 Budget Development

Chehalis River Basin Flood Authority

Chehalis Basin Board Discussion Document

9-27-2018

## 2019-21 Local Flood Hazard Reduction Project Proposals (ordered, prioritized)

RECOMMEND MOVING FORWARD Tier I -- Continues/Completes Existing Project		FUNDING APPROACH:	
		State Capital Budget Request	To Be Addressed Locally
Project Cost			
1. Aberdeen -- Fry Creek Flood Restoration & Flood Reduction (Phase IIb, New Pump Station)	\$ 3,000,000	\$ 2,499,011	\$ 500,989
2. Centralia -- China Creek Flood and Habitat Mitigation (Phase 2)	\$ 2,500,000	\$ 2,500,000	Notes 1
3. Hoquiam -- Northshore Levee (West Segment)	\$ 800,000	\$ 666,403	\$ 133,597
4. Chehalis -- Flood Storage and Habitat Enhancement Master Plan (Phase II)	\$ 487,991	\$ 406,498	\$ 81,493
5. Grays Harbor County -- Keys Road Flood Protection	\$ 375,000	\$ 200,000	\$ 175,000
6. Port of Chehalis -- Berwick Creek Flood Reduction, Restoration	\$ 500,000	\$ 416,502	\$ 83,498
7. CRBFCZD -- Chehalis River Basin Comprehensive Flood Hazard Management Plan	\$ 275,000	\$ 229,076	\$ 45,924
8. Thurston -- Weather and Stream Flood Hazard Monitoring Telemetry	\$ 49,835	Consider for future funding.	
9. WCSF -- Chehalis Basin Habitat Work Schedule Documentation and Implementation	\$ 85,464	Consider for future funding.	
	\$ 8,073,290	\$ 6,917,491	\$ 1,020,501

HOLD FOR LATER FUNDING Tier II -- Starts New Project		Project Cost
1. Lewis -- Multi-Jurisdictional Flood Warning and Response Plans	\$	130,000
2. Boistfort Valley Water -- Water System Plan Update	\$	150,000
3. Thurston CD -- Allen Creek Hydrologic Assessment	\$	62,500
4. Lewis -- Unnamed Tributary to Stearns Creek (Pleasant Valley Road MP 4.25) Stream Realignment	\$	846,000
5. Montesano -- South 9th Street Culvert Replacement	\$	140,000
	\$	1,328,500

CONSIDER UNDER CFAR ("Community Flood Assistance and Resilience Program") Tier III -- Home Elevations, Buy-outs, Relocations		Project Cost
1. Thurston -- Elevates or Buy Outs	\$	500,000
2. GH CD -- Wynoochee Home Relocation	\$	104,033
	\$	604,033

Notes: 1 -- Project is looking to reduce overall costs for (1) dirt hauling, and (2) vegetation plantings.	Map --> <a href="https://arca.is/PofTv">https://arca.is/PofTv</a>
	Legend --> Construction      Planning

# What's Next – EIS Starts

 Fri 9/28/2018 9:00 AM  
On behalf of Washington Department of Ecology and U.S. Army Corps of Engineers <diane.butorac@ECY.WA.GOV>  
Environmental Review Starts for Proposed Chehalis River Basin Flood Damage Reduction Project

To CHEHALISSEPAEIS@LISTSERV.ECOLOGY.WA.GOV

**Environmental review starts for Chehalis River project**

**Public comments sought** in first step of environmental assessment process

CHEHALIS – To reduce flood risks in the state's second-largest river system, the Chehalis River Basin Flood Control Zone District is proposing to construct a new **floodwater retention structure** on the Chehalis River near the town of Pe Ell in Lewis County.

The district also is seeking to raise the current levee at the **Chehalis-Centralia Airport**, including elevating part of Airport Road and making other improvements.

Since the proposal is likely to adversely affect the environment, the Washington Department of Ecology and U.S. Army Corps of Engineers (USACE) are seeking public comment to help the agencies define what should be studied in the environmental review for the proposed flood-damage reduction project.

Under the proposal, the Chehalis River would flow normally through the structure except during major floods, when the facility could be operated to hold up to 65,000 acre feet of floodwaters in a temporary reservoir. The water would be released back to the river system as soon as it was safe to do so.

The two agencies are leading separate environmental reviews of the district's proposal but are holding a joint scoping period to make it easier for the public to submit comments. The agencies have established a project website (<http://chehalisbasinstrategy.com/eis/>) with information about the scoping process, public meetings, how to submit comments, and other information about the environmental review process.

Ecology is using the State Environmental Policy Act (<https://ecology.wa.gov/regulations-permits/SEPA-environmental-review>) to evaluate the proposal while the USACE is conducting its environmental review under the National Environmental Policy Act (<https://openel.org/wiki/RAPID/Roadmap/9-FD-k>). Each agency will develop a separate environmental impact statement (EIS) to assess the project.

The first step in the environmental review process is obtaining public input about the scope of the EIS to help identify project alternatives, probable significant adverse impacts, potential mitigation measures, and licenses or other approvals that may be required.

In mid-October, USACE and Ecology will conduct two open house-style public meetings to gather comments:

- **Montesano: Oct. 16, from 5 to 8 p.m. at Montesano City Hall, 112 N. Main St.**
- **Centralia: Oct. 17, from 5 to 8 p.m. at Centralia College, Bowman Rotary Banquet Rooms, 600 Centralia College Boulevard.**

Both agencies will accept public comments through Oct. 29. Comments can be submitted electronically through the project website (<http://chehalisbasinstrategy.com/eis/>) or mailed to:

Chehalis Flood Damage Reduction Project EIS Anchor QEA  
720 Olive Way, Suite 1900  
Seattle, WA 98101

Each agency will summarize the comments received during scoping into a summary document, and make the summaries available on the project website.

Contacts:  
Curt Hart, Ecology communications, 360-407-6944, @ecologyWA Patricia Graesser, USACE communications, 206-764-3750

# For Further Information . . .

**Vickie Raines, Grays Harbor County Representative**

*Chair*, Chehalis River Basin Flood Authority

*Chair*, Chehalis Basin Board

360/249-3731

[vraines@co.grays-harbor.wa.us](mailto:vraines@co.grays-harbor.wa.us)

**Edna Fund, Lewis County Representative**

*Vice-Chair*, Chehalis River Basin Flood Authority

*Member*, Chehalis Basin Board

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[Edna.Fund@lewiscountywa.gov](mailto:Edna.Fund@lewiscountywa.gov)

**Scott Boettcher**

*Staff*, Chehalis River Basin Flood Authority

360/480-6600

[scottb@sbgh-partners.com](mailto:scottb@sbgh-partners.com)

**Cindy Wilson** (Alternate for Thurston County) and **Alan Vanell**

*Members*, Chehalis River Basin Flood Authority

[wilsonc@co.thurston.wa.us](mailto:wilsonc@co.thurston.wa.us)

[counvanell@scattercreek.com](mailto:counvanell@scattercreek.com)

# Key Links . . .

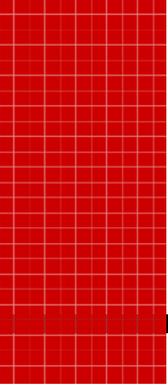
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## 1. Chehalis River Basin Flood Authority -- [www.ezview.wa.gov/chehalisfloodauthority](http://www.ezview.wa.gov/chehalisfloodauthority)

- Flood Warning System -- [www.chehalisriverflood.com](http://www.chehalisriverflood.com)
- Sign-Up for Email Gage Alerts -- <https://www.ezview.wa.gov/DesktopModules/Documents2/View.aspx?tabID=28124&alias=1492&mid=69571&ItemID=6465>
- See Gage Alerts Tally Over Time -- <https://data.wa.gov/dataset/Gage-Alert-Sign-Ups-2014-18/f4wb-hxqz>
- Interactive Map (Local Projects, Farm Pads, Flood Warning System Gages, Bucoda Pilot, Habitat Projects) -- <http://arcg.is/19GXma>

## 2. Chehalis Basin Strategy -- [www.chehalisbasinstrategy.com](http://www.chehalisbasinstrategy.com)

## 3. Office of Chehalis Basin – <https://ecology.wa.gov/About-us/Get-to-know-us/Our-Programs/Office-of-Chehalis-Basin>



Thank You . . .

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# Thank You!

**Note:**

This Presentation is Available at  
“Chehalis River Basin Flood Authority” Website  
at [www.ezview.wa.gov/chehalisfloodauthority](http://www.ezview.wa.gov/chehalisfloodauthority).

**Email Distribution List**

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March 2019

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