

Chehalis River Basin Flood Authority

*Reducing Flood Damage and
Restoring Aquatic Species*

City of Cosmopolis

September 21, 2022

Scott Boettcher

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Today's Presentation

- Describe the “Flood Authority”

- #1 -- Local Projects

- #2 -- Flood Warning System

- #3 – Role

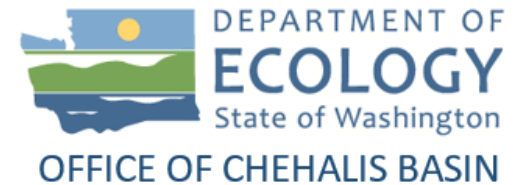


- Touch on “Office of Chehalis Basin” and “Chehalis Basin Strategy”

- Allow time for discussion

State Law

“The primary purpose of the office is to aggressively pursue implementation of an integrated strategy and administer funding for long-term flood damage reduction and aquatic species restoration in the Chehalis river basin.”
([RCW 43.21A.730](#))



Office of Chehalis Basin | Chehalis Basin Board

<https://chehalisbasinstrategy.com/>

Chehalis River Basin Flood Authority

- **Formed** in 2008
- **Focused on** flood hazard mitigation
- **Decision-making**
 - informed by science
 - protective of Basin residents/communities
 - environmentally appropriate
- **Jurisdictions** represented (see [inter-local agreement](#))
 - Grays Harbor County (2008)
 - City of Aberdeen (2008)
 - City of Cosmopolis (2011)
 - City of Hoquiam (2017)
 - City of Montesano (2008)
 - City of Oakville (2008)
 - Lewis County (2008)
 - City of Centralia (2008)
 - City of Chehalis (2008)
 - City of Napavine (2011)
 - Town of Pe Ell (2008)
 - Thurston County (2008)
 - Town of Bucoda (2008)

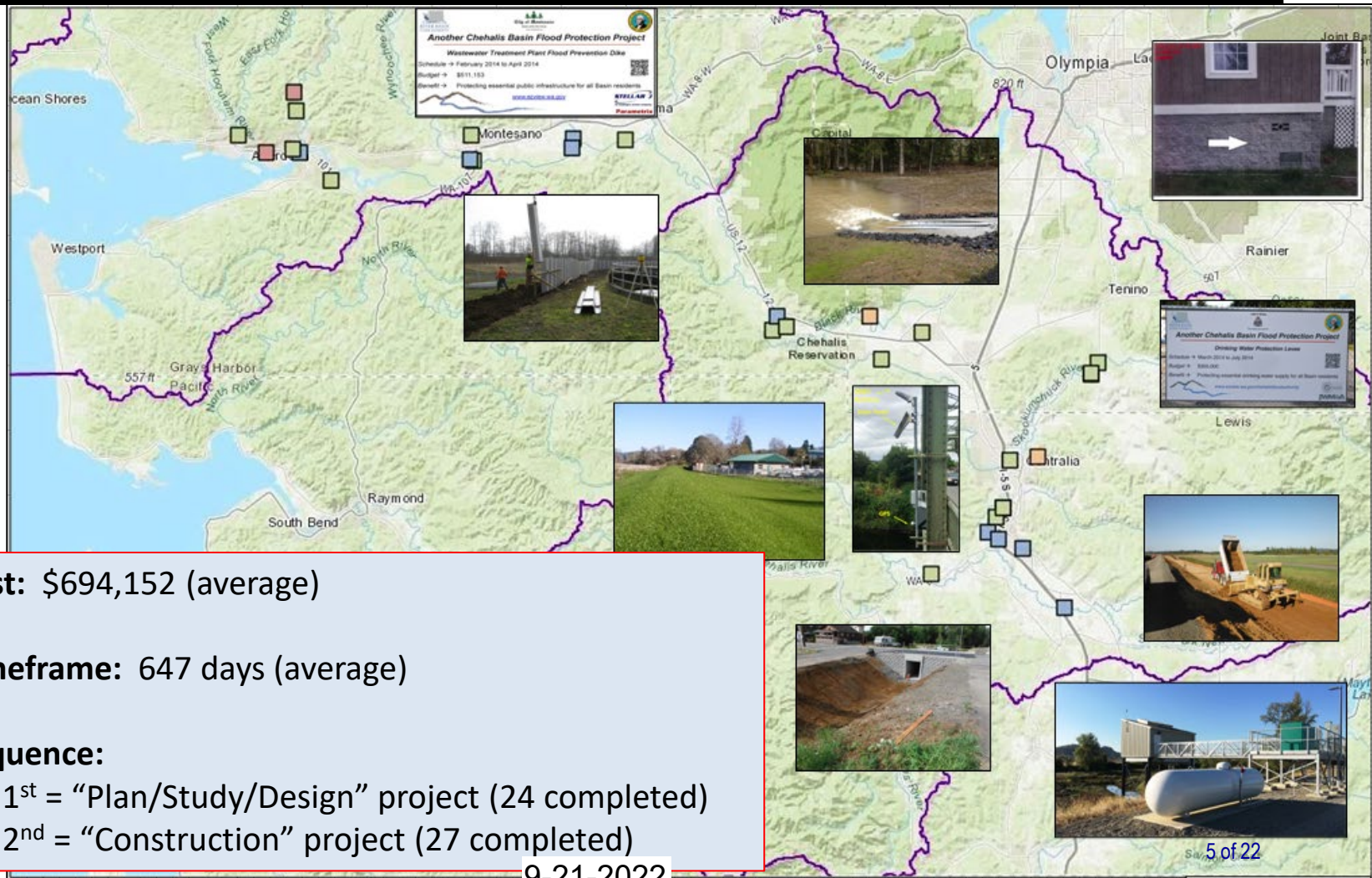


Local Projects (#1)

1. Reduce flood damage.
2. Protect people, property, infrastructure.
3. Improve readiness, response, resiliency.
 - *Drinking Water* (Boistfort, Bucoda).
 - *Wastewater* (Montesano, Pe Ell).
 - *Emergency Response* (Grays Harbor County, Chehalis-Centralia Airport).
 - *Regional Economic Infrastructure* (Montesano, Port of Chehalis, Port of Grays Harbor).
 - *Community Protection* (Aberdeen, Adna, Bucoda, Centralia, Chehalis, Chehalis Tribe, Cosmopolis, Hoquiam, Oakville).
 - *Flood Warning* (Basin-wide).

State Capital Budget:
2012-13 -- \$ 5.0M
2013-15 -- \$10.7M
2015-17 -- \$15.7M
2017-19 -- \$ 9.6M
2019-21 -- \$ 6.3M
2021-23 -- <u>\$ 4.1M</u>
\$51.4M

Local Projects (Completed 2012-23)



Cost: \$694,152 (average)

Timeframe: 647 days (average)

Sequence:

- 1st = "Plan/Study/Design" project (24 completed)
- 2nd = "Construction" project (27 completed)

COMPLETED FLOOD AND FISH – Mill Creek Dam

Local Projects (Cosmopolis)

Mill Creek Multi-Objective Implementation Plan:

- ✓ Part I = Reconstruct Mill Creek Dam (done).
- ✓ Phase II project = Address 4,500' of Mill Creek flow, culverts, and flood water evacuation (under development).



CHEHALIS RIVER BASIN FLOOD AUTHORITY
CITY OF COSMOPOLIS
Another Chehalis Basin Flood Protection Project
Mill Creek Dam Improvement Project
Schedule → October 2015 to July 2017
Budget → \$3,082,000
Benefit → Protecting and restoring essential Community flood control assets
www.ezview.wa.gov/chehalisfloodauthority
HDR



City of Cosmopolis, Sep 29, 2018



The Daily World
AGAIN, Voted
It's You that makes us better. BEST BANK & BEST PLACE TO GET A LOAN Thanks!

News Sports Life Opinion Weather Obituaries Print Editions Contests Classifieds All Sections

NEWS

New Mill Creek Dam ribbon cutting Saturday in Cosmopolis

September 28, 2018 7:00 pm

f t r e p

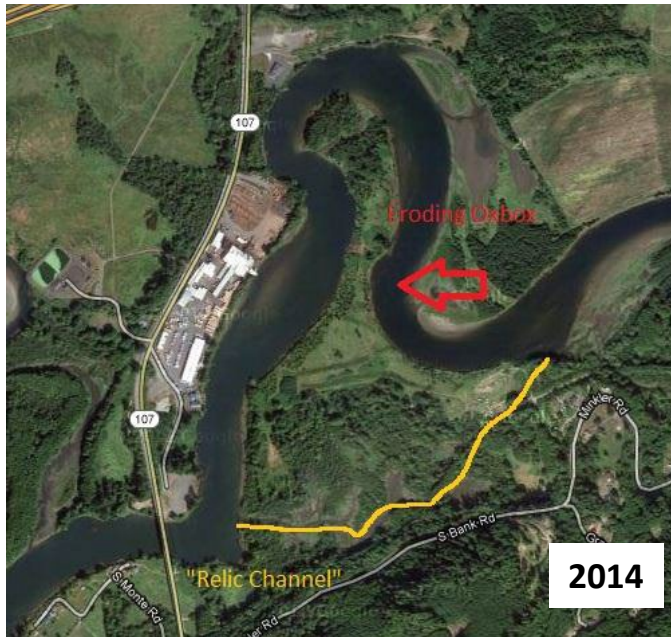


FILE PHOTO Cosmopolis Mayor Frank Chestnut (left) will officiate a ribbon cutting ceremony for the new Mill Creek Dam Saturday at noon.

<https://www.thedailyworld.com/news/new-mill-creek-dam-ribbon-cutting-saturday-in-cosmopolis/>

COMPLETED FLOOD – Mary's River Lumber and Montesano WWTP Chehalis River Protection Projects (2012-15)

Local Projects (Montesano)

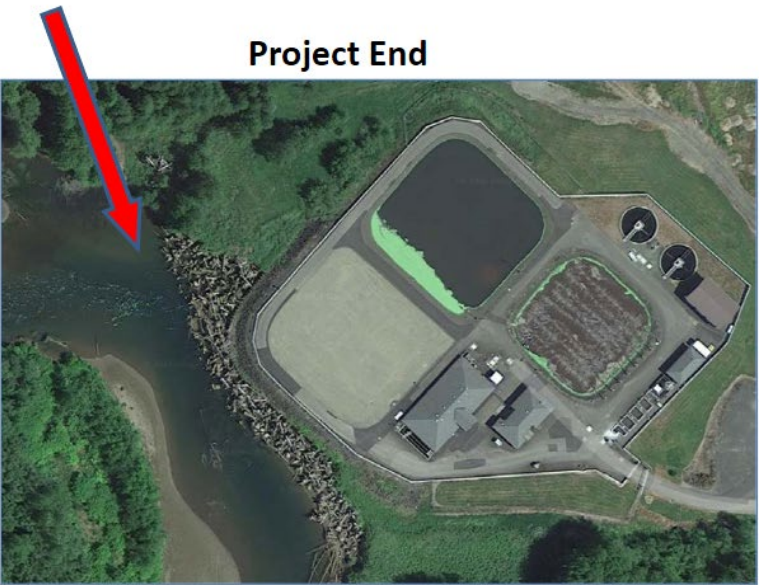


- ✓ ~\$6M protection against Chehalis River
- ✓ Funding pooled/shared.

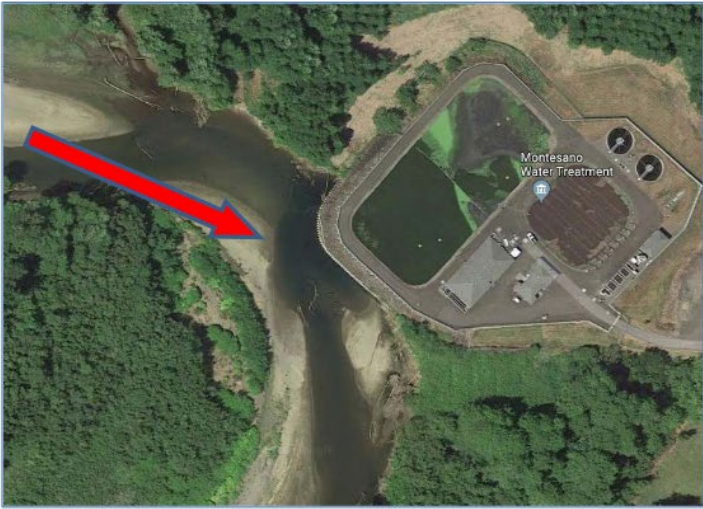
COMPLETED FLOOD AND FISH –
Montesano WWTP Protection
Project (2017-2020)

Local Projects (Montesano)

- ✓ Protect WWTP from on-coming Wynoochee river using 220+ “log-jacks.”
- ✓ \$2 million (for “log-jacks”).
- ✓ Small cost compared to WWTP relocation and environmental cleanup (in event of WWTP breaching).



<https://www.google.com/maps/@46.9678637,-123.6077821,197m/data=!3m1!1e3>



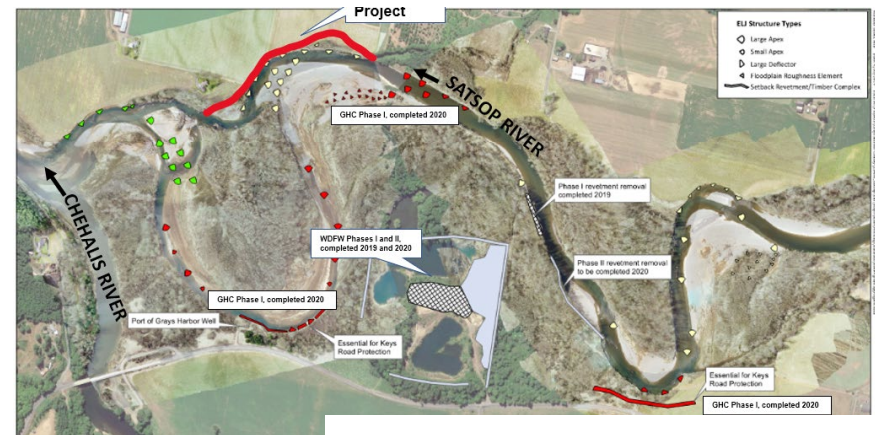
Project Start



Governor Inslee and Mayor Samuel stand overlooking the Wynoochee River.

July 7, 2022 →

Local Projects (Grays Harbor County, Grays Harbor Conservation District, WDFW)

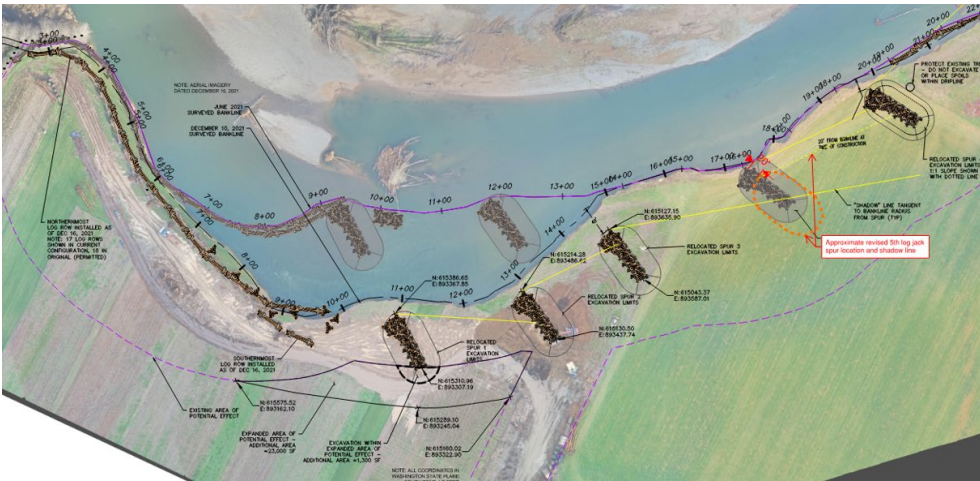


COMPLETED FLOOD AND FISH –

- 2022 Right Bank Conservation Project (Phase IB)
- 2020 Keys Road Infrastructure Protection (Phase IA)
- 2019-20 WDFW Ponds

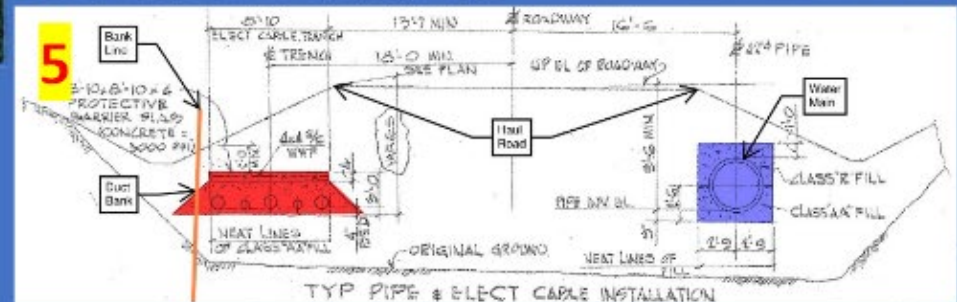
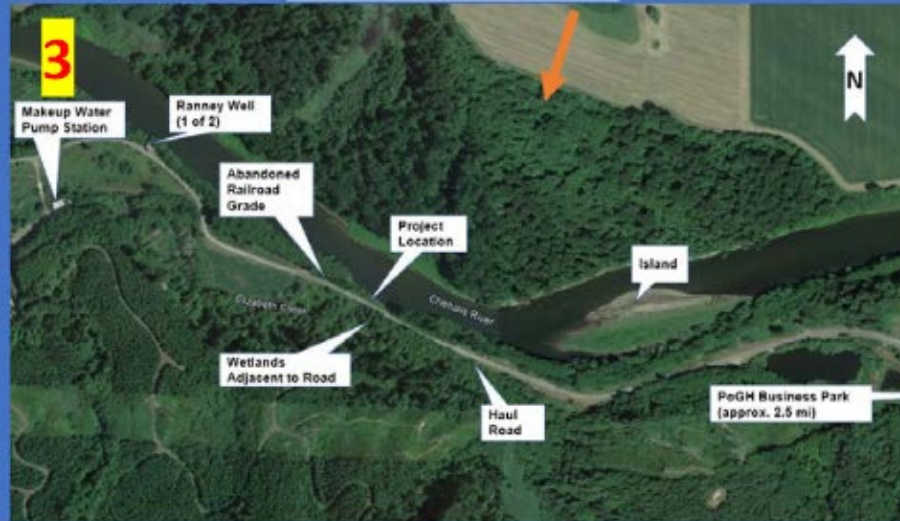


Image = 2019



UNDERWAY FLOOD AND FISH – “Haul Road” Emergency Repair (2022)

Local Projects (Port of Grays Harbor)



← 9/14/2022

COMPLETED FLOOD AND FISH –
Cloquallam Creek Erosion Pilot (36 Lower
Falls Creek Rd)

Local Projects (Grays Harbor Conservation District)

Land owner Help?

 Tuttle, Megan E (DFW)
To  Scott Boettcher;  Anthony Waldrop 9/15/2021
 You forwarded this message on 9/22/2021 1:41 PM.

Hi Scott and Anthony,

I hope this week finds you well. I wanted to reach out for a Landowner on the Cloquallum (36 Lower Falls Creek rd) that is experiencing highly erosive banks and is about 36 ft from their home and 15ft from their septic drain field. The pervious land

Request -- 9-15-2021

- ✓ Highly-collaborative emergency project to protect property and septic drain field
- ✓ Property and drain field saved, environmental contamination and clean-up avoided.

\$ 15,000 Landowner
\$ 75,000 OCB Erosion Program
\$112,500 Flood Authority
\$205,500 Total



Construction -- 11-23-2021



Post-Construction -- 12-01-2021

COMPLETED FLOOD – Chehalis-Centralia Airport

Local Projects (Chehalis)



January 2022



New Pump -- 2017



Old Pump – 1940s



Widening/Repairing

Levee – 2014

9-21-2022

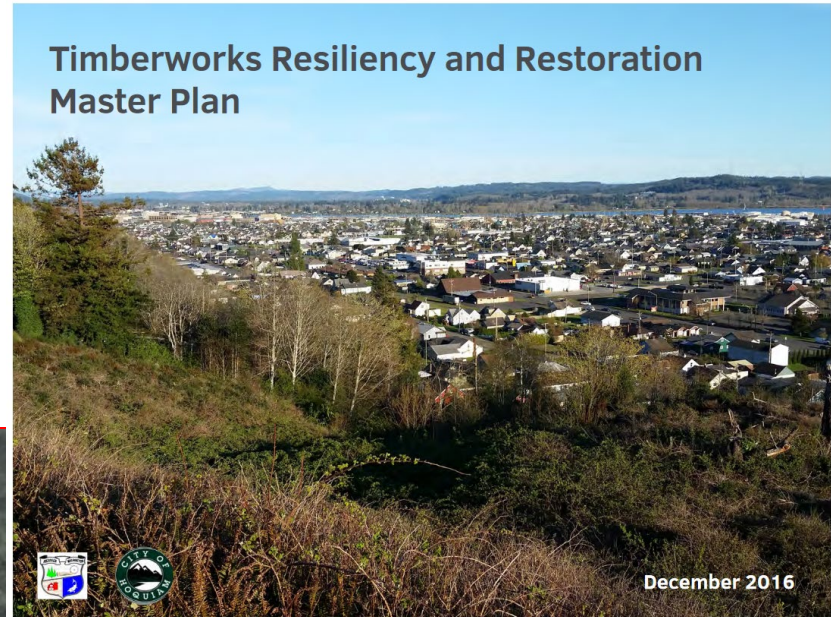
- ✓ New Pump Cost = \$1.1M
- ✓ Widening Levee = \$1.2M
- ✓ ROI = Substantial:
 - Jobs: 1,658
 - Labor income: \$68 million
 - Value added: \$115.3 million
 - Business revenues: \$186.4 million
 - Annual tax revenues (local, state): ~\$9M
- ✓ 1/2022 High-water event = Airport stayed operational

UNDERWAY FLOOD – North Shore
Levee and West Segment

Local Projects (Aberdeen, Hoquiam)

COMPLETED 2016 – Timberworks
(precursor to currently underway North
Shore Levee for Aberdeen and
Hoquiam)

Timberworks Resiliency and Restoration
Master Plan



North Shore Levee—West Segment

CITY OF HOQUIAM






North Shore Levee

CITY OF HOQUIAM

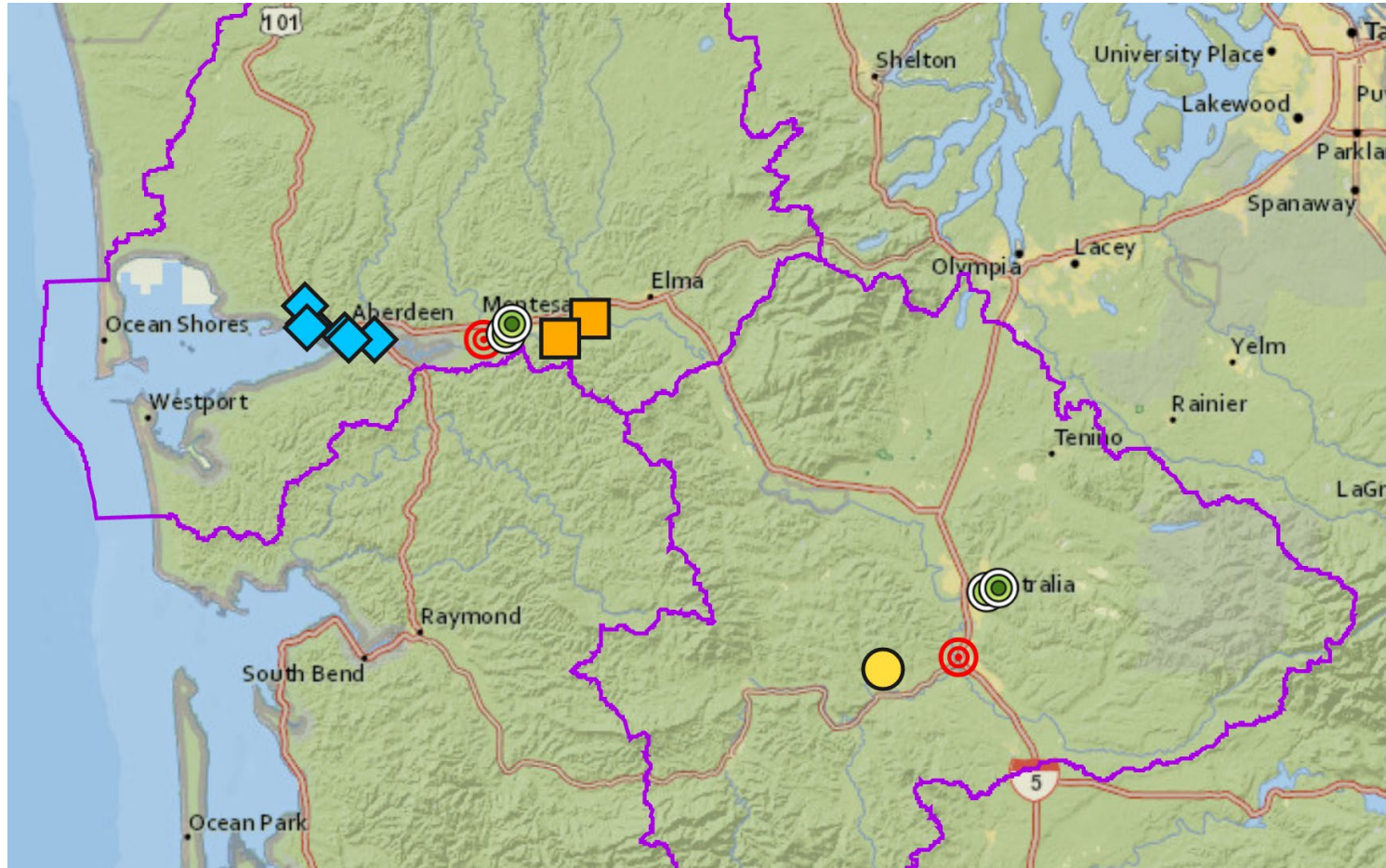
CITY OF ABERDEEN

15 Proposed Projects, \$25,971,170

Local Projects Under Evaluation For 2023-25

-  Pump Station
-  Farm Pad
-  Erosion
-  Infrastructure
-  Study

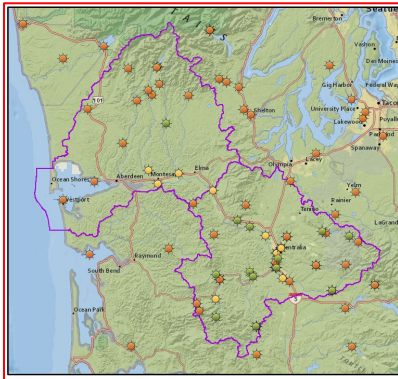
View interactive map
<https://arcg.is/0rOj450>





Click icon to sign-up for email gage alerts.

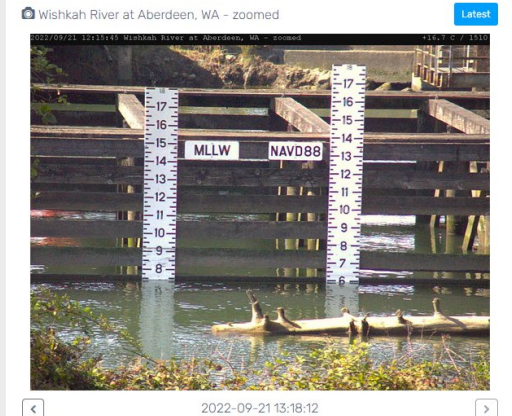
Flood Warning System (#2)



Looking at downstream face of Heron St. bridge



Looking at Wishkah River staff gage



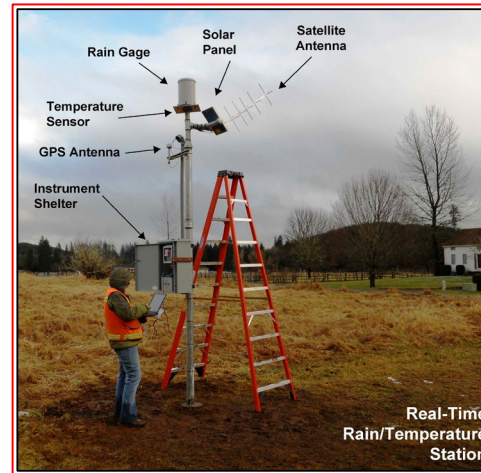
CHEHALIS RIVER BASIN FLOOD AUTHORITY
www.chehalisriverflood.com

Home Map Sites News Dashboards

Rainfall Summary River Summary Additional Resources

- Weather Forecast
- Rainfall Forecast
- River Forecast
- Flood Maps
- Plot Gage Data
- Gage Data Maps
- Landslide
- Radar Rainfall
- Road Conditions
- USGS Gages
- Atmospheric Rivers
- Chehalis Basin Gage Height Conversion Project

Photo Credit: www.chehalisbasinstrategy.com



- ✓ Developed with State Capital Budget \$.
- ✓ Maintained with local \$.

9-21-2022



Click icon to sign-up for email gage alerts.

Flood Warning System (2022 Flood Event)

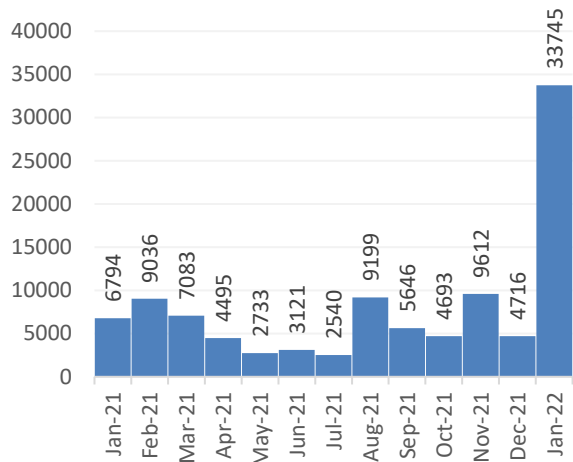
Flood Warning System Works!

The Flood Authority's flood warning system website was incredibly active during the January flood. Nearly 25,000 individual user logins were recorded and the flood inundation maps received almost 75,000 hits, providing vital information to the community during the flood emergency. *Dave Curtis, West Consultants, 2/01/2022*

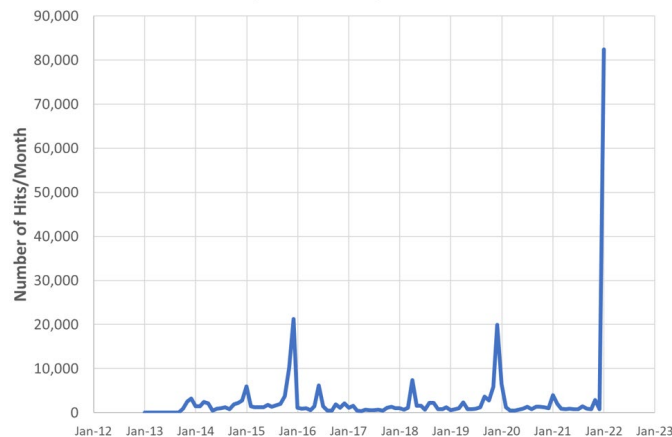
Unknown contact said:

"Our house flooded in '96 and '07--we like to be prepared The gauges and alerts give us more peace of mind. Info=peace of mind" *Survey Respondent, 2/01/2022*

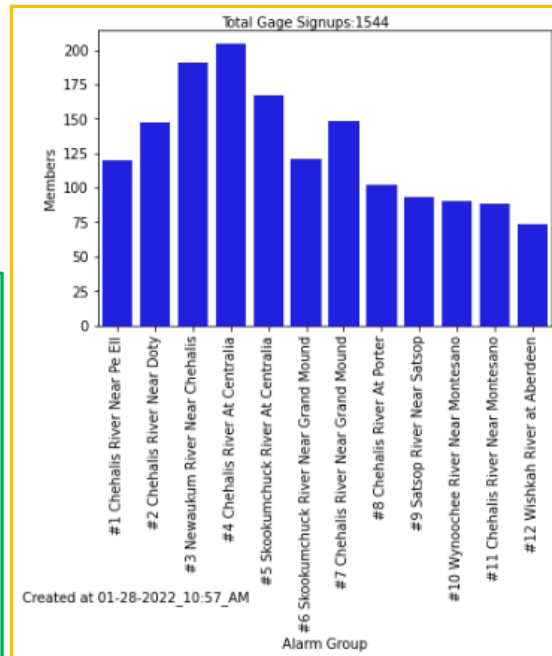
Chehalis FA Website Visits



Chehalis River Basin Flood Authority Flood Warning System Monthly Inundation Map Website Hits



9-21-2022



Flood Authority Role (#3)

Local Resolutions Favoring Basin-Wide Solution

File Name	File Size	Category	Date Added
Aberdeen -- 2020-07-29 -- 2020-14.pdf	84 KB	2020	08/05/20 01:25 PM
Aberdeen -- 2021-01-27 -- 2021-05.pdf	1.3 MB	2021	03/18/21 05:27 AM
Bucoda -- 2020-06-09 -- 2020-04.pdf	610 KB	2020	07/15/20 10:38 AM
Bucoda -- 2021-02-08 -- 2021-01.pdf	862.3 KB	2021	03/18/21 05:11 AM
Centralia -- 2016-11-08 -- 2652.pdf	76 KB	2016	07/15/20 10:38 AM
Centralia -- 2020-05-26 -- 2718.pdf	809.8 KB	2020	07/15/20 10:39 AM
Centralia -- 2021-02-09 -- 2733.pdf	1 MB	2021	03/18/21 09:11 AM
Chehalis -- 2010-02-22 -- 5-2010.pdf	40.8 KB	2010	07/15/20 10:39 AM
Chehalis -- 2016-10-24 -- 19-2016.pdf	40.2 KB	2016	07/15/20 10:39 AM
Chehalis -- 2020-04-27 -- 6-2020.pdf	239 KB	2020	07/15/20 10:39 AM
Chehalis -- 2021-02-08 -- 2-2021.pdf	553.8 KB	2021	03/18/21 05:10 AM
Cosmopolis -- 2020-05-20 -- 2020-01.pdf	122 KB	2020	07/15/20 10:40 AM
CRBFA -- 2021-01-21 -- Resolution.pdf	130.3 KB	2021	03/18/21 05:09 AM
CRBFA Letter Re NEPA DEIS 11-13-2020 (additional 11-19-2020).pdf	252.7 KB	2020	02/01/21 09:12 AM
CRBFA Letter Re NEPA DEIS 11-13-2020.pdf	3.5 MB	2020	02/01/21 09:12 AM
Final CRBFA Letter Re DEIS 4-21-2020.pdf	293 KB	2020	02/01/21 09:11 AM
Grays Harbor County -- 2016-11-14 -- 2016-129.pdf	98.6 KB	2016	07/15/20 10:40 AM
Grays Harbor County -- 2020-05-19 -- 2020-054.pdf	92.8 KB	2020	07/15/20 10:40 AM
Grays Harbor County -- 2021-04-06 -- 2021-031.pdf	126.2 KB	2021	04/07/21 10:19 AM
Hoquiam -- 2021-04-12 -- 2021-12.pdf	110.1 KB	2021	04/16/21 10:14 AM
Hoquiam -- 2020-08-10 -- 2020-12.pdf	88.8 KB	2020	08/14/20 03:52 PM
Lewis County -- 2016-10-24 -- 16-287.pdf	71.7 KB	2016	07/15/20 10:40 AM
Lewis County -- 2020-05-11 -- 20-154.pdf	651 KB	2020	07/15/20 10:40 AM
Lewis County -- 2021-02-01 -- 21-046.pdf	1.2 MB	2021	03/18/21 05:10 AM
Montesano -- 2020-06-10 -- 959.pdf	503.2 KB	2020	07/15/20 10:41 AM
Napavine -- 2020-07-28 -- 20-07-110.pdf.pdf	463.1 KB	2020	07/29/20 11:25 AM
Oakville -- 2020-07-20 -- 424.pdf.pdf	288.5 KB	2020	07/21/20 12:06 PM
Pe Ell -- 2010-04-06 -- 184.pdf	56.9 KB	2010	07/15/20 10:41 AM
Pe Ell -- 2010-12-28 -- 192.pdf	56.4 KB	2010	07/15/20 10:41 AM
Pe Ell -- 2012-09-18 -- 201.pdf	55.4 KB	2012	07/15/20 10:41 AM
Pe Ell -- 2016-11-15 -- 232.pdf	76.7 KB	2016	07/15/20 10:42 AM
Pe Ell -- 2020-06-01 -- 251.pdf		2020	07/15/20 10:42 AM
Pe Ell -- 2021-03-02 -- 260.pdf	134 KB	2021	03/18/21 05:11 AM

9-21-2022

- ✓ **Help** local communities identify, develop, implement local flood hazard solutions.
- ✓ **Appoint** 3 of 7 members to Chehalis Basin Board (current appointees are Vickie Raines, Edna Fund, Jay Gordon).
- ✓ **Provide** local perspective to Basin-Wide solution discussions.
- ✓ **Advocate** for balanced basin-wide fish and flood solutions (see local resolutions library [here](#)).
- ✓ **Work** as a team. 17 of 22

Chehalis Basin Strategy



Office of Chehalis
Basin

Chehalis Basin
Board

<https://chehalisbasinstrategy.com/>

appoints 3
member



Chehalis Basin Board

Community leaders, Chehalis and
Quinault tribal representatives,
local and state government liaisons

Office of Chehalis Basin

Small team within the WA
Department of Ecology

"Network of Partners"

Organizations and local
entities who turn ideas into
shovel-ready reality

Chehalis Basin Strategy

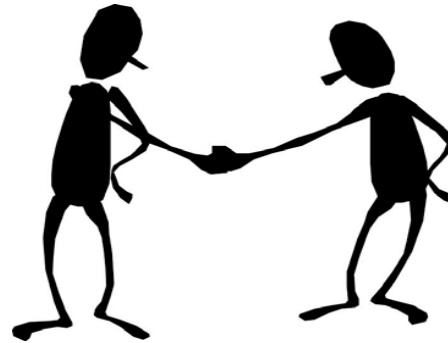
“Network of Partners”



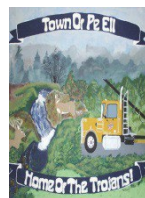
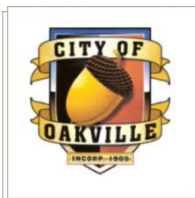
Office of Chehalis
Basin

Chehalis Basin
Board

<https://chehalisbasinstrategy.com/>



Chehalis Lead Entity



WASHINGTON STATE DEPARTMENT OF
Natural Resources

TOWN of BUCODA



9-21-2022

Looking Ahead

- ✓ **Proposed Flood Retention Facility** – DRAFT EISs were issued February 2020 (SEPA) and September 2020 (NEPA). Chehalis River Basin Flood Control Zone District (project proponent) working diligently to provide refinements and clarifications for FINAL EIS. Final EISs are currently scheduled for release in late 2022/early 2023.
- ✓ **Local Projects** – 2023-25 call for local projects issued June 30, 2022. Evaluation underway now.
- ✓ **Sign-Up For Email Gage Alerts** – www.chehalisriverflood.com



Click icon to sign-up for email gage alerts.

Key Contacts

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

Edna Fund, Lewis County Representative

Vice-Chair, Chehalis River Basin Flood Authority

Member, Chehalis Basin Board

360/269-7514

dutch@localaccess.com

Darrin Raines, Cosmopolis Representative

Member, Chehalis River Basin Flood Authority

360/532-9230

draines@cosmopoliswa.gov

Scott Boettcher

Staff, Chehalis River Basin Flood Authority

360/480-6600

scottb@sbgh-partners.com



Thank You!

This Presentation:

Available at “Chehalis River Basin Flood Authority” Website at
https://www.ezview.wa.gov/site/alias__1492/34490/outreach_education.aspx

Email Distribution Lists:

Megan Sathre (Flood Authority)
megan.sathre@lewiscountywa.gov

Cindy Bradley (Office of Chehalis Basin)
Cindy.Bradley@ecy.wa.gov

Also -- Key Links

Key Organizations:

1. Chehalis River Basin Flood Authority -- www.ezview.wa.gov/chehalisfloodauthority
2. Office of Chehalis Basin -- <https://ecology.wa.gov/About-us/Get-to-know-us/Our-Programs/Office-of-Chehalis-Basin>
3. Chehalis Basin Board -- https://www.ezview.wa.gov/site/alias_1962/37068/chehalis_basin_board.aspx

Key Activity Areas:

1. Local Projects -- https://www.ezview.wa.gov/site/alias_1492/34489/local_projects.aspx
2. Flood Warning System -- www.chehalisriverflood.com
3. Chehalis Basin Strategy -- www.chehalisbasinstrategy.com
 - ASRP -- <https://chehalisbasinstrategy.com/asrp/>
 - CFAR -- <https://chehalisbasinstrategy.com/cfar/>
 - Proposed Retention Project -- <https://chehalisbasinstrategy.com/proposed-project/>
 - Chehalis River Basin Flood Control Zone District -- <https://www.chehalisriverbasinfczd.com/>
 - State EIS (SEPA) -- <https://chehalisbasinstrategy.com/sepa-process/>
 - Federal EIS (NEPA) -- <https://chehalisbasinstrategy.com/federal-envl-review/>
 - Flood Retention Facility (visualization) -- <https://www.youtube.com/watch?app=desktop&v=cKTejUE3WsU>
 - Skookumchuck Dam -- <https://chehalisbasinstrategy.com/skookumchuck-dam-study/>
 - LAND -- <https://chehalisbasinstrategy.com/local-actions-non-dam-alternative/>

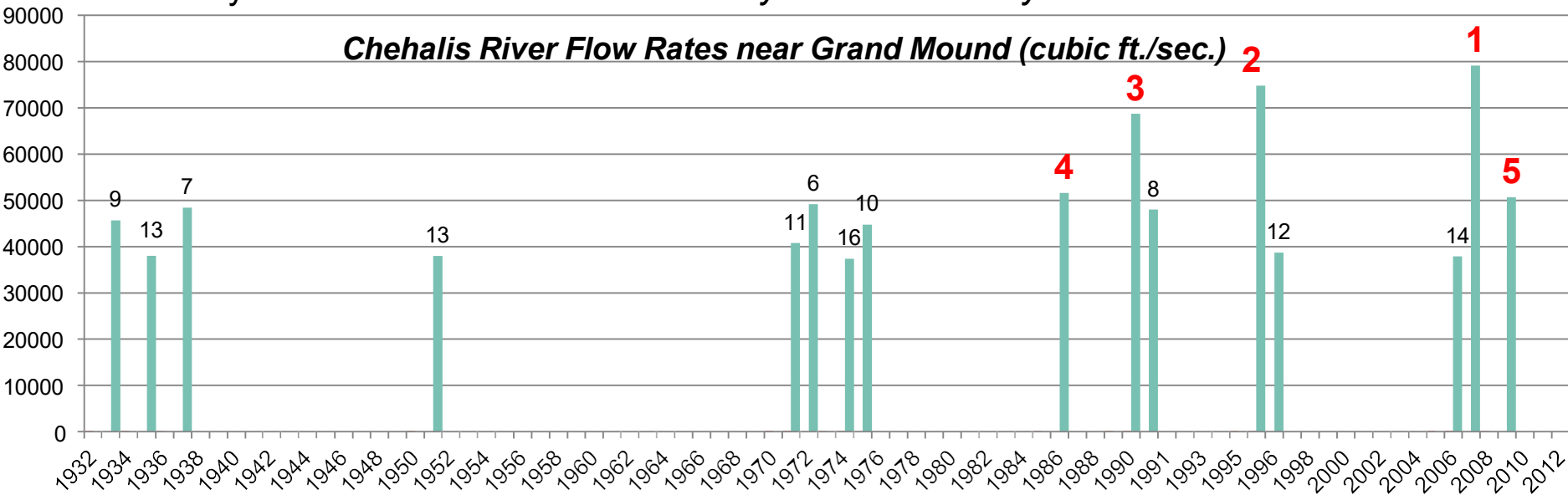
Also → Sign-Up for Email Gage Alerts – <https://chehalis.onerain.com/upload/files/6a9bf8e2-f04b-4165-8a9f-ce031d5db6b4.pdf>

Also -- 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.)



Also -- Background

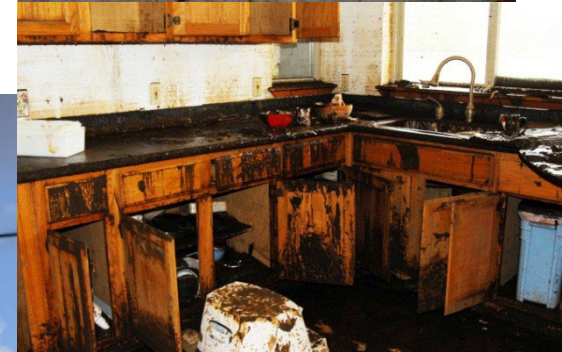
- 2007 Storm -- \$938M Basin-wide damage, \$300M lost economic activity (WA).



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

