

Chehalis River Basin Flood Authority

*Reducing Flood Damage and
Restoring Aquatic Species*

City of Montesano

July 26, 2022

Scott Boettcher

Staff, Chehalis River Basin Flood Authority
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Today's Presentation

- Describe the “Flood Authority”

- #1 -- Local Projects

- #2 -- Flood Warning System

- #3 – Role

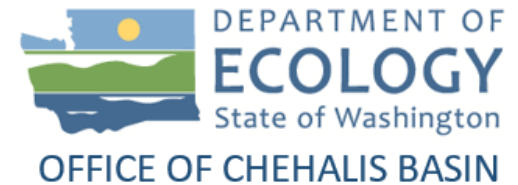


- Touch on “Office of Chehalis Basin” and “Chehalis Basin Strategy”

- 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)

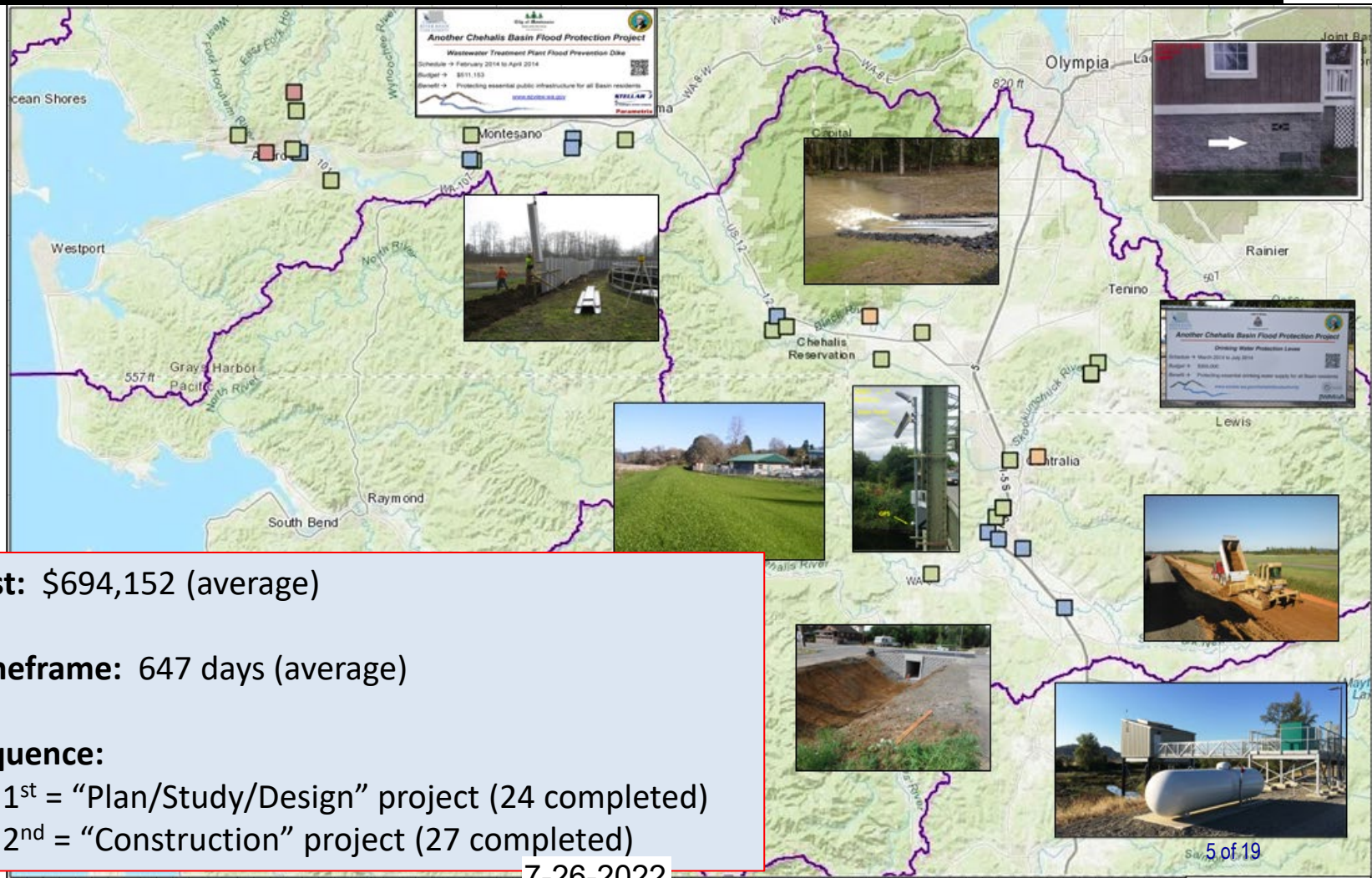


Local Projects (#1)

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 -- \$ 4.1M
\$51.4M

Local Projects (Completed 2012-23)



Cost: \$694,152 (average)

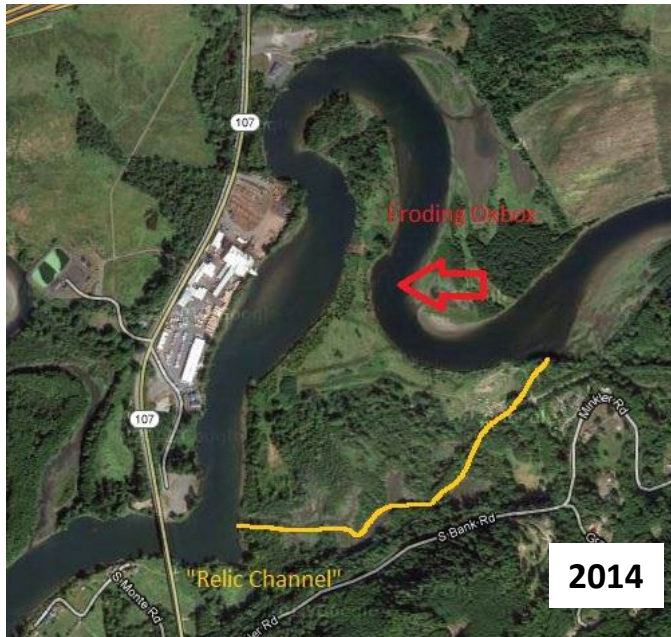
Timeframe: 647 days (average)

Sequence:

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

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

Local Projects (Montesano)

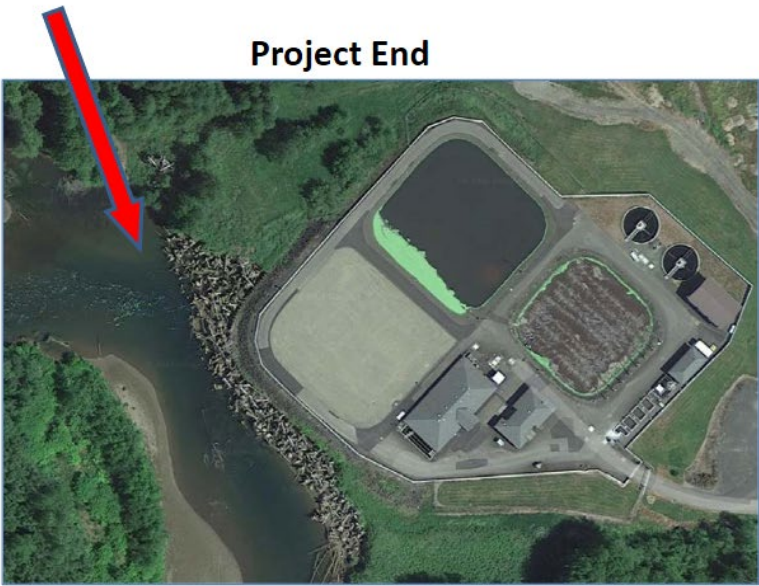


- ✓ ~\$6M protection against Chehalis River
- ✓ Funding pooled/shared.

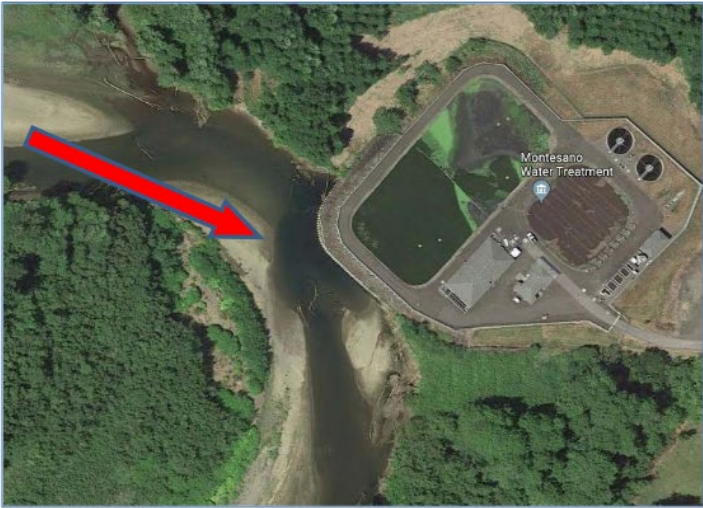
COMPLETED FLOOD AND FISH –
Montesano WWTP Protection
Project (2017-2020)

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 (Boistfort Valley)

COMPLETED FLOOD – Boistfort Valley Water Pre-Sedimentation Pond

✓ Construct pre-sedimentation pond to settle-out flood-generated sediment before entering water treatment plant.

✓ Sediment choked-out treatment plant in 2007 for 6 months and drinking water had to be trucked in.

✓ \$332,350

✓ More prepared now.



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COMPLETED FLOOD – Chehalis-Centralia Airport

Local Projects (Chehalis)



January 2022



New Pump -- 2017



Old Pump – 1940s



Widening/Repairing

Levee – 2014

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- ✓ 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

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

Local Projects (Grays Harbor County)

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



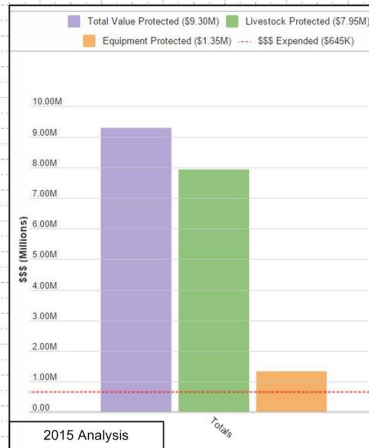
Post-Construction -- 12-01-2021

COMPLETED – Farm Pads (Lewis and Grays Harbor counties)

Local Projects (Farm Pads)

January 2022 Flood Event (Bob Amrine, Lewis CD):

- Farm pads worked for those who used their pads (animals did not drown like in 2007 and equipment was saved).
- Farmers were grateful that their livelihoods could continue, and their animals were out of harm's way (though in some cases they wish they had larger pads for more equipment).



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>.

★ → Complete
 ★ → Underway

"local solutions to local problems"
THURSTON CONSERVATION DISTRICT

Grays Harbor Conservation District
 Est. 1941

Lewis County Conservation District

Animal/Equipment Now Protected:

- Beef 4
- Bulls 3
- Calves 210
- Cows 2,480
- Goats 118
- Heifers 645
- Horses 77
- Sheep 165
- Yearlings 9
- Tractors 36
- Pieces 42

Farm Pads, Evacuation Routes (2012-19)



www.ezview.wa.gov/chehalisfloodauthority



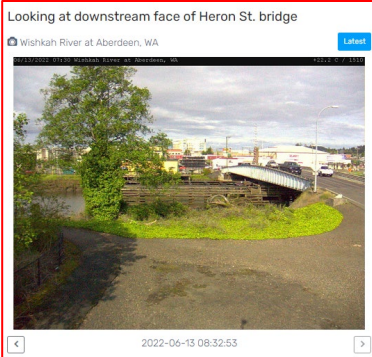
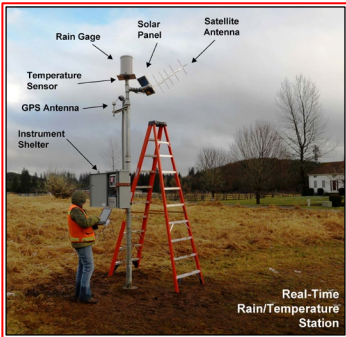
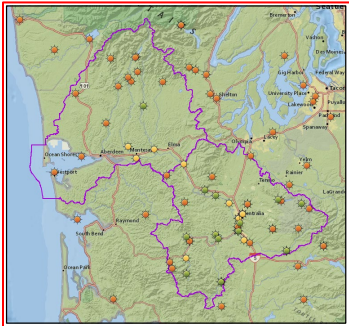
Contact: Scott Boettcher; Staff, Chehalis River Basin Flood Authority; 360/480-6600; scottb@sbg-h-partners.com

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Click icon to sign-up
for email gage alerts.

Flood Warning System (#2)



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 \$.

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Click icon to sign-up for email gage alerts.

Flood Warning System (2022 Flood Event)

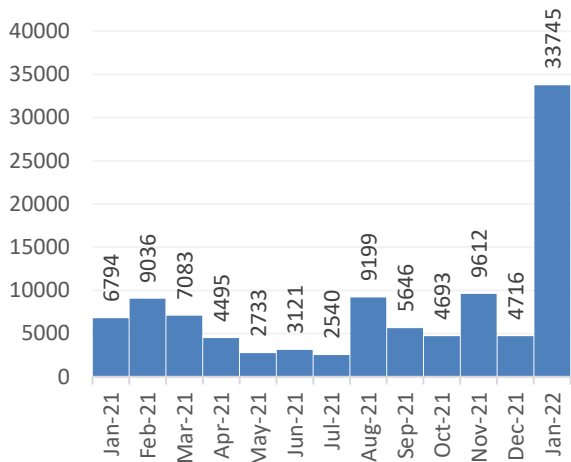
Flood Warning System Works!

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*

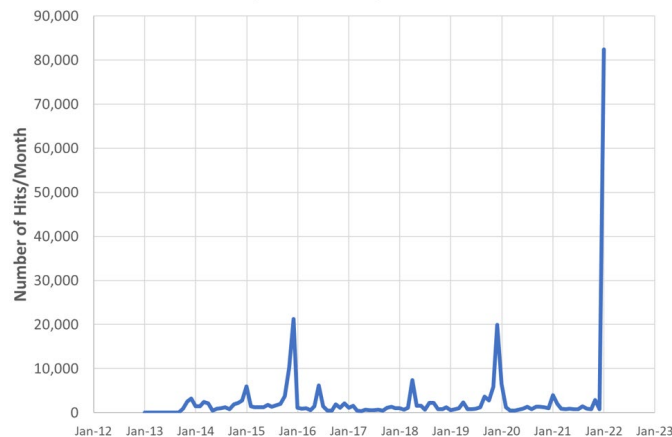
Unknown contact said:

"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*

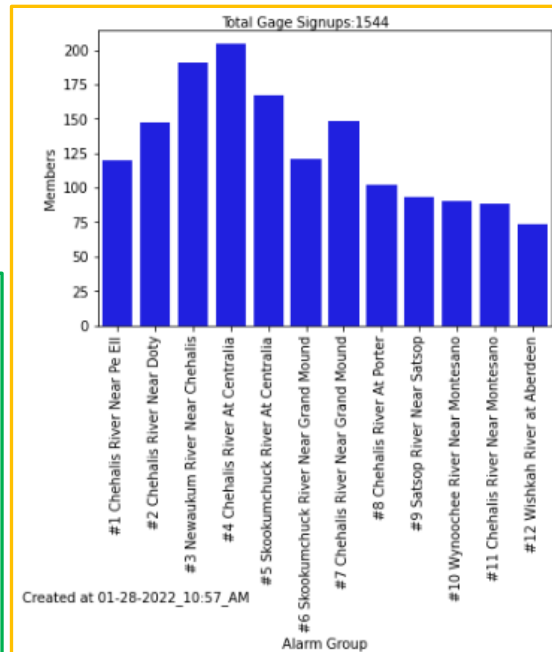
Chehalis FA Website Visits



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



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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

7-26-2022

- ✓ **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. 14 of 19

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

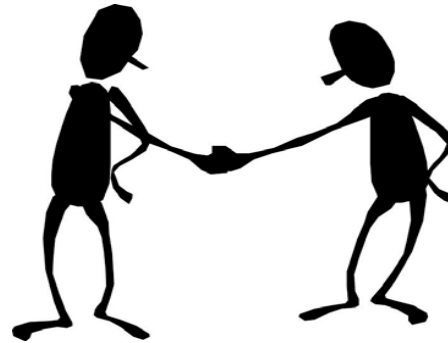
“Network of Partners”



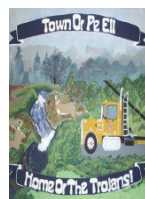
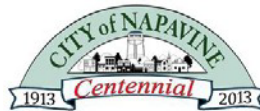
Office of Chehalis
Basin

Chehalis Basin
Board

<https://chehalisbasinstrategy.com/>



Chehalis Lead Entity



WASHINGTON STATE DEPARTMENT OF
Natural Resources

TOWN of BUCODA



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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 (due 8/03/2022). https://www.ezview.wa.gov/site/alias_1492/37773/2023-25-local-projects-recruitment-process.aspx
- ✓ **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

Mike Olden, *Montesano Representative*

Member, Chehalis River Basin Flood Authority

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molden@montesano.us

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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/>

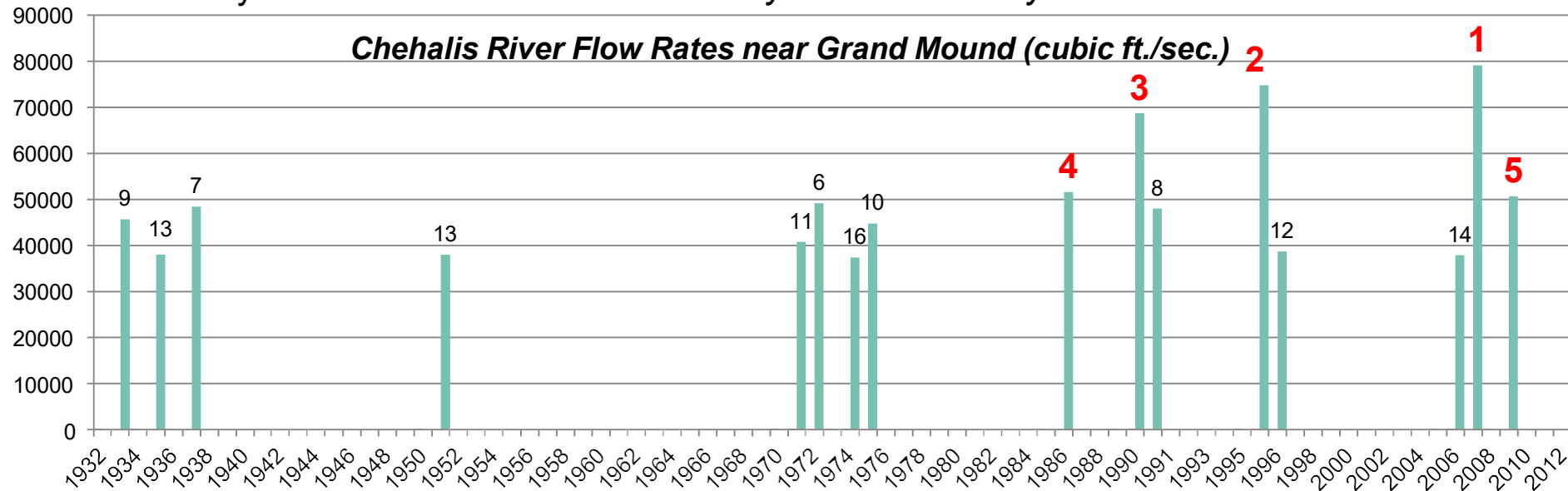
Also → Sign-Up for Email Gage Alerts – <https://chehalis.onerain.com/upload/files/6a9bf8e2-f04b-4165-8a9f-ce031d5db6b4.pdf>

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