

# Chehalis River Basin Flood Authority

*Reducing Flood Damage and  
Restoring Aquatic Species*

**Lewis County**

**June 29, 2022**

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**Scott Boettcher**

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# Today's Presentation

- Describe the “Flood Authority”

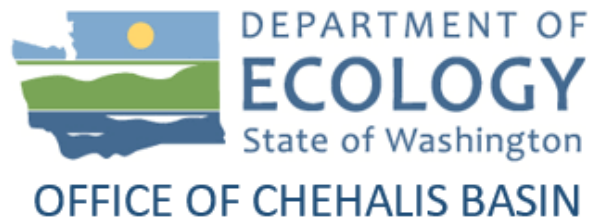
- #1 -- Local Projects

- #2 -- Flood Warning System

- #3 – Role

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

- Allow time for discussion



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)

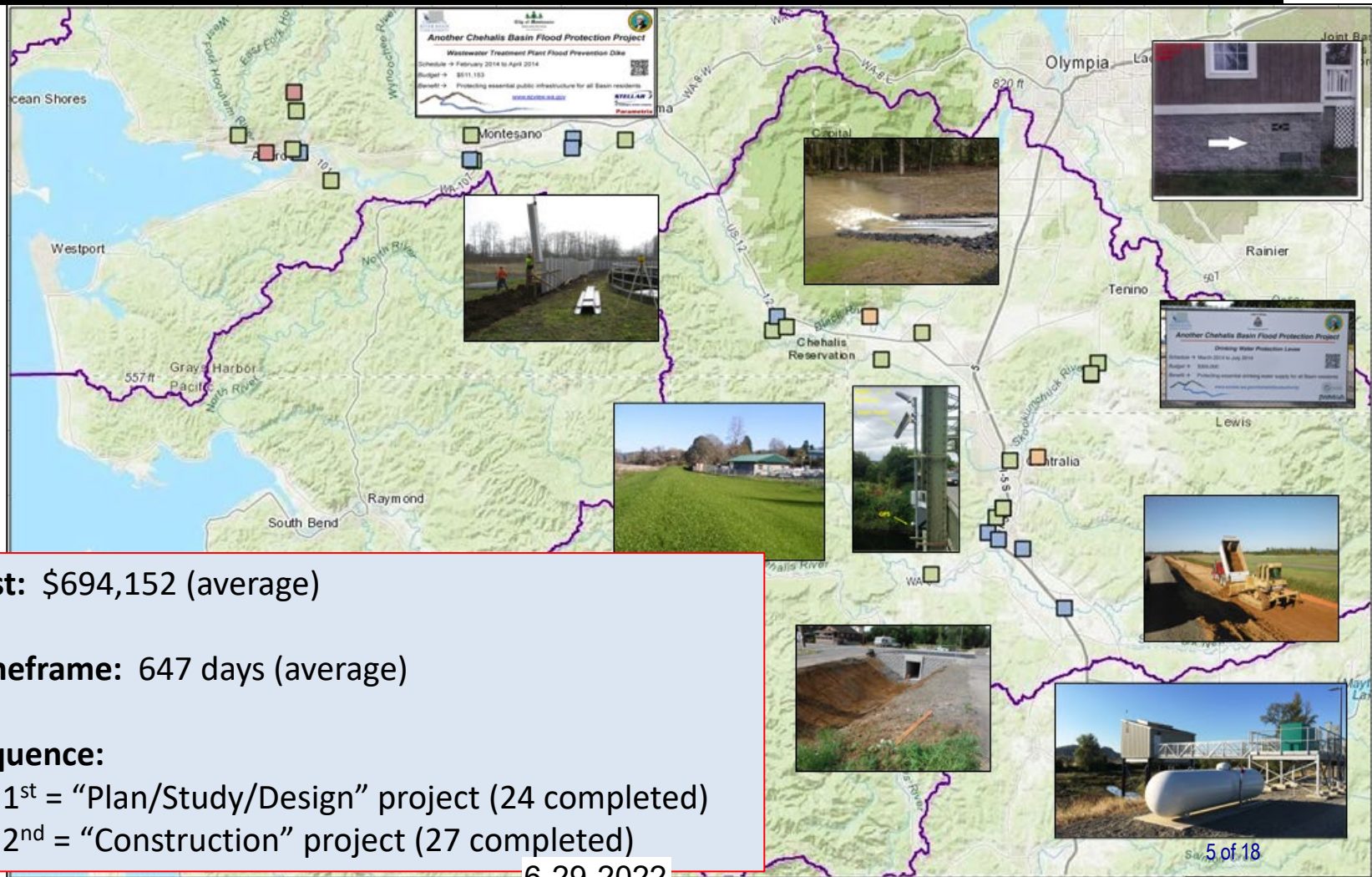


# Local Projects (#1)

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:**

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

**COMPLETED** – Chehalis-Centralia Airport

# Local Projects (Chehalis-Centralia)



**January 2022**



**New Pump -- 2017**



**Old Pump – 1940s**



**Widening/Repairing**

**Levee – 2014**

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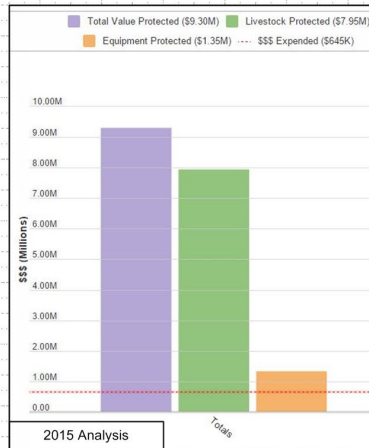
- ✓ New Pump Cost = \$1.1M
- ✓ Widening Levee = \$1.2M
- ✓ ROI = Substantial (~\$9M annual in local and state tax revenues)
- ✓ 1/2022 High-water event = Airport stayed operational

**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](http://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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**COMPLETED** – Boistfort Valley Water Pre-Sedimentation Pond

# Local Projects (Boistfort Valley)



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**COMPLETED** – Adna Levee Project (2013)

# Local Projects (Adna)



# UNDERWAY – Chehalis Industrial Park: “Regionalized Floodwater Management Approach”

## Local Projects (Chehalis Industrial Park)

### BEFORE THE BOARD OF COUNTY COMMISSIONERS LEWIS COUNTY, WASHINGTON

RESOLUTION NO. 20-163

#### IN THE MATTER OF:

APPROVE A .09 (“DISTRESSED COUNTIES”) GRANT  
AGREEMENT WITH LEWIS COUNTY FLOOD CONTROL  
DISTRICT #1

**WHEREAS**, by Resolution the Lewis County Board of County Commissioners approve funding in the amount of \$156,000.00 for the Flood Reduction Projects in the LCFCFD #1 a project to serve future demand, a project that meets the definition of a “public facility” under RCW 82.14.370; and

**WHEREAS**, the Comprehensive Economic Development Strategy (CEDS) is a list of projects maintained by the Lewis County Economic Development Council (EDC) (RCW 82.14.370); and

**WHEREAS**, Lewis County Flood Control District #1 application for funding of the Flood Reduction Projects in the LCFCFD #1 project has been recommended for approval and listing in the CEDS by the Distressed Counties/Rural Economic Development Public Facilities Advisory Committee, the Committee created to recommend projects for listing in the CEDS; and

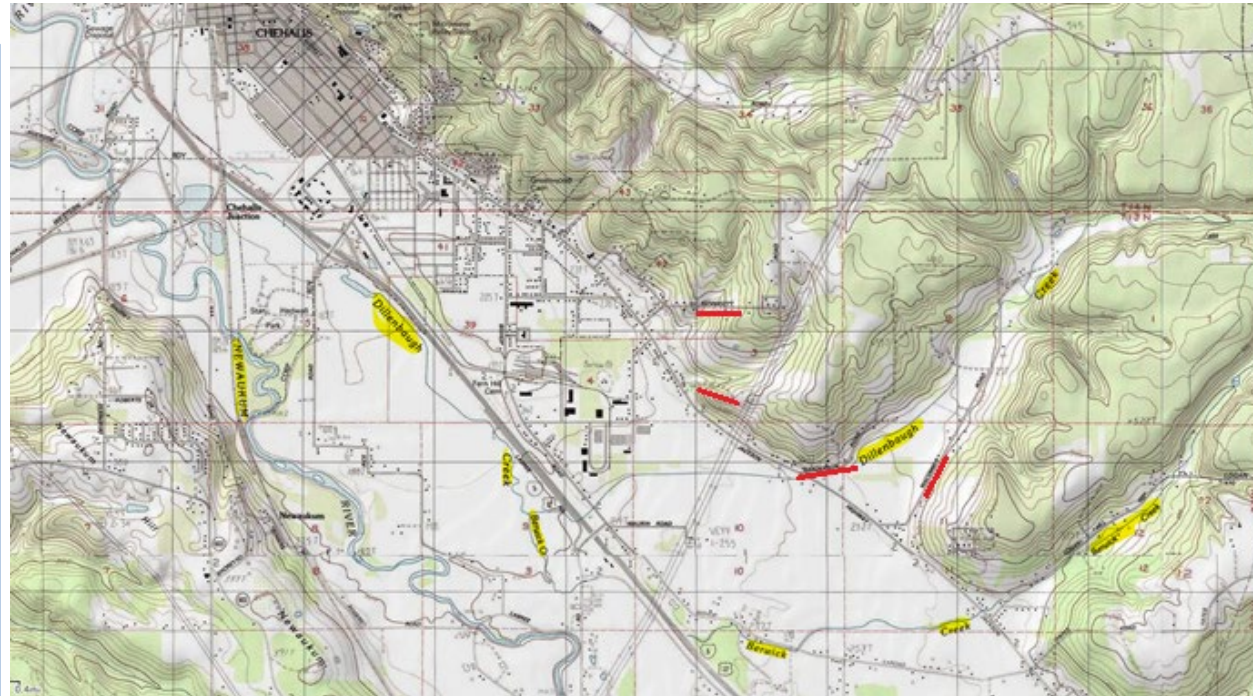
**WHEREAS**, the Lewis County Flood Control District #1 application is also supported by the attached Grant Agreement prepared by the EDC pursuant to the CEDS, which Agreement is incorporated herein by reference; and

**WHEREAS**, it is in the best interest of the citizens of Lewis County that the funds requested by CEDS be authorized in order to allow completion of the “Flood Reduction Projects in the LCFCFD #1” a project that supports economic development in our community.

**NOW THEREFORE BE IT RESOLVED** that the Lewis County Board of County Commissioners (BOCC) approves the Flood Reduction Projects in the LCFCFD #1 project as a public facility for purposes of RCW 82.14.370 and amends the Community Economic Development Strategies (CEDS) list to include that project in the county’s overall economic development plan; and

**NOW THEREFORE BE IT FURTHER RESOLVED** that the BOCC authorizes Lewis County to enter into the attached Grant Agreement with the Lewis County Flood Control District #1, for the Flood Reduction Projects in the LCFCFD #1 project, in the amount of \$156,000.00 using monies from the “Distressed Counties Fund,” all in accordance with RCW 82.14.370 and applicable law.

DONE IN OPEN SESSION this 18th day of May, 2020.



Vicinity Topography, Lewis County GIS Web Map



2019 Flooding, Rick Rouse

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Chehalis River Basin  
Flood Warning System  
www.chehalisriverflood.com



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for email gage alerts.

# Flood Warning System (#2)

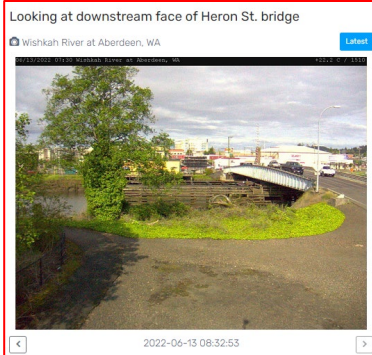
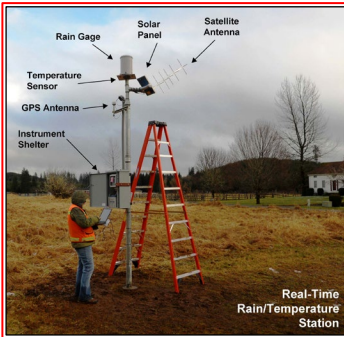
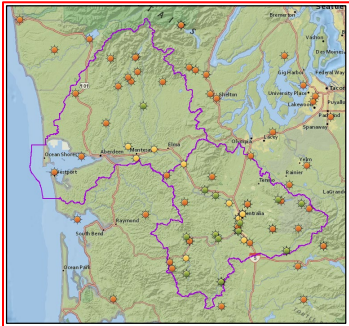
CHEHALIS RIVER BASIN FLOOD AUTHORITY [www.chehalisriverflood.com](http://www.chehalisriverflood.com)

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)

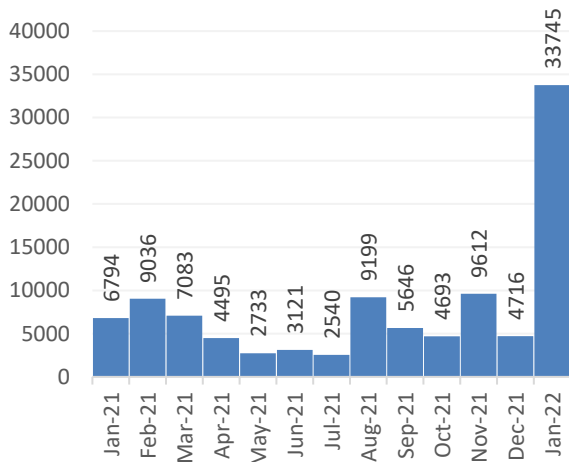
## Flood Warning System Works!

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*

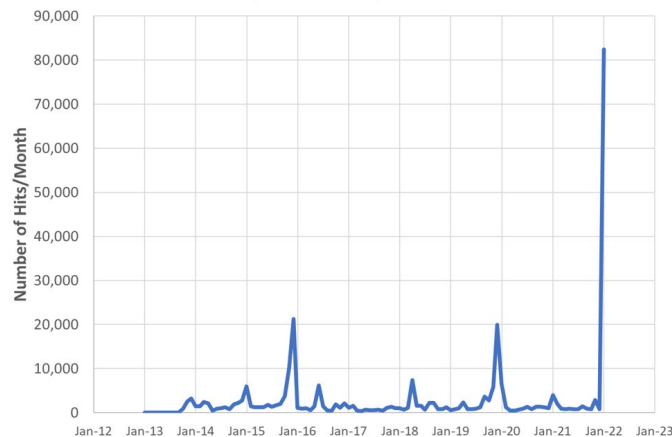
Unknown contact said:

"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*

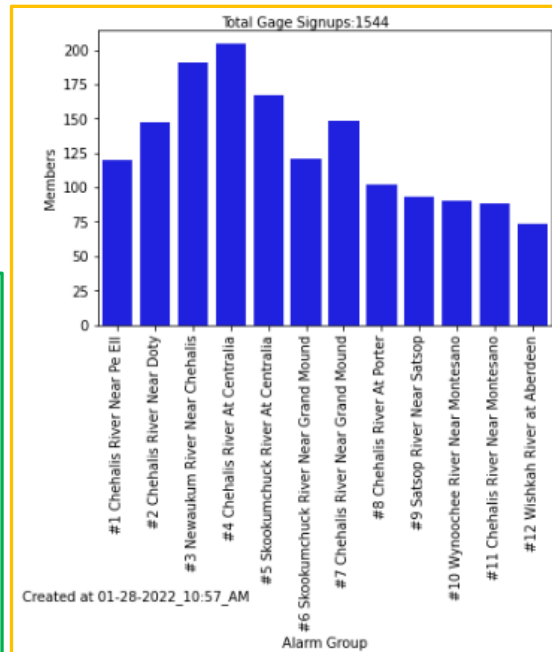
### Chehalis FA Website Visits



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



6-29-2022



# Flood Authority Role (#3)

## Local Resolutions Favoring Basin-Wide Solution

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

6-29-2022

- ✓ **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. 13 of 18

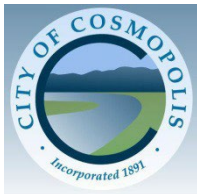
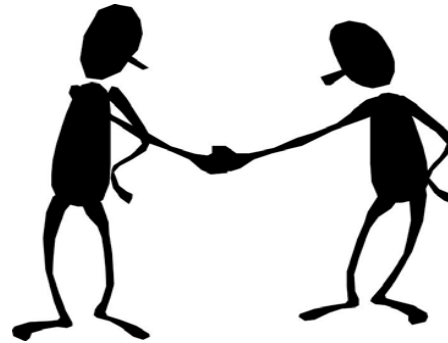
# Office of Chehalis Basin, Chehalis Basin Strategy



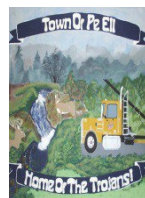
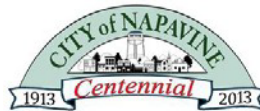
Office of Chehalis  
Basin

Chehalis Basin  
Board

<https://chehalisbasinstrategy.com/>



Chehalis Lead Entity



WASHINGTON STATE DEPARTMENT OF  
**Natural Resources**

TOWN of BUCODA



6-29-2022

# Today vs 2007

**Today, we are substantially more aware, better prepared for catastrophic flooding than ever before.**

- ✓ We have a state-of-the art flood warning system.
- ✓ We've completed many cost-efficient local projects and habitat projects.
- ✓ We're serving people, local governments, emergency responders, agriculture, fish and habitat.
- ✓ We have a governance, administrative, and funding structure that's delivering results.



<https://chehalisbasinstrategy.com/office-of-chehalis-basin/>

6-29-2022

# 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** – (1) 2023-25 call for local projects will be issued June 29, 2022.  
(2) Working with LC Public Works to scope out a \$60K “Lower Boistfort Valley preliminary CMZ study”
- ✓ **Flood Authority Meetings** – Third Thursday of January, February, March, May, July, September, and November from 10 AM to 11:15 AM (11:30 AM).
- ✓ **Chehalis Basin Board Meetings** – First Thursday of every month from 9 AM to 2 PM.
- ✓ **Sign-Up For Email Gage Alerts** – [www.chehalisriverflood.com](http://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](mailto: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](mailto:dutch@localaccess.com)

**Scott Boettcher**

*Staff*, Chehalis River Basin Flood Authority

360/480-6600

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



# Thank You!

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## **This Presentation:**

Available at “Chehalis River Basin Flood Authority” Website at  
[https://www.ezview.wa.gov/site/alias\\_1492/34490/outreach\\_education.aspx](https://www.ezview.wa.gov/site/alias_1492/34490/outreach_education.aspx)

## **Email Distribution Lists:**

**Megan Sathre (Flood Authority)**  
[megan.sathre@lewiscountywa.gov](mailto:megan.sathre@lewiscountywa.gov)

**Cindy Bradley (Office of Chehalis Basin)**  
[Cindy.Bradley@ecy.wa.gov](mailto:Cindy.Bradley@ecy.wa.gov)

# Also -- Key Links

## **Key Organizations:**

1. Chehalis River Basin Flood Authority -- [www.ezview.wa.gov/chehalisfloodauthority](http://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](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](https://www.ezview.wa.gov/site/alias_1492/34489/local_projects.aspx)
2. Flood Warning System -- [www.chehalisriverflood.com](http://www.chehalisriverflood.com)
3. Chehalis Basin Strategy -- [www.chehalisbasinstrategy.com](http://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/>

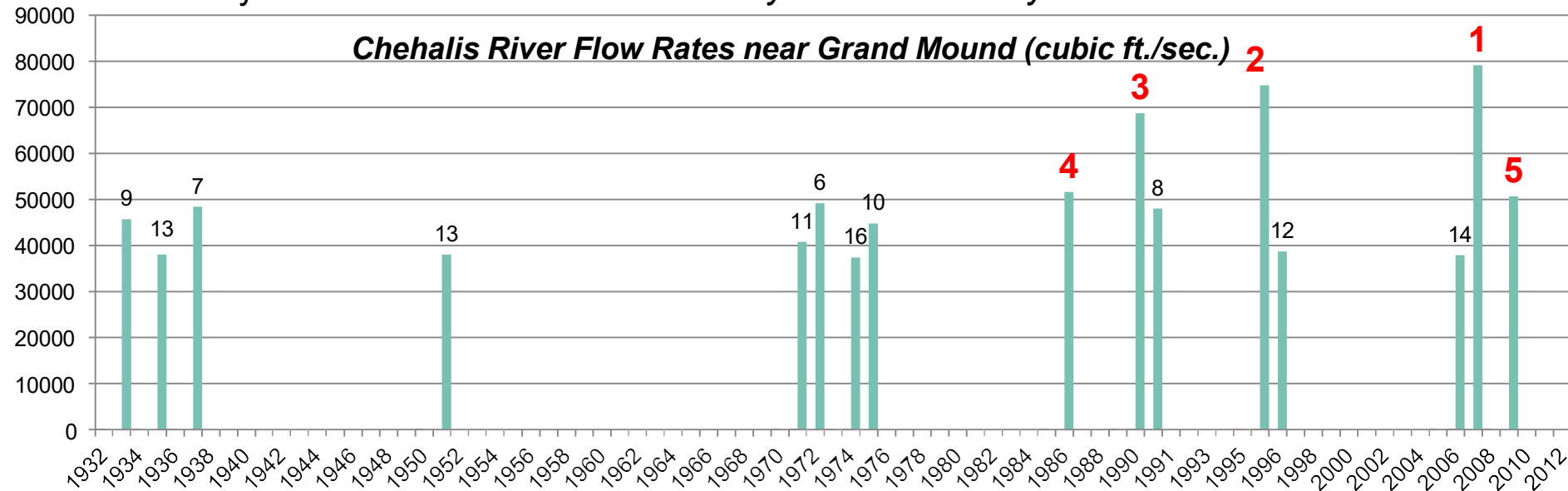
**Also** → Sign-Up for Email Gage Alerts – <https://chehalis.onerain.com/upload/files/6a9bf8e2-f04b-4165-8a9f-ce031d5db6b4.pdf>

# 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

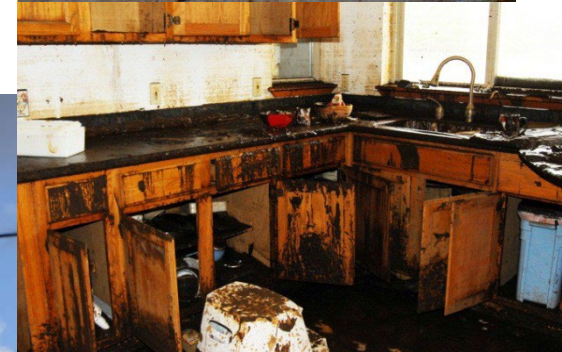
- 2007 Storm -- \$938M Basin-wide damage, \$300M lost economic activity (WA).



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

