

Chehalis River Basin Flood Authority

*Reducing Flood Damage and
Restoring Aquatic Species*

City of Aberdeen

June 22, 2022

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Today's Presentation

- Describe the “Flood Authority.”
 - #1 -- Local Projects
 - #2 -- Flood Warning System
 - #3 -- Role
- Touch on “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)

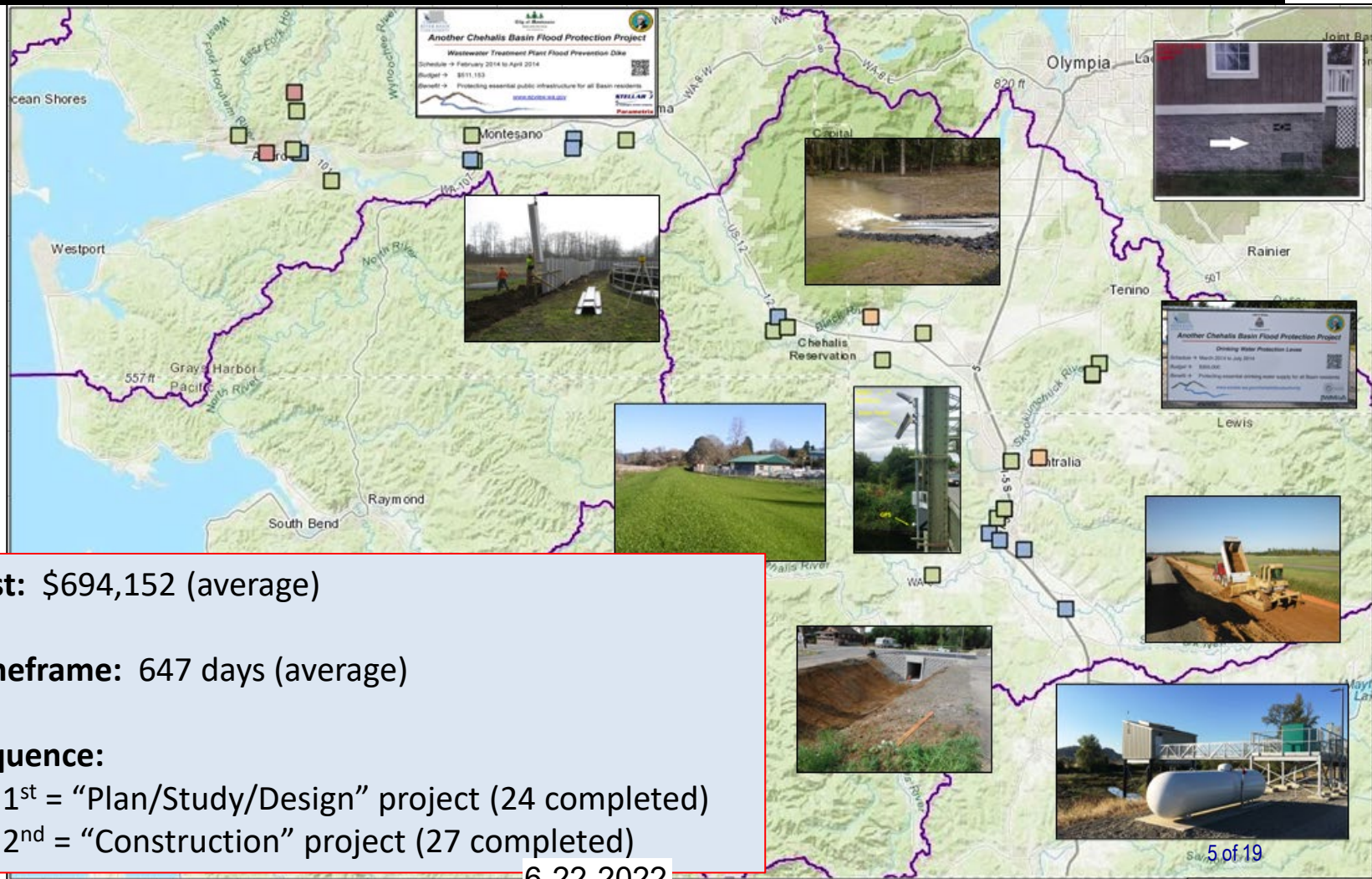
Local Projects (#1)

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, 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)



Local Projects (Grays Harbor County)



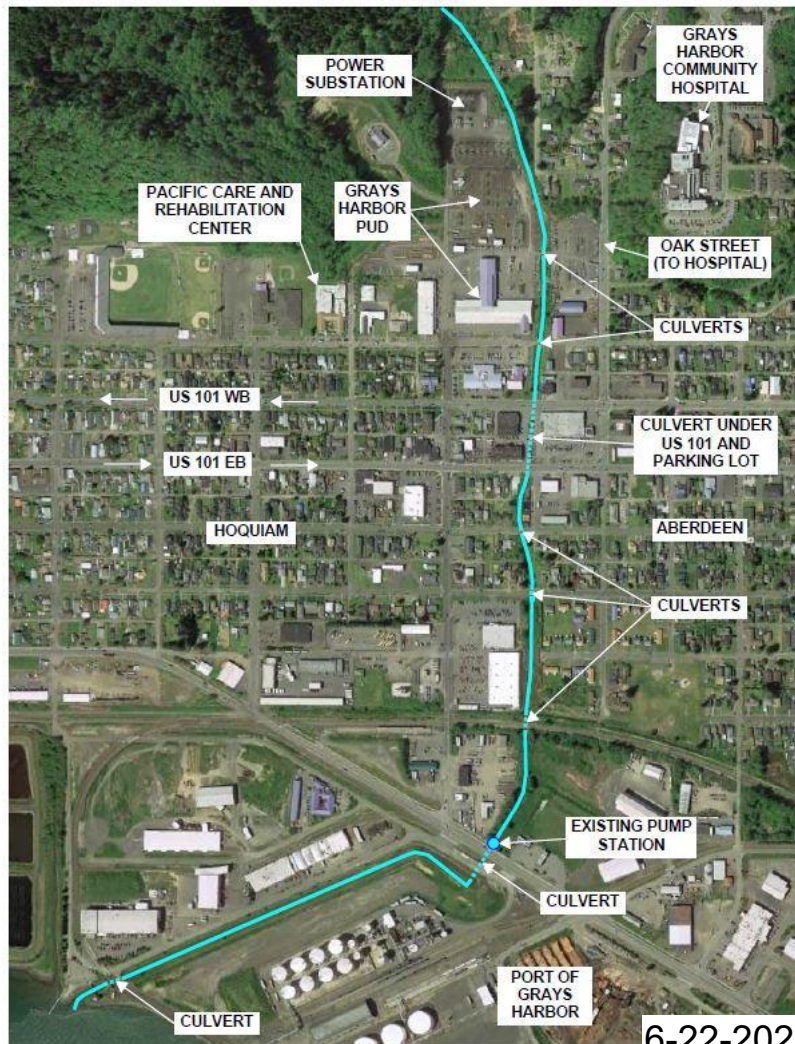
Chehalis Basin Strategy¹ **\$34 Million in Investments in Grays Harbor County So Far**

SUMMARY

Category:	Number:	Value:
Flood Project (construction) complete.	10	\$24,434,635
Flood Project (construction) in-progress.	4	\$4,782,124
Flood Project (study) complete.	9	\$1,771,627
Farm Pads (construction) complete.	4	\$135,479
Habitat Project (construction) complete.	16	\$3,080,137
Flood Warning System Project (construction) complete.	4	\$42,450
	47	\$34,246,452

2020 Analysis

Local Projects (Aberdeen)



FRY CREEK AND VICINITY



FRY CREEK - CULVERT CONSTRICTIONS



FRY CREEK - CULVERT CONSTRICTIONS

Local Projects (Aberdeen)

UNDERWAY – Timberworks laid foundation for North Shore Levee (Aberdeen, Hoquiam)

Timberworks Resiliency and Restoration Master Plan



North Shore Levee—West Segment

CITY OF HOQUIAM

North Shore Levee

CITY OF HOQUIAM

CITY OF ABERDEEN

Local Projects (Aberdeen)

UNDERWAY – Southside Dike/Levee Certification Project



Another Chehalis Basin Flood Protection Project

Southside Dike/Levee Certification Project

Schedule → February 2016 to July 2017

Budget → \$50,000

Benefit → Providing Aberdeen and Hoquiam with essential flood relief

www.ezview.wa.gov/aberdeenfloodrelief

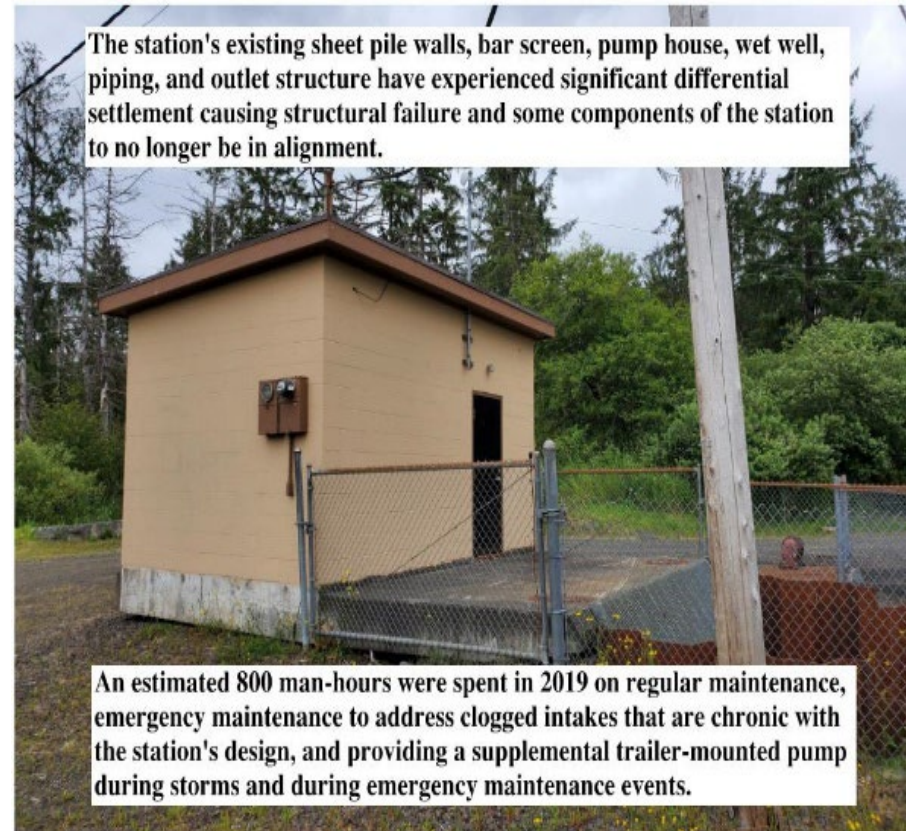
**LANDAU
ASSOCIATES**



Local Projects (Aberdeen)



UNDERWAY – Farragut Street Pump Station



The station's existing sheet pile walls, bar screen, pump house, wet well, piping, and outlet structure have experienced significant differential settlement causing structural failure and some components of the station to no longer be in alignment.

An estimated 800 man-hours were spent in 2019 on regular maintenance, emergency maintenance to address clogged intakes that are chronic with the station's design, and providing a supplemental trailer-mounted pump during storms and during emergency maintenance events.

Local Projects (Aberdeen)

UNDERWAY – Webcam

<https://chehalis.onerain.com/dashboard/?dashboard=4a77124f-3311-4f07-963f-a3f302bf8335>

Looking at downstream face of Heron St. bridge

📷 Wishkah River at Aberdeen, WA

Latest



2022-06-21 15:18:18

Looking at Wishkah River staff gage

📷 Wishkah River at Aberdeen, WA - zoomed

Latest



2022-06-21 15:18:50





Chehalis River Basin
Flood Warning System
www.chehalisriverflood.com

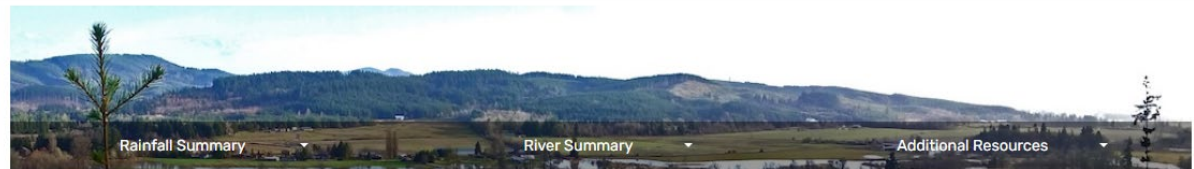
Click icon to sign-up
for email gage alerts.

Flood Warning System (#2)



www.chehalisriverflood.com

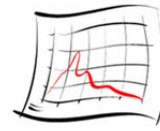
Home Map Sites News Dashboards



Weather Forecast



Rainfall Forecast



River Forecast



Flood Maps



Plot Gage Data



Gage Data Maps



Landslide



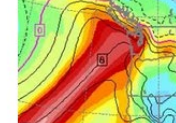
Radar Rainfall



Road Conditions



USGS Gages

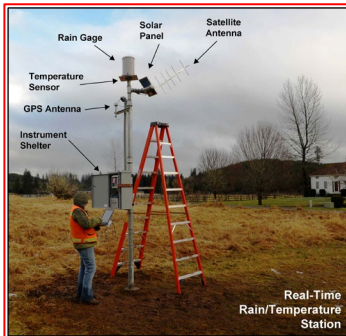
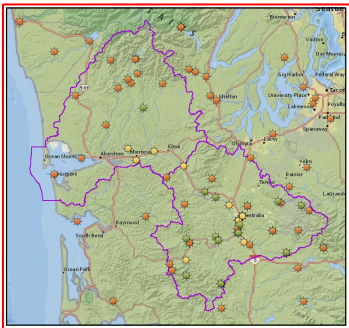


Atmospheric Rivers

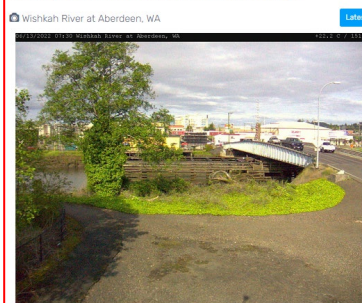


Chehalis Basin Gage
Height Conversion
Project

Photo Credit:
www.chehalisbasinstrategy.com



Looking at downstream face of Heron St. bridge



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

6-22-2022



Chehalis River Basin
Flood Warning System
www.chehalisriverflood.com

Click icon to sign-up
for email gage alerts.

Flood Warning System (2022 Flood Event)

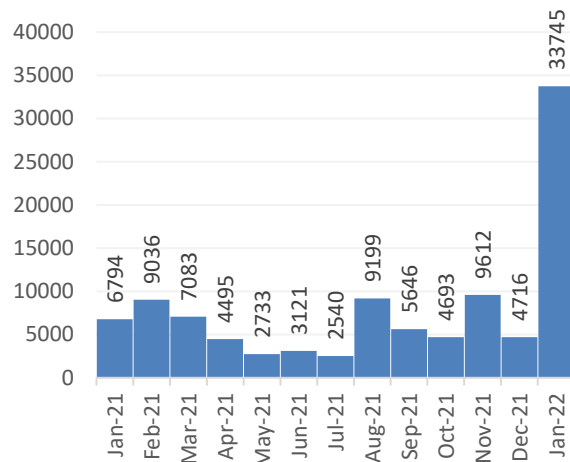
Flood Warning System Works!

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*

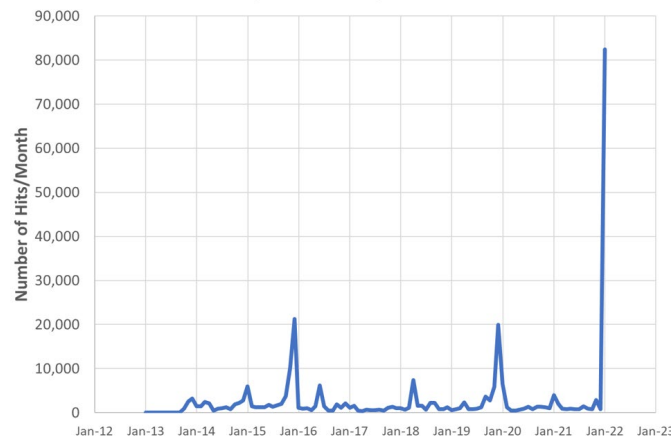
Unknown contact said:

"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

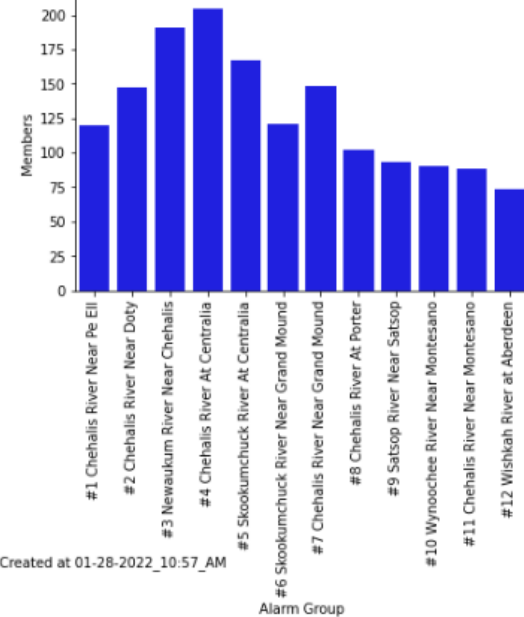


Chehalis River Basin Flood Authority Flood Warning System
Monthly Inundation Map Website Hits



6-22-2022

Total Gage Signups: 1544



Created at 01-28-2022_10:57_AM

Alarm Group

Flood Authority Role (#3)

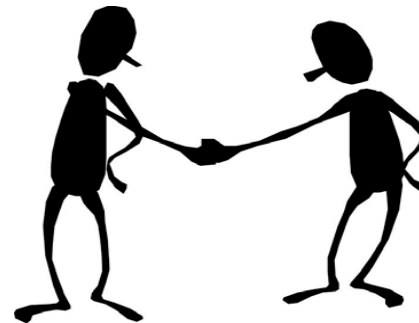
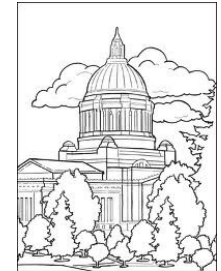
Local Resolutions Favoring Basin-Wide Solution

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	134 KB	2020	07/15/20 10:42 AM
Pe Ell -- 2021-03-02 -- 260.pdf	134 KB	2021	03/18/21 05:11 AM

6-22-2022

- ✓ **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](#)).

Chehalis Basin Strategy



WASHINGTON STATE
CONSERVATION
COMMISSION



**CHEHALIS RIVER BASIN
FLOOD CONTROL ZONE DISTRICT**

Chehalis Lead Entity



WASHINGTON STATE DEPARTMENT OF
Natural Resources



Office of Financial Management
Better information. Better decisions. Better government.

TOWN of BUCODA
6-22-2022

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/>

6-22-2022

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 will follow July 7, 2022 Chehalis Basin Board meeting.
- ✓ **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



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

Dee Anne Shaw

Member, Chehalis River Basin Flood Authority

360/580-7975

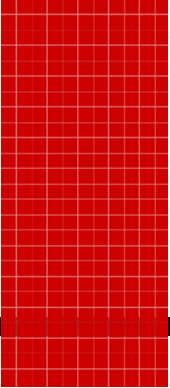
dshaw@aberdeenwa.gov

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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/>

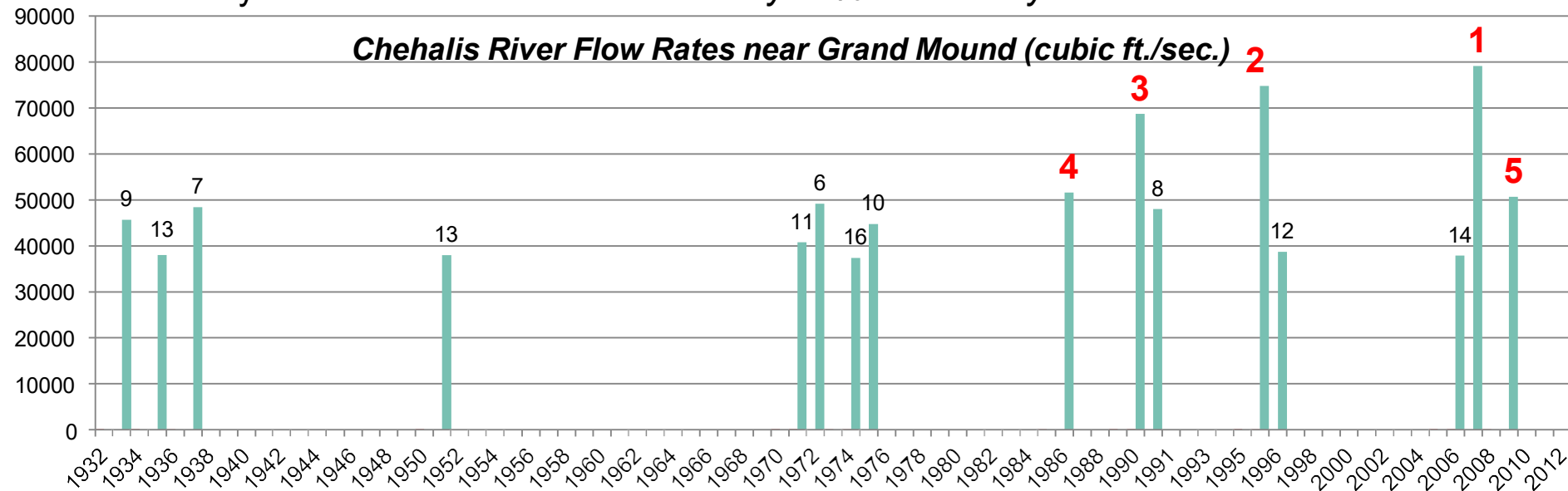
Also → Sign-Up for Email Gage Alerts – <https://chehalis.onerain.com/upload/files/6a9bf8e2-f04b-4165-8a9f-ce031d5db6b4.pdf>

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

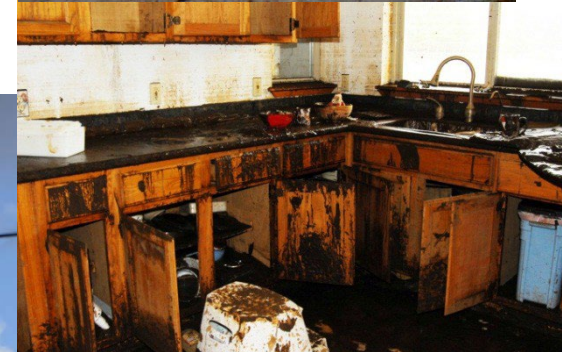
- 2007 Storm -- \$938M Basin-wide damage, \$300M lost economic activity (WA).



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

22 of 14



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

