Chehalis River Basin Flood Authority

Reducing Flood Damage <u>and</u>
Restoring Aquatic Species

Town of Pe Ell November 19, 2024

2007 Storm

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

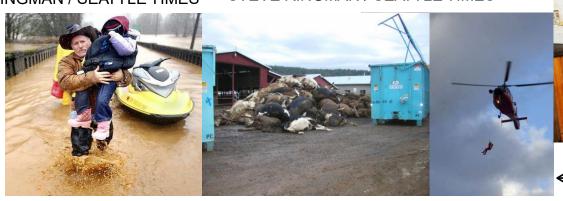


Exit 77 (I-5) in Chehalis STEVE RINGMAN / SEATTLE TIMES



City of Centralia
STEVE RINGMAN / SEATTLE TIMES

State Route 6, West of Adna MIKE SALSBURY / AP



← Photos Source: LEWIS COUNTY,
DIVISION OF EMERGENCY
MANAGEMENT
2 of 24



Today's Presentation

- Describe the "Flood Authority"
 - **#1 -- Local Projects**
 - #2 -- Flood Warning System
- Touch on the "Chehalis River Basin Flood Control Zone District" #3 -- Proposed Flow-through Dam for Flood Control
- Allow time for discussion.







Office of Chehalis Basin

Chehalis Basin Board



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



- ➤ Grays Harbor County (2008) ➤ Lewis County (2008)
 - City of Aberdeen (2008)
 City of Centralia (2008)

 - City of Montesano (2008)
 - City of Oakville (2008)

- City of Cosmopolis(2011) O City of Chehalis (2008)
- City of Hoquiam (2017)City of Napavine (2011)
 - Town of Pe Ell (2008)



- > Thurston County (2008)
 - Town of Bucoda (2008)



Help local communities identify, develop, implement local flood hazard reduction solutions.

Local Projects (#1)

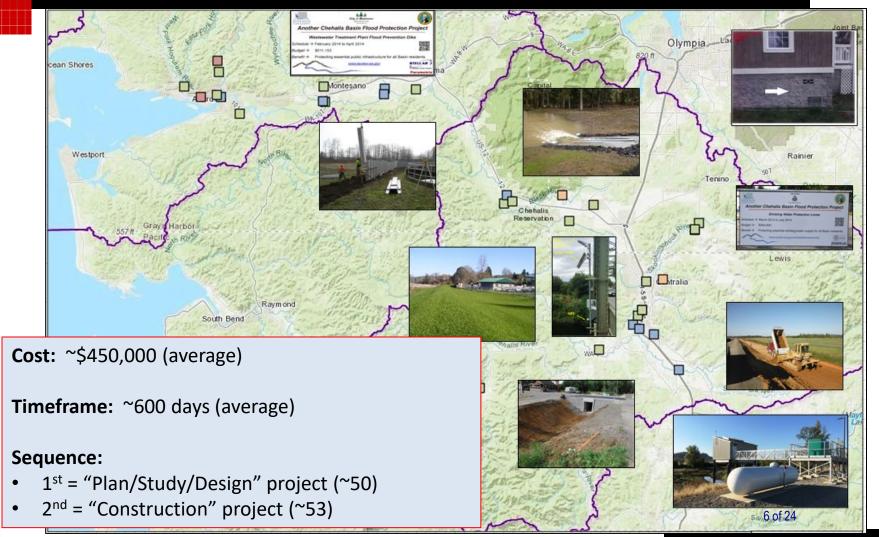
- 1. Reduce flood damage.
- 2. Protect people, property, infrastructure.
- 3. Improve readiness, response, resiliency.
 - Drinking Water (Boistfort, Bucoda).
 - Wastewater (Montesano, Pe Ell).
 - Emergency Response (Grays Harbor County, Chehalis-Centralia Airport).
 - Regional Economic Infrastructure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

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 2023-25 -- \$ 3.6M \$55.0M 2025-27 -- \$ 3.0M to \$13.0M



Flood Warning (Basin-wide).

Local Projects (100+ Projects Completed 2012-23)



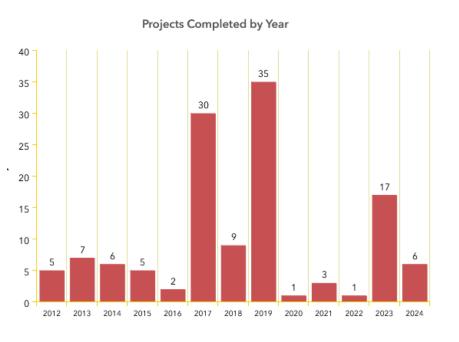


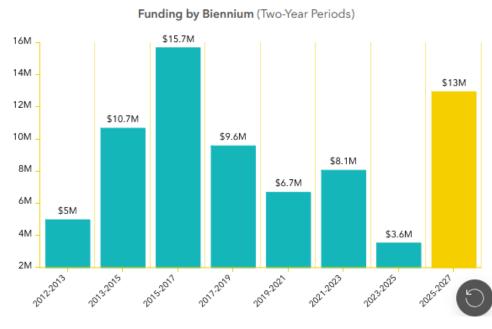
Local Projects (100+ Projects Completed 2012-23)





Local Projects (100+ Projects Completed 2012-23)







Local Projects (Pe Ell, 2014)







- ✓ Project = Design/construct 900' dike (between Chehalis r. and WWTP).
- \checkmark Cost = \$521,000.
 - Photos = https://www.ezview.wa.gov/site/alias_1492/35040/default.aspx#peell.
- ✓ Website = https://www.ezview.wa.gov/site/alias 1782/34858/overview.aspx

9 of 18

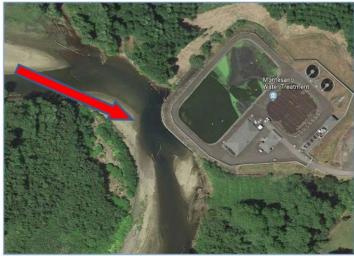
Local Projects (Montesano, 2017-2020)

- ✓ Protect WWTP from on-coming Wynoochee river using 220+ "logjacks."
- ✓ 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!1e

July 7, 2022 →



Project Start



Governor Inslee and Mayor Samuel stand overlooking the Wynoochee River.

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Local Projects (Bucoda, 2016)





			EVATION CERTIFICATE ORTANT: Follow the instructions on pages 1—9.			OMB No. 1660-0008 Expiration Date: July 31, 2018	
		SECTION A	- PROPERTY INFO	RMATION	R	OR INSURANI	E COVEMY USE
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A2. Building Street Address (Including Apt., Unit, Suits, and/or Bidg. No.) or RO. Route and Box No. 303 N. Market Street					20	Company NAIC Number:	
City Bucoda State WA					217	ZIP Code 98530	
A3. Property Descr	ption (Lot and Block N o. 61800300900	umbers, Tax Parcel Numb					
A4. Building Use (e A5. Lattude/Long) A6. Attach at least A7. Building Diagra A8. For a building vi a) Square foot b) No. of peers	g., Residential, Non-Rude: Lot. 48 degrees 2 photographs of the I n Number 8. Ith a crawispace or en age of crawispace or e	nclosure(s) 58	g. 122 degrees 51's is being used to obtain	53.65°W. flood insurance it. For a building a) Square for	with an attac otage of attac	hed garage: thed garage	in the attached a
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Local Projects (Hoquiam, 2016-2018)

- ✓ Completed -- February 2018.
- ✓ Cost -- \$1.3M.
- ✓ January 2022 Flood Event Ramer basin stayed dry (51M gallons pumped over 30 hours)



- ~200 homes
- Lincoln Elementary School
- Commercial yacht builder
- 8 acres of prime development property
- Large low-income residential neighborhood
- Coastal Harvest food distribution center





Local Projects (Chehalis-Centralia Airport, 2017)





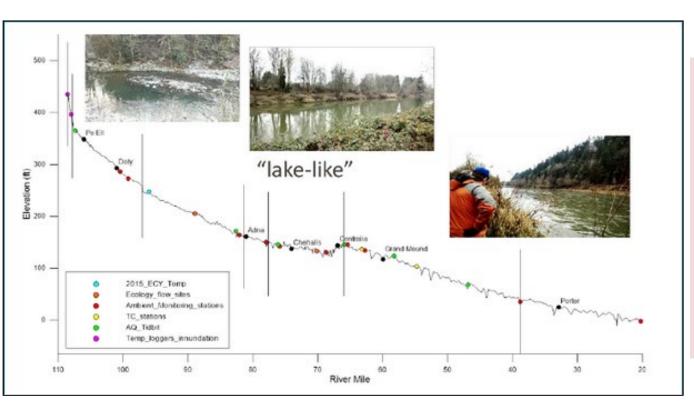
- ✓ Cost -- \$1.14M.
- ✓ January 2022 Flood Event Pumped
 518.4M gallons over many days to keep levee dry.
- ✓ ROI (2018) -- Protects \$45M in assets, ensures \$9M in annual tax revenue.





✓ Read More -- <u>Here</u>.

Local Projects (Moving to Geographically-Based)



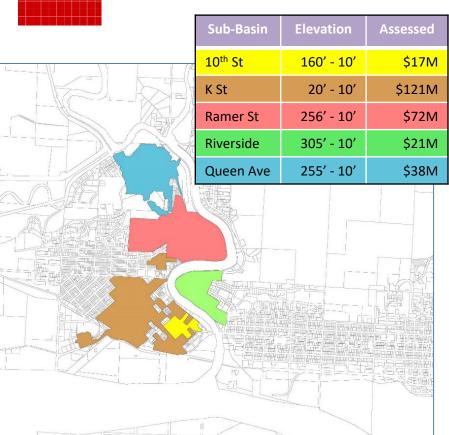
Basin Geography

- □ Upper = Steep, narrow, fast flowing.
- ☐ Middle = Flat, "lake like", slow to drain.
- ✓ Lower = Flat, coastal, difficult to drain.

Shah, Mohammad. (2021). inland water-dynamics and ecology. 10.5772/intechopen.87463.



Local Projects (Moving to Geographically-Based)



Sub-Dasiii	Elevation	Assesseu
Division	345' - 10'	\$300M
Farragut*	90' - 10'	\$98M
Fry	498' - 4'	\$147M
Jefferson	344' - 10'	\$193M
Lincoln	15' - 10'	\$66M
Washington	95' - 10'	\$27M

11 urbanized low elevation sub-basins

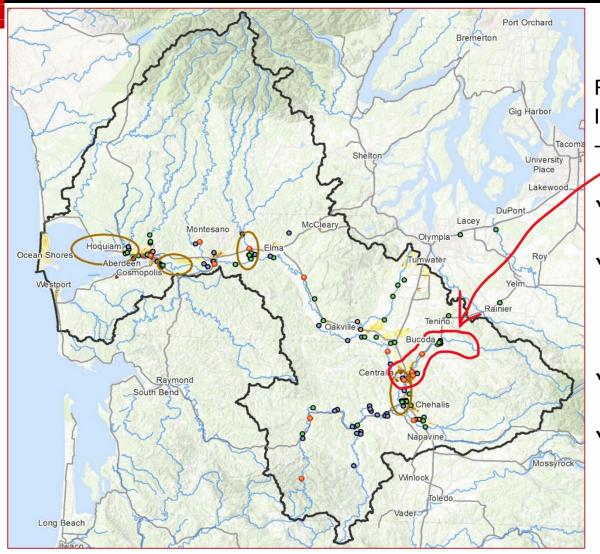
Adverse meteorologic conditions -- high tides, heavy rain, bankfull rivers, saturated soils, SW winds

Very difficult to drain!
(\$1.1B assessed value at risk)

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Local Projects (Moving to Geographically-Based)



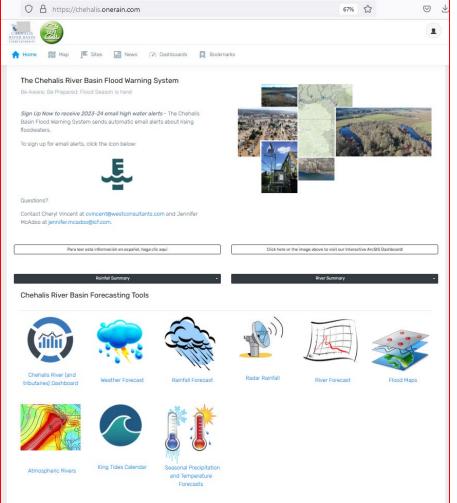
Future Geographic Investment Planning -

- Skookumchuck.
- ✓ New gage (<u>here</u>).
- ✓ Future of Skookumchuck dam (here).
- ✓ Bucoda flooding.
- ✓ Centralia flooding.



Flood Warning System (#2)

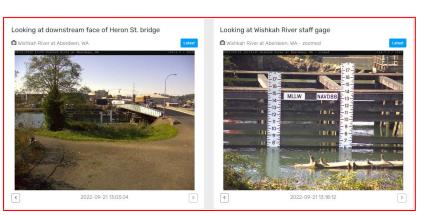
- ✓ Developed with State Capital Budget \$.
- ✓ Maintained with local \$.



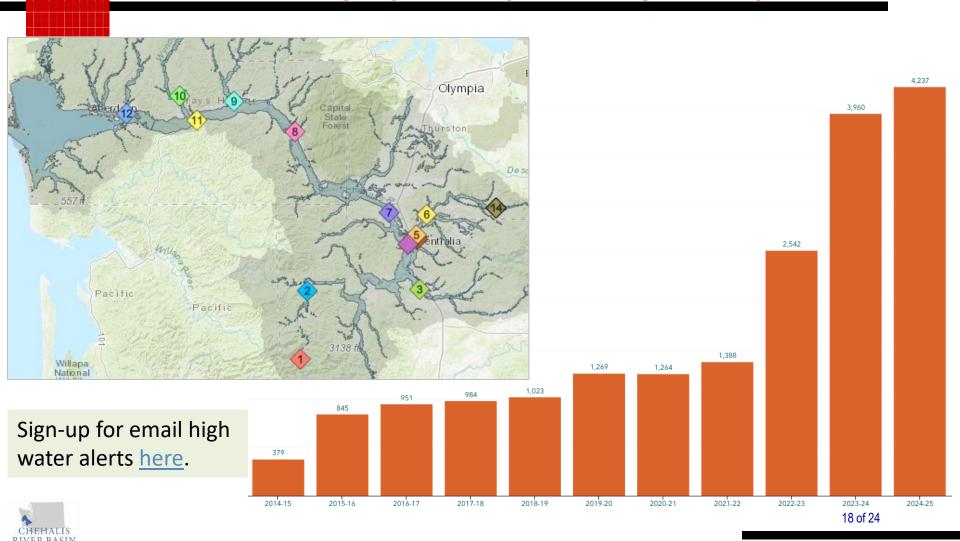
www.chehalisriverflood.com







Flood Warning System (Alert Sign-Ups)



Proposed Flow-through Dam for Flood Control (#3)



CHEHALIS RIVER BASIN

FLOOD CONTROL ZONE DISTRICT

www.chehalisriverbasinfczd.com



Proposed Flow-Through Dam for Flood Control (#3)



- 1. Move through unobstructed
- ✓ Water
- ✓ Fish
- ✓ Sediment
- 2. Delivers topto-bottom benefit, Pe Ell to Cosmopolis.
- 3. See recent presentation here.



Chehalis Basin Strategy

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 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)





























































Local Resolutions Library

https://www.ezview.wa.gov/site/alias 1492/37643/local resolutions.aspx

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 alike
- ✓ We have a governance, administrative, and funding structure that's delivering results, and is committed to a balanced basin-wide flood and fish solution (see Local Resolution Library).



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



Key Contacts

Vickie Raines, Grays Harbor County Representative

Chair, Chehalis River Basin Flood Authority Chair, Chehalis Basin Board 360/590-4100

vraines@graysharbor.us

Edna Fund, Lewis County Representative

Vice-Chair, Chehalis River Basin Flood Authority Chair, Chehalis River Basin Flood Control Zone Advisory Board 360/269-7515

dutch@localaccess.com

Lonnie Willey, Pe Ell Representative

Member, Chehalis River Basin Flood Authority 360/324-2132

p-lmayor@centurytel.net

J. Vander Stoep, Pe Ell Representative (Alternate)

Member (Alternate), Chehalis River Basin Flood Authority Member, Chehalis Basin Board 360/269-0200

jv@vanderstoep.com

Scott Boettcher

Staff, Chehalis River Basin Flood Authority 360/480-6600

scottb@sbgh-partners.com

