

Chehalis River Basin Flood Authority

Recent Flood Event

January 6-9, 2022

Edna Fund, Vice-Chair
Chehalis River Basin Flood Authority

Scott Boettcher, Staff
Chehalis River Basin Flood Authority

January 24, 2022

Today's Presentation . . .

- I. **The Event . . .** Quick look at rainfall, gages, event characteristics.
- II. **Reflections/Lessons Learned . . .** What worked, what did we learn, etc.
- III. **Take Aways . . .** What can we conclude?



CITY OF CHEHALIS

I. The Event . . .

30-Day Rainfall →

Gage Totals Since 10-01-2021:

- Hoquiam ~ 96 inches
- Beeville (Mason County) ~ 87 inches
- Newaukum/Weyco (Lewis County) ~ 58 inches
- Huckleberry Ridge (Lewis County) ~ 68 inches

Twin Cities:

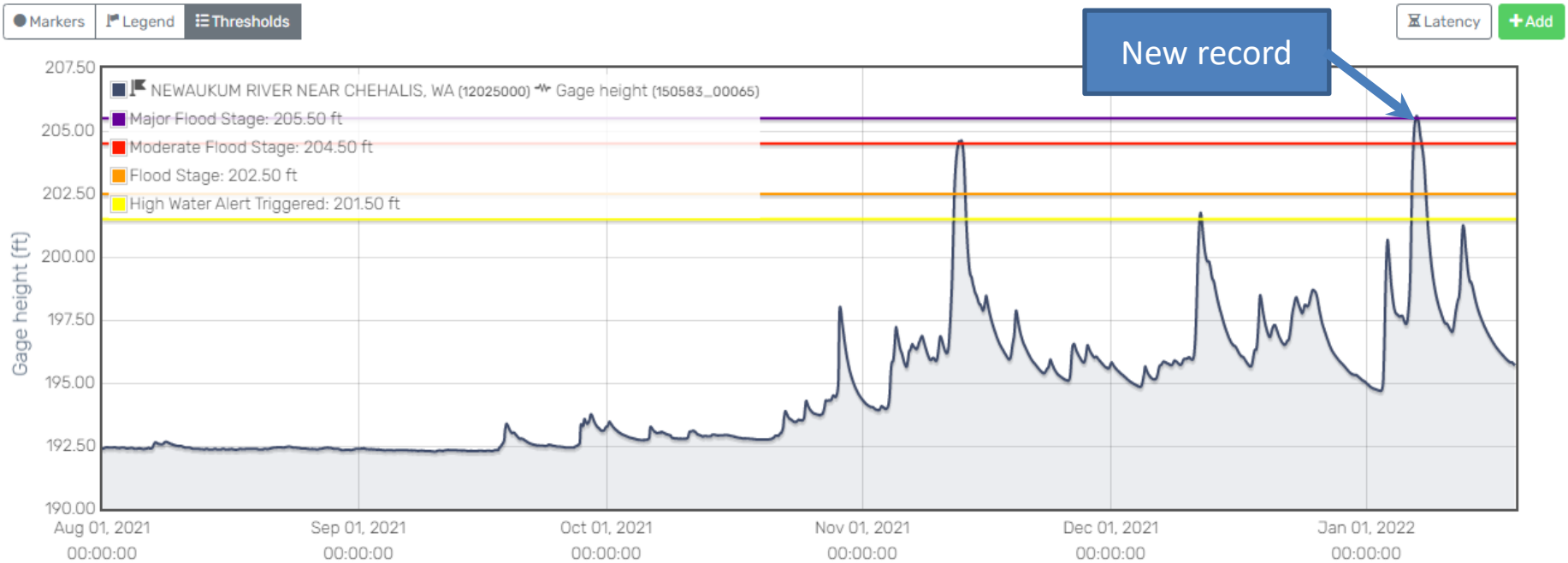
- 8-11 inches snow 12/26-27/2021
- 4.25 inches rain 1/02-07/2022



I. The Event . . .

Newaukum River Near Chehalis
Actual 205.59 (2022) Record 205.48 (1996)

01 August, 2021 - 18 January, 2022



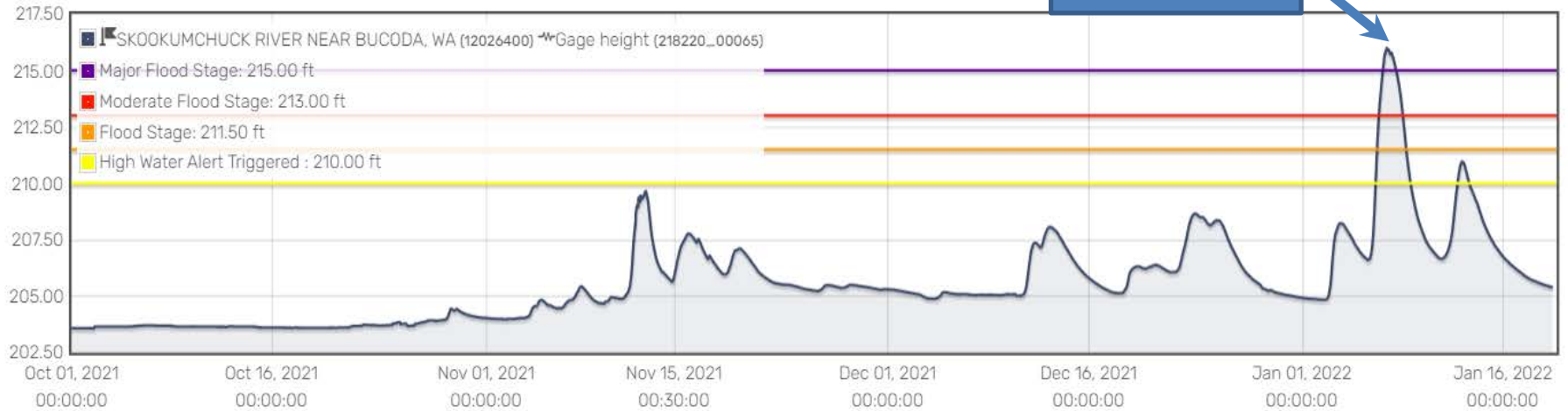
www.chehalisriverflood.com

I. The Event . . .

Skookumchuck River Near Bucoda
Actual 215.99 (2022) Record 216.02 (1996)

01 October, 2021 - 19 January, 2022

Markers Legend Thresholds



www.chehalisriverflood.com

January 24, 2022

I. The Event . . .

Chehalis River Near Grand Mound
Actual 145.21 (2022) Record 147.26 (2007)

📅 01 August, 2021 - 16 January, 2022



www.chehalisriverflood.com

January 24, 2022

I. The Event . . .

Satsop River Near Satsop

Actual 41.76 (2022)

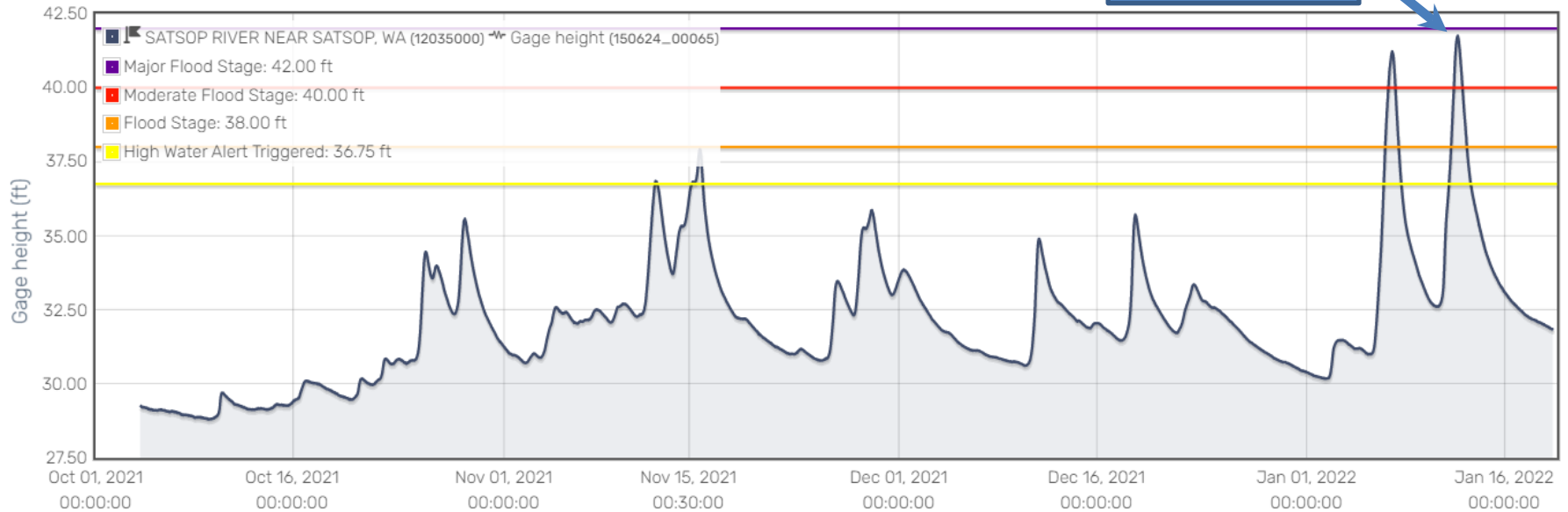
Record 42.79 (1935)

01 October, 2021 - 19 January, 2022

Markers Legend Thresholds

Near record

Latency + Add



www.chehalisriverflood.com

January 24, 2022

I. The Event . . .

- **Conspiring Weather Conditions:**
 - Significant snow on the ground.
 - Heavy rain, Warming temperatures.
 - Category 4 Atmospheric River (2 ARs).
- **Very wet!**
- **Basin-wide.**



KRIS KOSKI / PORT OF GRAYS HARBOR



REUTERS PHOTO

II. Reflections/Lessons Learned . . .



Pumps Work! Chehalis-Centralia Airport Pump:

- Pumped continuously for several days at 10,000 gpm.
- 3 days = ~ 518 million gallons of water!
- Area within levee stayed protected, along with millions \$ of infrastructure and 1,000+ jobs.
- Cost = \$1.14M. Value protected = \$45M (and \$9M annual tax dollars). ROI = 39:1!

BEFORE (1940s to 2015):



TODAY (2015 forward):

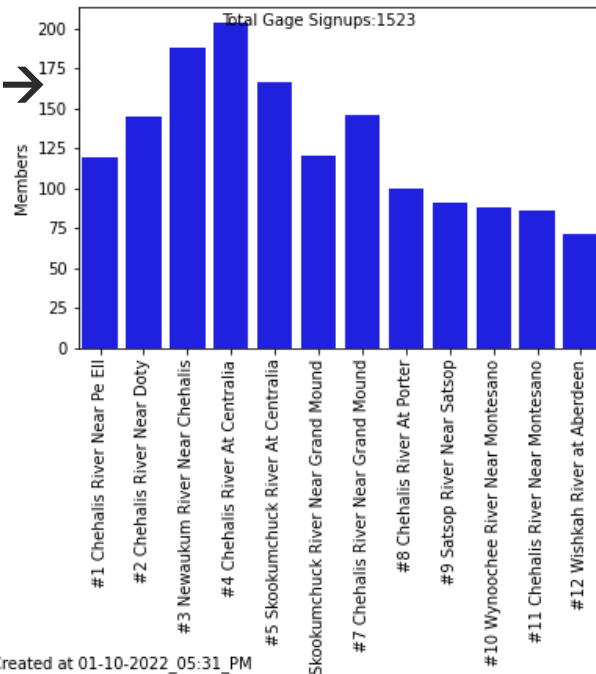


II. Reflections/Lessons Learned . . .

www.chehalisriverflood.com

Flood Warning System Works!

- Website -- 25,000 user logins (Jan 1-10)
- Inundation Maps -- 73,000 hits (Jan 6-7)
- Email alert sign-ups →



Also:

- Lewis County Rivers
- Lewis County Alert

Created at 01-10-2022_05:31_PM

January 24, 2022

II. Reflections/Lessons Learned . . .

Social Media Works! 3rd party posts drove Flood Warning System volumes.

The Chronicle
56m · 🌐

If you're trying to decide to stay or go, this tool might be able to help inform your decision. The image below reflects the best projection as to what areas will be flooded if the Skookumchuck River at Centralia reaches 192.4 feet. It is projected to reach 193.1 feet.

Check out predictions in this Chehalis River Basin Flood Authority online tool here: <http://chehalisriverflood.org/>

Disclaimer from the site: Inundation maps show estimated areas of flooding associated with river stages reported or forecast at National Weather Service forecast points. These maps are prepared in advance using assumed storm conditions. The exact extent of flooding during an actual event for an observed or forecast elevation may vary due to specific local storm conditions.

Washington Emergency Management Division posted a ⚠️ weather alert for Lewis County and 2 other counties.
1h · 🌐

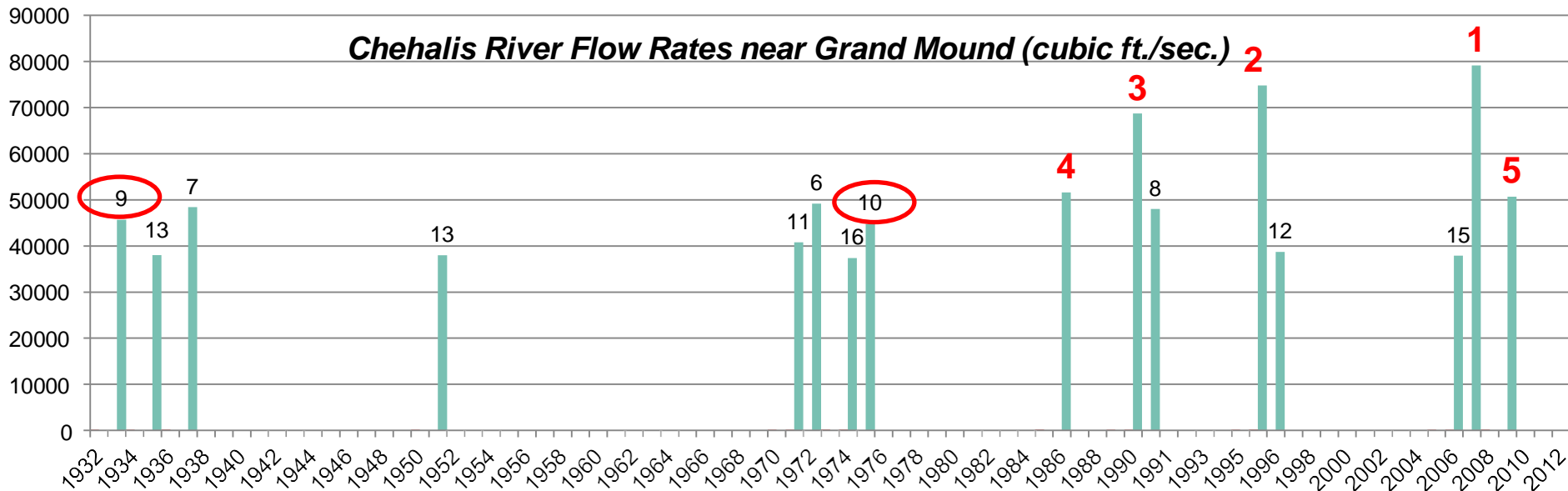
There's lots of flooding potential in Western Washington in the coming days. One area of concern is the Chehalis River and the Skookumchuck River. The Chehalis Basin Flood Authority has potential flood maps & alert systems in place for residents to get warnings. You can find river gages near you and sign up to get notified about flooding issues near you. If flooding impacts you, sign up. You can also look at what areas are forecasted to be impacted by floods using Flood Inun... [See more](#)

II. Reflections/Lessons Learned . . .

Ranked high flow events (1932 - 2012) . . .

- I-5 closed 1990, 1996, 2007, 2009.
- Five largest events since 1986.

Recent event (1/07/2022) peaked → 44,600 cfs (9-10 event); Closed I-5 (~5 hours).



II. Reflections/Lessons Learned . . .

How Do Previous Events Compare?

Peak Flow (kCFS)	1996	2007	2022	Diff
Newaukum River Near Chehalis	13.3	12.9	13.9	n/a
Skookumchuck River Near Bucoda	11.3	3.6	11.0	n/a
Chehalis River Near Grand Mound	74.8	79.1	44.6	2022: 60% of 1996 56% of 2007

III. Take Aways . . .

1. For as wet as it was, we were lucky. Even though it wasn't a 2007 event, it was still a top 10 event.
2. Positive factors (over 1996 or 2007) include:
 - Lower peak flows in the Chehalis.
 - Greater on-the-ground flood awareness (Flood Warning System).
 - Greater flood protection improvements (Airport Pump).
3. Lowering peak flows in the Chehalis, through a predictable upper-basin mainstem retention structure (versus relying on luck), is key to limiting significant future flood damage from catastrophic (and top 10) floods.
4. Continuing support for a basin-wide solution (large and small projects, aquatic species and habitat, early flood awareness) remains critical.
 - [Local Resolutions](#) -- City of Chehalis (2010, 2016, 2020, 2021).



Thank You!

Edna Fund, *Lewis County Representative*
Vice-Chair, Chehalis River Basin Flood Authority
Member, Chehalis Basin Board
360/269-7515
dutch@localaccess.com

Scott Boettcher
Staff, Chehalis River Basin Flood Authority
360/480-6600
scottb@sbgh-partners.com