

# CHEHALIS RIVER BASIN FLOOD WARNING SYSTEM

OCTOBER 15, 2019

SCOTT BOETTCHER, STAFF

CHEHALIS RIVER BASIN FLOOD AUTHORITY

# December 2007



Photo by Bob Walter

# January 2009



<http://www.katu.com/news/37243024.html>

<http://www.komonews.com/weather/blogs/scott/37346554.html>

# PROBLEMS/GOALS

- IMPROVE RIVER FORECASTING
- IMPROVE INFORMATION ACCURACY AND COMMUNICATION
- GOAL = NO SURPRISES!



# DESIGN/BUILD FLOOD WARNING SYSTEM

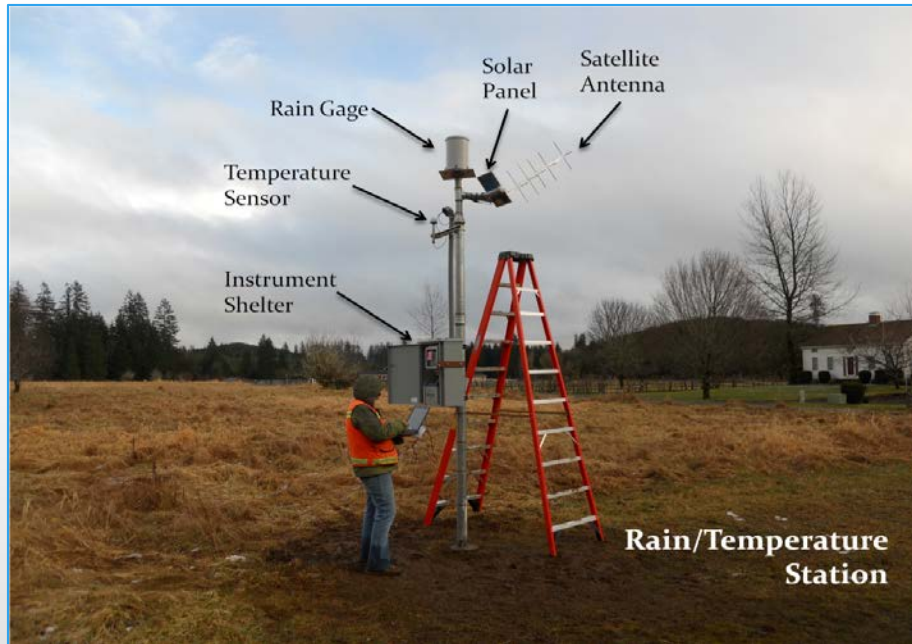
## GUIDING PRINCIPLES

- COST EFFECTIVE
- LEVERAGE EXISTING RESOURCES
- IMMEDIATE BENEFITS

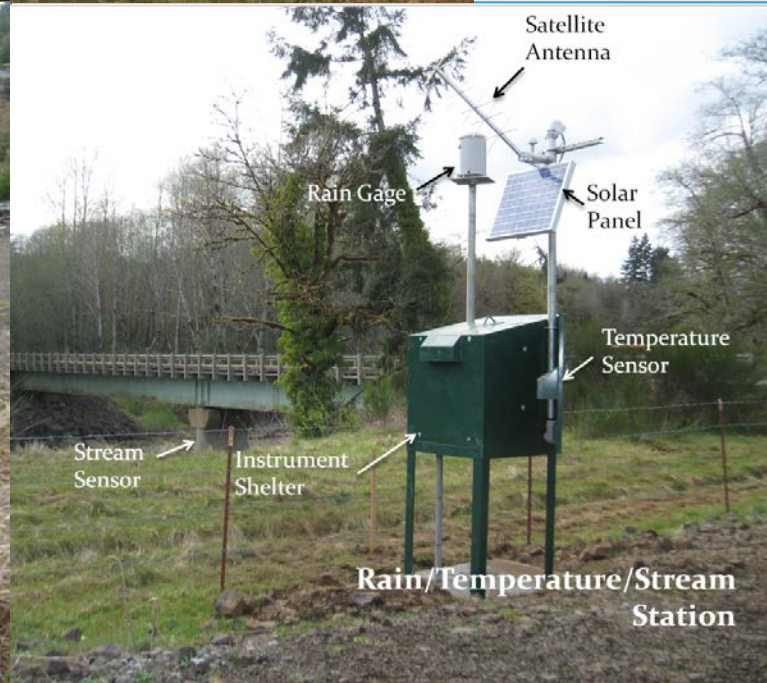
# DESIGN/BUILD FLOOD WARNING SYSTEM

- IMPROVE ON-THE-GROUND MONITORING NETWORK
  - ✓ 8 RAIN/TEMPERATURE STATIONS
  - ✓ 2 RAIN/TEMPERATURE/STREAM STATIONS
- INTERNET DATA AND WARNING
- INUNDATION MAPPING
- [WWW.CHEHALISRIVERFLOOD.COM](http://WWW.CHEHALISRIVERFLOOD.COM)





# NEW BASIN GAGE SITES

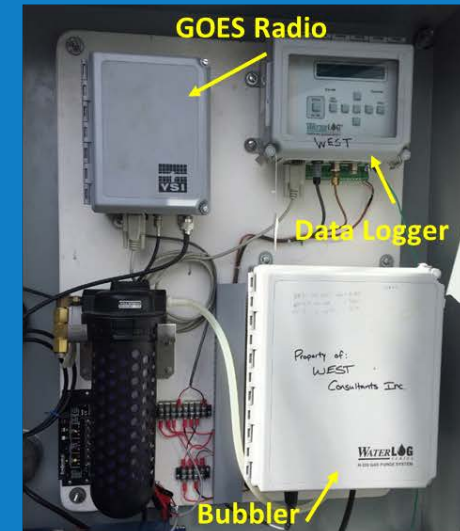
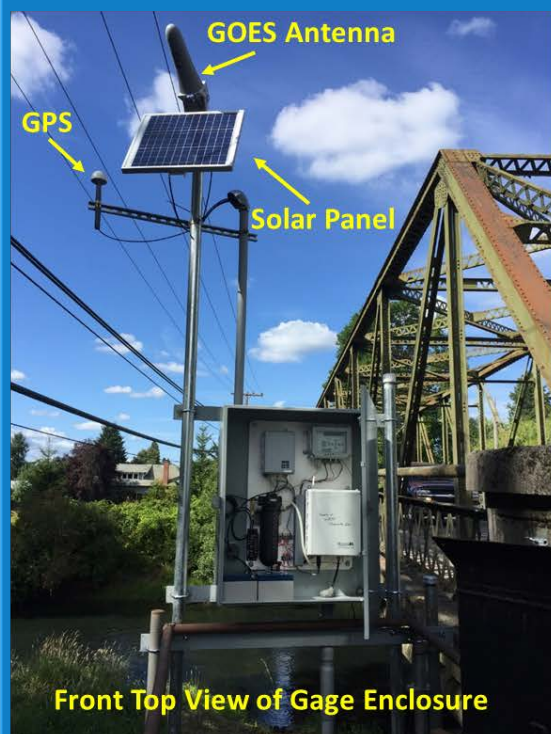




# REPLACE NWS GAGES



## NWS GAGE UPGRADE – SKOOKUMCHUCK RIVER AT CENTRALIA, WA - 12026600

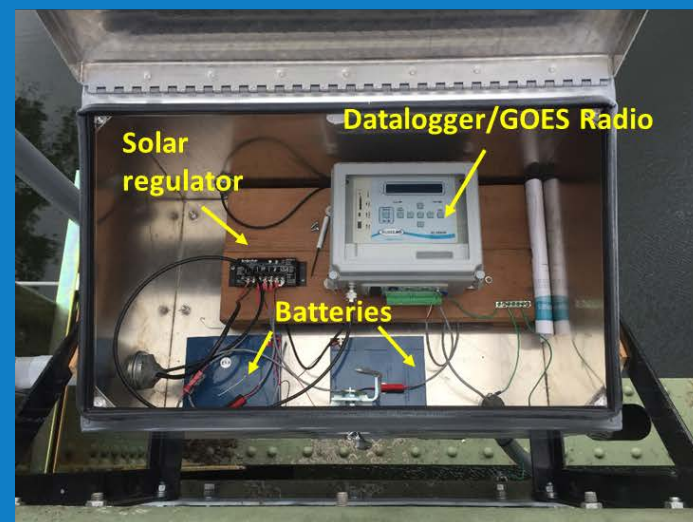




# REPLACE NWS GAGES



## NWS GAGE UPGRADE - CHEHALIS RIVER AT CENTRALIA, WA - 12025500





# NEW GAGES THURSTON COUNTY



Total Sensors in Chehalis System: 260



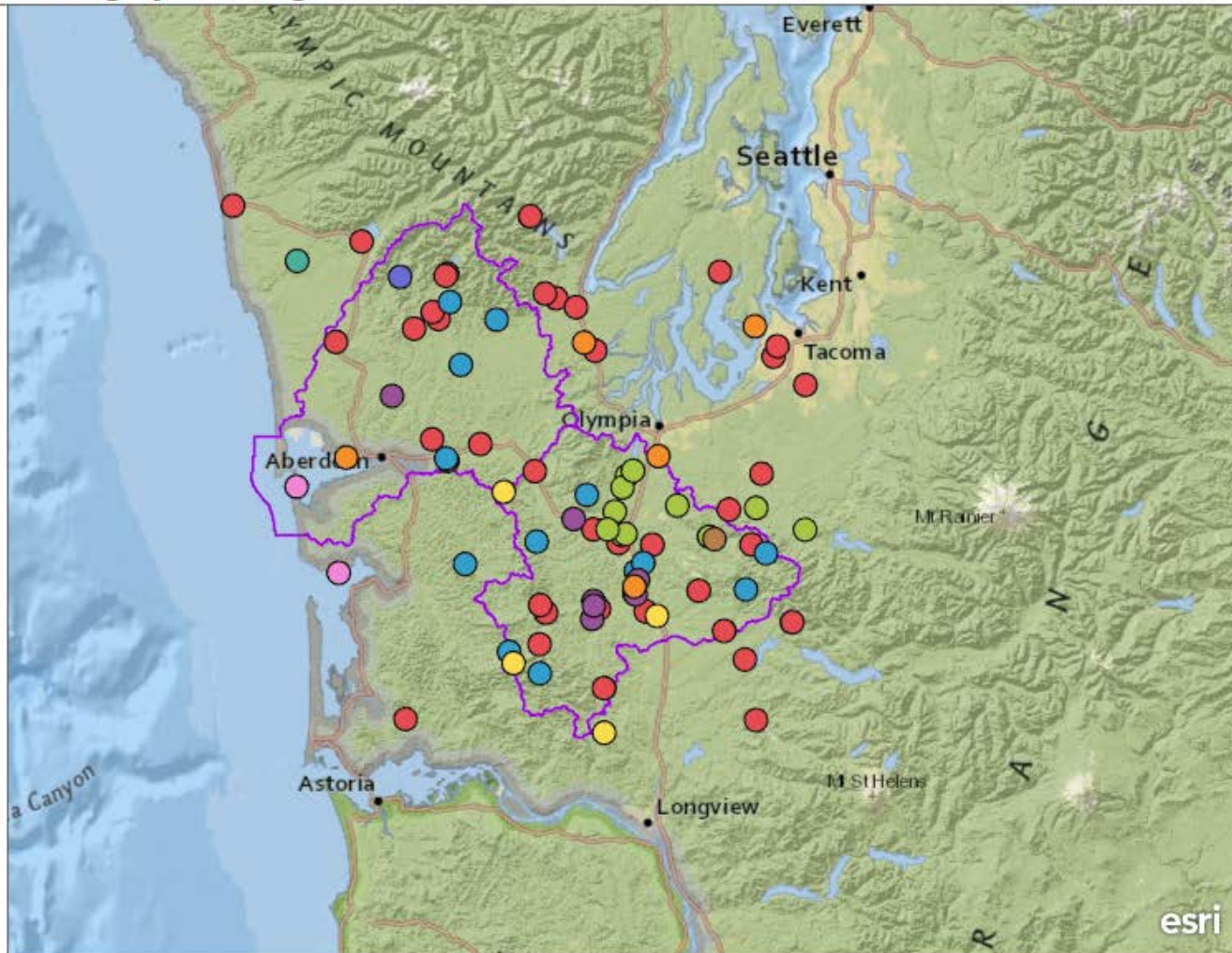
# TOTAL= 89 GAGE SITES



## Chehalis Basin Flood Warning System Gages

### All Flood Warning System Gages 05-15- 2019

- U.S. Geological Survey
- Chehalis River Basin Flood Authority
- Thurston County
- WA State Department of Ecology
- National Weather Service/Federal Aviation Administration
- WA State Department of Natural Resources
- National Oceanic and Atmospheric Administration TIDES
- TransAlta
- U.S. Bureau of Indian Affairs
- U.S. Forest Service



Displays Chehalis Basin flood warning system gages by ownership.



# NEW WEBCAMS (2019)

Wynoochee River at Montesano



Chehalis River at Mellen Street Bridge



[WWW.CHEHALISRIVERFLOOD.COM](http://WWW.CHEHALISRIVERFLOOD.COM)

## Chehalis River Basin Flood Warning System

Access real time Rainfall, River Levels, and other Flood related information below:

Rainfall Summary

River Summary

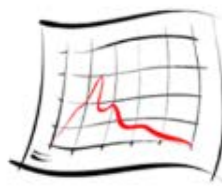
Additional Resources



Weather Forecast



Rainfall Forecast



River Forecast



Flood Maps



Plot Gage Data



Gage Data Maps



Landslide



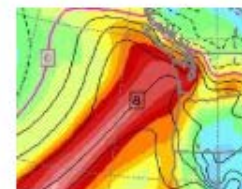
Radar Rainfall



Road Conditions



USGS Gages

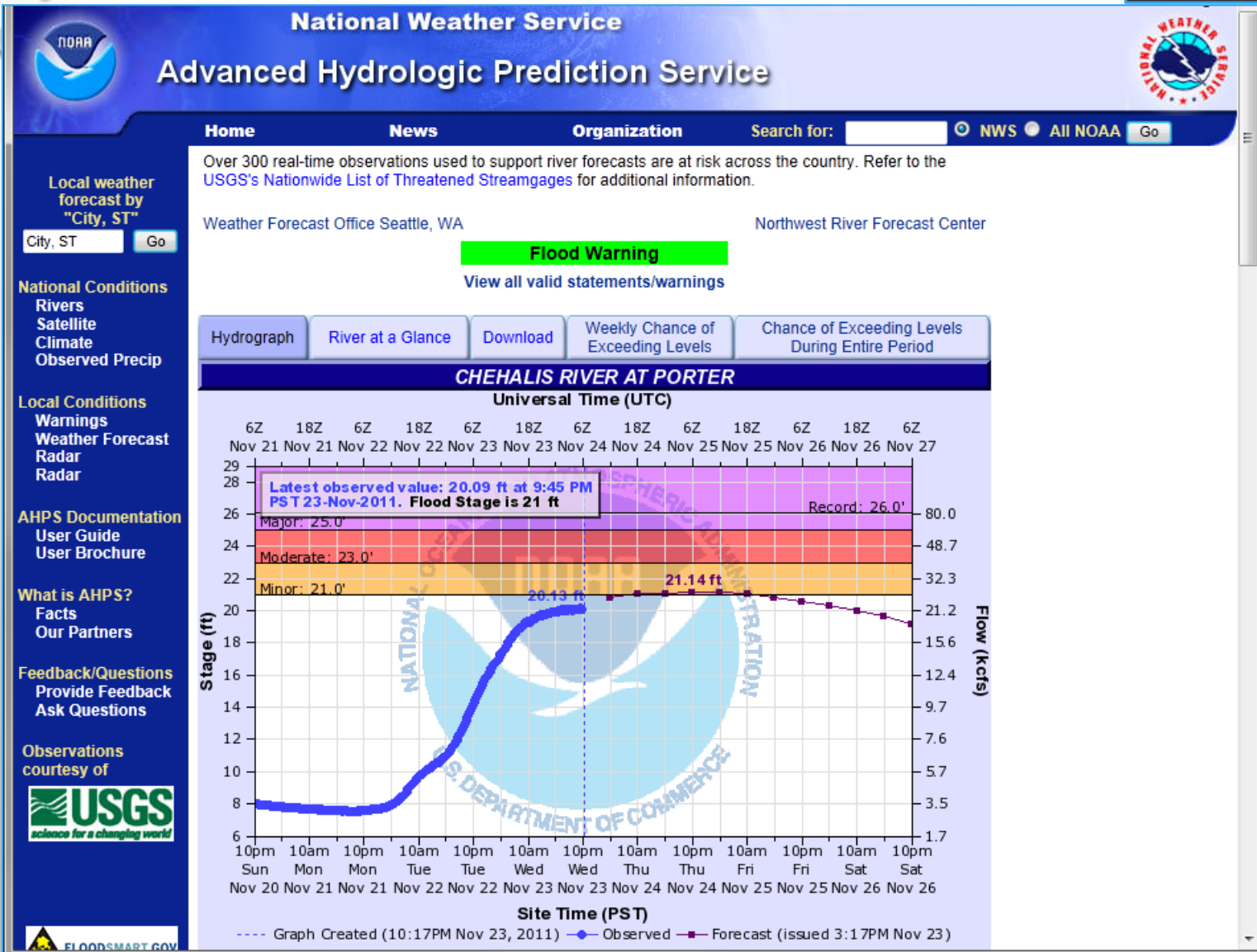


Atmospheric Rivers



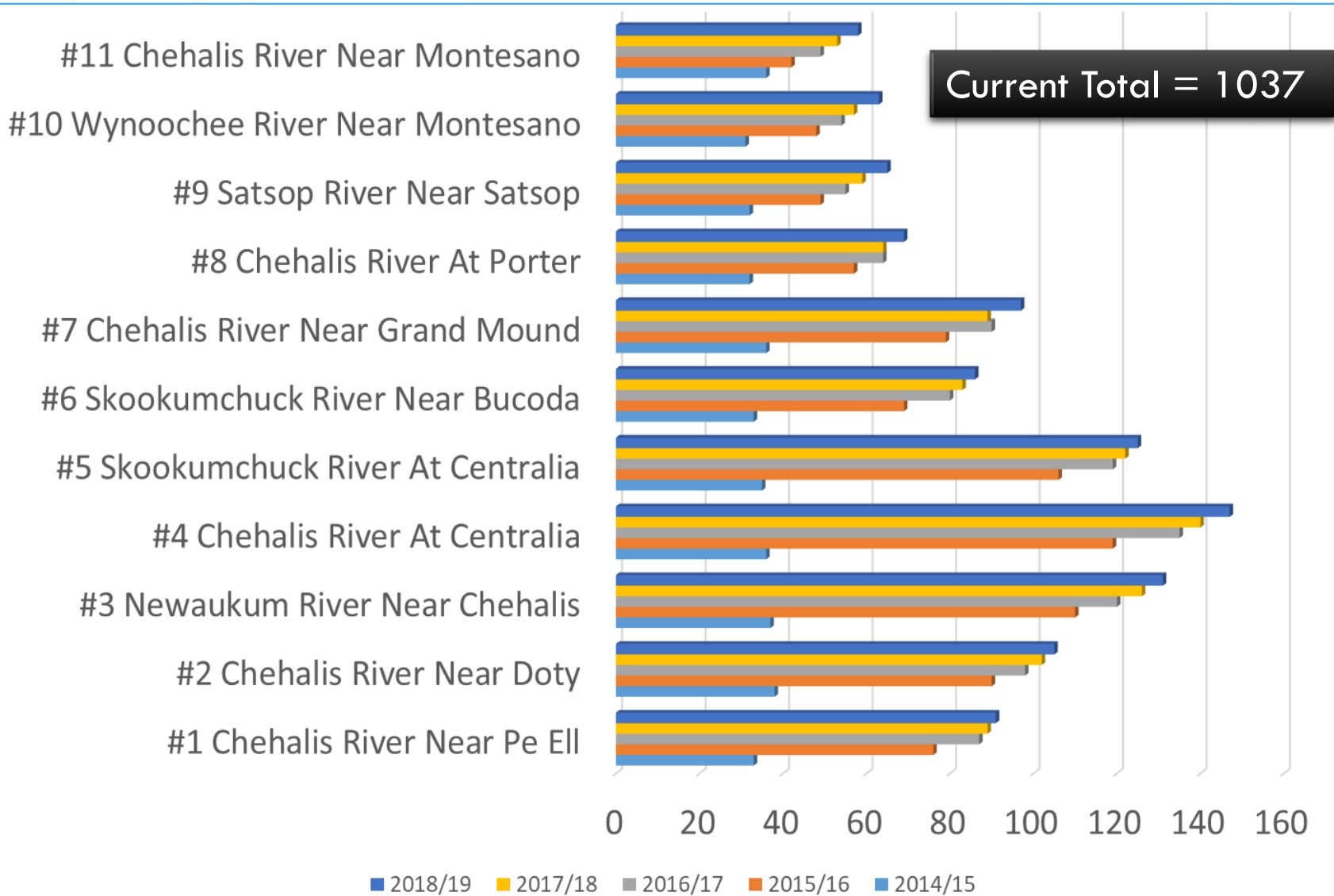
Chehalis Basin Gage  
Height Conversion  
Project

# EMAIL GAGE ALERTS: RISING RIVER LEVELS



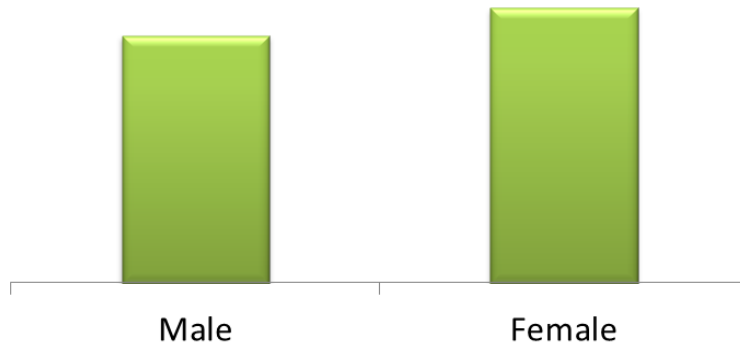


# EMAIL GAGE ALERTS: SIGN-UPS

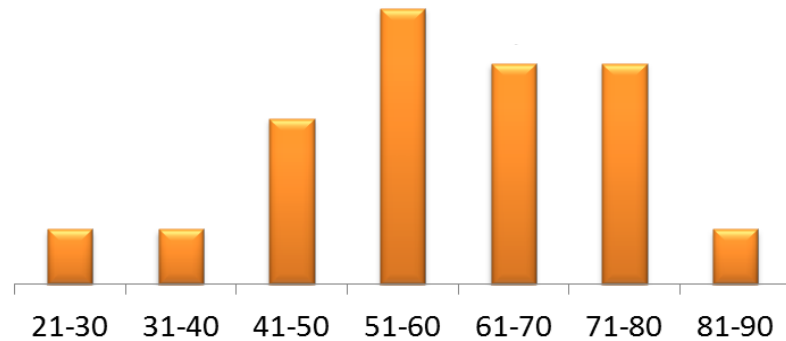


# EMAIL GAGE ALERTS: USER SURVEY

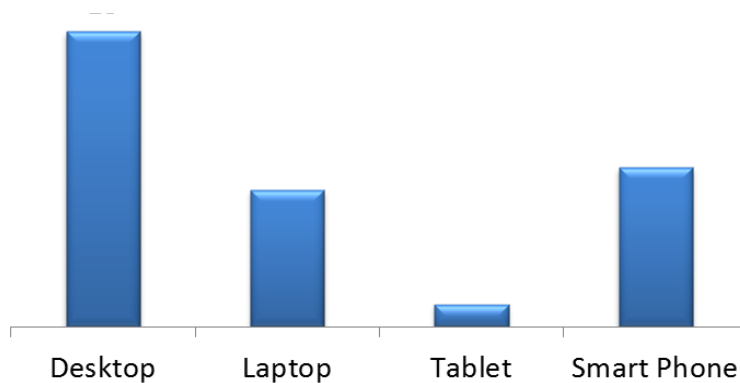
**Gender**



**Age**



**Device**



**Purpose**

News gathering	Travel concerns
Reside	General Interest
Elected Official	Job
Early warn	Testing
WSDOT EOC	Employee study safety
Relatives in Chehalis	General Interest
Weyerhaeuser	First responder
Lewis County Pub Wrks	Animal safety
Travel concerns	Elected Official
Employee safety	

# EMAIL GAGE ALERTS: KEY BENEFITS



- SITUATIONAL AWARENESS
- EMPLOYEE/STAFF SAFETY
- RESIDENCE SAFETY
- TRAVEL PLANNING



# EMAIL GAGE ALERTS: SIGN-UP NOW

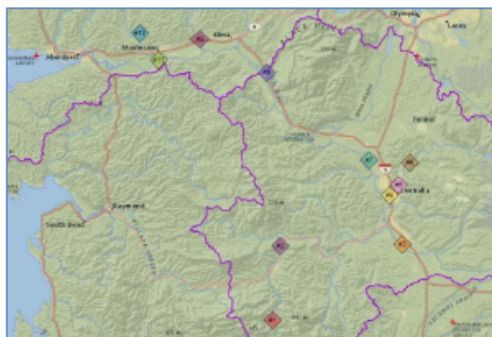


## 2019/20 Flood Season: Flood Warning System Email Alerts Sign-Up Today!



*Chehalis River Basin Flood Warning System* sends email alerts about rising river levels from the following gage sites:

- #1 Chehalis River Below Thrash Creek -- <https://bit.ly/2lsYxqE>
- #2 Chehalis River near Doty -- <https://bit.ly/2mZWtae>
- #3 Newaukum River near Chehalis -- <https://bit.ly/2mzvmSX>
- #4 Chehalis River at Centralia -- <https://bit.ly/2lvRsFM>
- #5 Skookumchuck River at Centralia -- <https://bit.ly/2luAPKO>
- #6 Skookumchuck River near Bucoda -- <https://bit.ly/2kTbszX>
- #7 Chehalis River near Grand Mound -- <https://bit.ly/MtJ56A>
- #8 Chehalis River at Porter -- <https://bit.ly/2mqoe8X>
- #9 Satsop River near Satsop -- <https://bit.ly/2kXJ5nI>
- #10 Wynoochee River near Montesano -- <https://bit.ly/2noosMn>
- #11 Chehalis River near Montesano -- <https://on.doi.gov/2lsFtZJ>



(Click [here](#) to open gage alerts map.)

**Sign-Up** to receive email alerts from any of the above sites by sending [scottb@sbgh-partners.com](mailto:scottb@sbgh-partners.com) and [dcurtis@westconsultants.com](mailto:dcurtis@westconsultants.com):

- Your name.
- Your email.
- The gage site number(s) you are interested in.

**Questions** can be directed to Scott Boettcher (Chehalis River Basin Flood Authority Staff), [scottb@sbgh-partners.com](mailto:scottb@sbgh-partners.com), 360/480-6600.

# INUNDATION MAPPING

**No Flood**



**Moderate**



**Action**



**Major**



**Minor**



**Major**





# INUNDATION MAPPING



## Chehalis River at Centralia, WA

### Current NWS Forecast

< 53.27 ft >

5/6/2014 11:30 AM

(observed value)

### River Stage (ft)

Hover mouse over river stage to  
show corresponding flood map

61.0

61.6

62.6

63.6

64.6

### Minor Flood Stage

65.6

66.6

67.6

### Moderate Flood Stage

68.6

69.6

70.6

71.6

### Major Flood Stage

72.6

73.6

74.6

76.1





# GETTING READY FOR 2019-20 FLOOD SEASON

- INSTALL 3<sup>RD</sup> WEBCAM AT SATSOP RIVER MONTE-ELMA BRIDGE
- IMPLEMENT OUTREACH CAMPAIGN
  - SCHOOLS
  - CHURCHES
  - UTILITY MAILERS
- CONSIDER TRAINING WEBINAR IN NOVEMBER

# ON THE RIGHT TRACK



## JAMES LEE WITT LOCAL AWARD FOR EXCELLENCE IN FLOODPLAIN MANAGEMENT



Cleveland, Ohio

# THANK YOU!

SCOTT BOETTCHER, STAFF  
CHEHALIS RIVER BASIN FLOOD AUTHORITY

360/480-6600

[SCOTTB@SBGH-PARTNERS.COM](mailto:SCOTTB@SBGH-PARTNERS.COM)

*BE AWARE, BE PREPARED*