



Approved by the Chehalis  
River Basin Flood  
Authority, 11-21-2024.

November 21, 2024

**TO:** Flood Authority Members

**FROM:** Scott Boettcher, Staff

**SUBJECT:** 2025 Flood Warning System Budget and County Shares

Purpose of this memo is to revisit 2025 Flood Warning System annual operations and maintenance costs ([www.chehalisriverflood.com](http://www.chehalisriverflood.com)). Contact Scott (360/480-6600, [scottb@sbgh-partners.com](mailto:scottb@sbgh-partners.com)) with questions.

### Current and Future O&M Costs

1. At 9-19-2024 Flood Authority meeting, staff introduced current and future O&M costs for Flood Warning System if Flood Authority were to authorize purchase and installation of: (a) three new lower basin rain gages; (b) one new lower basin tide gage; and (c) a new software package. See [here](#).
2. At that meeting, staff was directed to revisit and refine those costs and return to the Flood Authority.
3. Staff and WEST Consultants (Jeff Budnick) have held several meetings with others (NWS, NOAA, NWRFC, Aberdeen, Contrail) and have been able to reduce proposed O&M costs as follows:
  - Three new lower basin rain gages → 0% reduction in cost as would stay with same O&M standard as Flood Authority's other 11 rain gages.
  - One new tide gage → ~ 67% reduction in cost by opting for lesser, yet still adequate, O&M standard than NOAA's "gold" standard for O&M.
  - New software package → ~ 70% reduction in cost by staying with current software.
4. See Attachment 1 – REVISED Annual O&M Costs

### Cost Allocation

5. At that 9-19-2024 meeting staff proposed an allocation of 40% (Grays Harbor County), 40% (Lewis County), and 20% (Thurston County) to more equitably align with Flood Warning System assets.

### Staff Recommendation

6. Staff recommends Flood Authority approve: (a) REVISED Annual O&M Cost; (b) stair-step into revised allocation; and (3) return to Flood Authority with recommendation on surplus Capital Budget.
7. See Attachment 2 – Staff Recommendation.

# Attachment 1

## Breakdown and Comparison of REVISED Annual O & M Costs (2014 through 2030)

Operations & Maintenance (O & M)														Projection <sup>a</sup>				
2024/25 Theme --> <u>Increased usage, Improved lower basin forecasting.</u>																		
Breakdown of Annual O & M Costs		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025 <sup>a</sup>	2026	2027	2028	2029	2030
WEST Consultants (Jeff et al)	<b>Gage/Webcam maintenance</b> -- 2024 (15 gages, 3 webcam locations). 2025-2030 (19 gages, 3 webcam locations).	\$38,438	\$38,438	\$38,438	\$38,438	\$39,207	\$39,991	\$46,391	\$53,031	\$56,212	\$64,585	\$68,460	\$70,856	\$76,336	\$108,508	\$121,306	\$125,552	\$129,946
WEST Consultants (Jeff et al)	<b>Operational/Administrative support</b> -- On-going support for website monitoring and updates for both routine operations and during potential flood events.	\$11,336	\$11,336	\$11,336	\$11,336	\$11,563	\$11,794	\$12,030	\$12,270	\$13,007	\$13,787	\$14,614	\$24,114	\$24,958	\$25,831	\$26,735	\$27,671	\$28,640
	<b>GIS support</b> -- On-going support for ArcGIS gage alerts dashboard and ArcGIS Survey 123 alerts sign-up.	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	\$8,684						
WEST Consultants (Jeff et al)	<b>Spare parts inventory</b> -- Extra parts in event of broken or malfunctioning gages.	n/a	\$6,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,623	\$3,749	\$3,881	\$4,016	\$4,157	\$4,302
Mobility Help Desk	<b>Webcam cell fees</b> -- 3 cell data plans.	n/a	n/a	n/a	n/a	n/a	n/a	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,553	\$1,607	\$1,663	\$1,721	\$1,782
OneRain (Contrail)	<b>Webcam subscription fees</b> -- 4 subscriptions.	n/a	n/a	n/a	n/a	n/a	n/a	\$1,260	\$1,260	\$1,260	\$1,680	\$1,848	\$1,913	\$1,980	\$2,049	\$2,121	\$2,195	\$2,272
OneRain (Contrail)	<b>Website</b> -- One-rain annual subscription (306 sensors), Plus GoDaddy subscription for hosting Inundation Maps.	\$3,811	\$3,811	\$5,261	\$5,261	\$5,500	\$5,877	\$6,000	\$6,500	\$6,500	\$6,500	\$7,000	\$7,000	\$7,245	\$7,499	\$7,761	\$8,033	\$8,314
Lewis County (Mindy, Sarah)	<b>Billing and processing.</b>	n/a	\$900	\$900	\$900	\$900	\$900	\$900	\$900	\$900	\$900	\$900	\$932	\$964	\$998	\$1,033	\$1,069	\$1,106
<b>Total --&gt;</b>		\$53,585	\$60,485	\$57,935	\$57,935	\$59,169	\$60,562	\$70,081	\$78,461	\$82,379	\$91,952	\$106,007	\$109,937	\$116,785	\$150,372	\$164,635	\$170,397	\$176,361
<b>Note a</b> -- Gage/Webcam maintenance and Operational/Administrative support increased 2% for 2018-21, 6% for 2022-24. All costs increase 3.5% for 2025-30.																		

- Three new lower basin rain gages → 0% reduction in cost as would stay with same O&M standard as Flood Authority's other 11 rain gages.
- One new tide gage → ~ 67% reduction in cost by opting for lesser, yet still adequate, O&M standard than NOAA's "gold" standard for O&M.
- New software package → ~ 70% reduction in cost by staying with current software.
- Comparison:

Year	2025	2026	2027	2028	2029	2030
9/18/2025 -->	\$102,937	\$109,540	\$167,873	\$199,749	\$206,740	\$213,976
11/21/2024 -->	\$109,937	\$116,785	\$150,372	\$164,635	\$170,397	\$176,361
Difference -->	\$7,000	\$7,245	(\$17,501)	(\$35,114)	(\$36,343)	(\$37,615)

## Attachment 2 Staff Recommendation

### REVISED Annual O&M Cost

1. Staff recommends approving revised costs on the basis that costs have been substantially reduced and the benefits to be gained from new lower basin gages are substantial (e.g., lower basin river forecast, whole basin coverage, better management tools for North Shore Levee, etc.)

### Stair-Step to Revised Allocation

2. Staff recommends stair-stepping to revised allocation approach as follows:

Allocation Approach	22% / 64% / 14%		10.3% 0% 10.3%	16.27% 0% 16.27%	40% / 40% / 20%			
Year	2023	2024	2025	2026	2027	2028	2029	2030
Grays Harbor County	\$20,229	\$23,321	\$25,723	\$29,908	\$60,149	\$65,854	\$68,159	\$70,544
Lewis County	\$58,849	\$67,844	\$67,844	\$67,844	\$60,149	\$65,854	\$68,159	\$70,544
Thurston County	\$12,873	\$14,841	\$16,370	\$19,033	\$30,074	\$32,927	\$34,079	\$35,272
Total -->	\$91,951	\$106,006	\$109,937	\$116,785	\$150,372	\$164,635	\$170,397	\$176,364
Adds 3 lower basin rain gages								
Adds 1 lower basin tide gage <u>supported and maintained at "regular standard level"</u>								
Keeps existing software								

This allows two-years to adjust to higher annual rates for Grays Harbor County and Thurston County, while not increasing costs for Lewis County.

Staff further recommends Lewis County (as fiscal agent) implement and prepare payment schedules (1<sup>st</sup> half due 3/31/2025; 2<sup>nd</sup> half due 7/31/2025). NOTE: Lewis County, acting as Flood Authority's fiscal agent, has historically handled billing and processing for costs with Flood Warning System. It is assumed this practice will continue for 2025.

### Return to Flood Authority with Recommendation on Surplus Capital Budget

3. Chehalis Basin Board allocated \$363,000 in August 2024 for new gages (rain, tide) and new software. That full \$363,000 is no longer needed (e.g., new \$55K software package is off the table and \$50K higher "gold" standard for tide gage is off the table.). Staff recommends looking at options for ~\$100,000 in "surplus" Flood Warning System capital budget funds, including returning those funds, and report back to the flood Authority at their next meeting.