Chehalis River Basin

Reducing Flood Damage and

Enhancing Aquatic Species Across The Basin

March 5, 2014

Grand Mound-Rochester Chamber of Commerce

12 noon

Today's Presentation . . .

- **Provide update**
- **Encourage discussion**
- **Key messages . . .**

1. Broad agreement -- For first time in a century there is broad agreement across the Basin on next steps to reduce flood damage and enhance salmon and aquatic species.

2. Basin-wide strategy -- An action-oriented, multi-phased Basin-wide strategy is needed to protect communities along the river and enhance aquatic species.

3. Collaboration is key -- WA State Legislature, Governor's Office, Governor's Chehalis Basin Work Group, Chehalis River Basin Flood Authority, and WA State Agencies all working together = A powerful force for action!

4. Fundamental principle -- Solving one's problems doesn't increase another's.

Action . . .

Photos Source: THE CHRONICLE →

CHEHALIS RIVER BASIN FLOOD AUTHORITY

"Governor's Chehalis Basin Work Group"

- **Appointed by Gov. Gregoire (2012); Re-confirmed by Gov. Inslee (2013).**
- **Developed Next Steps Framework, $28.2 capital budget request (2013-15).**
- **Looking Forward** → Tasked by Gov. Inslee to oversee implementation of 2013-15 budget, recommend next steps by mid-November 2014 for: Water retention; I-5; Other Basin improvements; Aquatic species enhancement.
- **Members are:**
  - David Burnett (Chairman Chehalis Tribe).
  - Karen Valenzuela (Thurston County Commissioner, Vice-Chair Flood Authority).
  - Vickie Raines (Mayor Cosmopolis, Chair Flood Authority).
  - J. Vander Stoep (Private Attorney, Pe Ell Alternate Flood Authority).
  - Jay Gordon (President Washington Dairy Federation and Chehalis Farmer).
  - Sandi Triggs (Capital Budget Advisor to Governor).
  - Keith Phillips (Governor's Energy and Environment Advisor).

“Chehalis River Basin Flood Authority”

- **Formed in 2008**

- **Formal body focused on:** (1) flood hazard mitigation throughout the Basin; and (2) decision-making that is . . . .
  - informed by science.
  - protective of Basin residents/communities.
  - environmentally appropriate.

- **Basin jurisdictions represented**
  - Grays Harbor County
    - City of Aberdeen
    - City of Cosmopolis
    - City of Montesano
    - City of Oakville
  - Lewis County
    - City of Centralia
    - City of Chehalis
    - City of Napavine
    - Town of Pe Ell
  - Thurston County
    - Town of Bucoda

Background . . .

- **2007 Flood -- $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

Background . . .

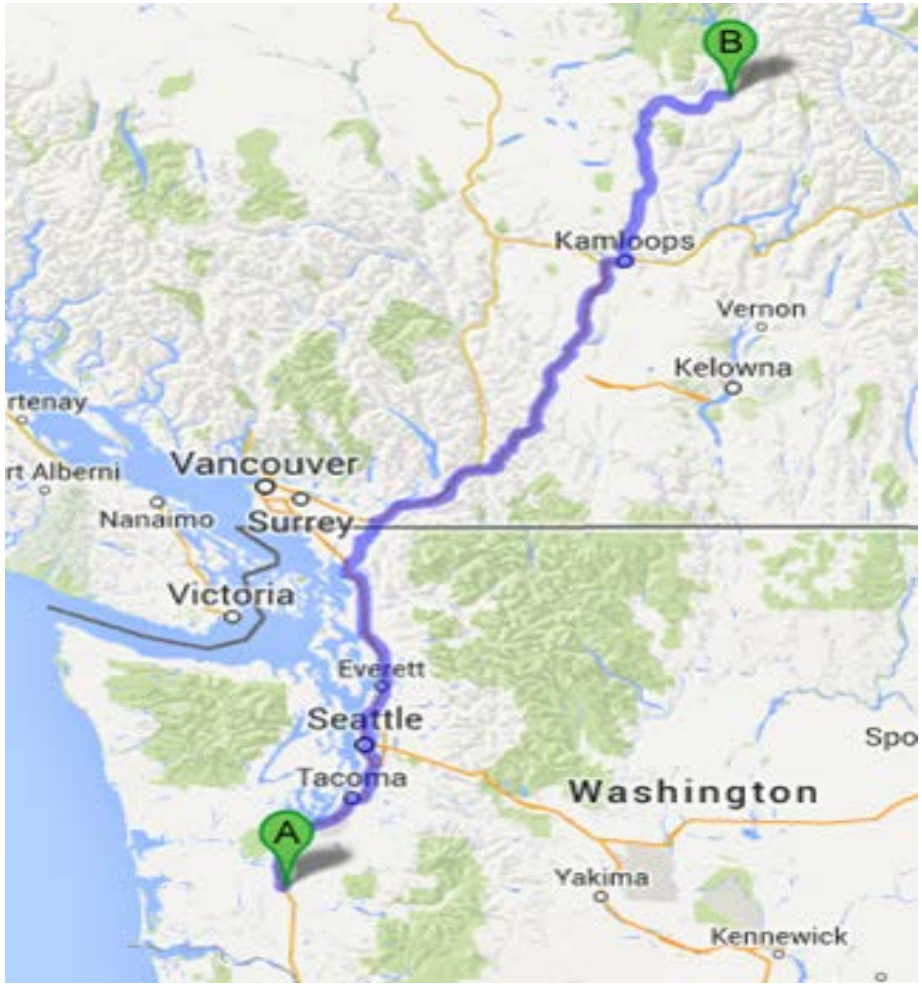
- **2007 Flood -- I-5 and Hwy 507 Interchange looking South.**

City of Centralia and I-5
STEVE RINGMAN /
SEATTLE TIMES

Background . . .

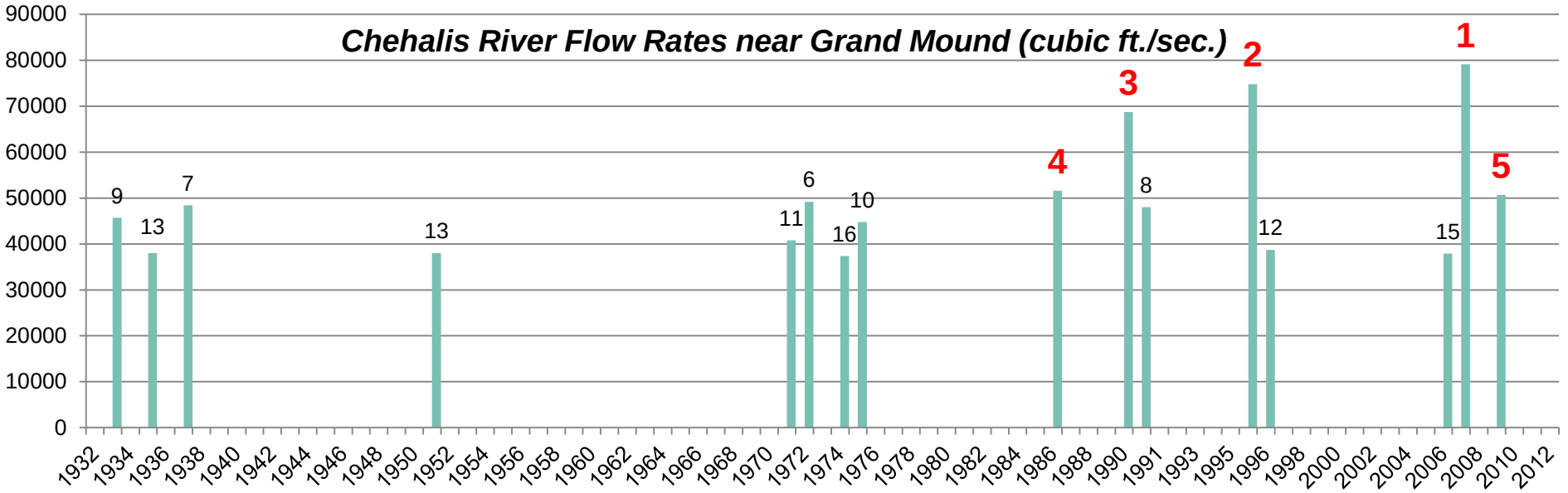
- **289,983 acre feet of measured water (12/03-08/2007).**

- **Equivalent to covering roadway between Chehalis and North of Kamloops with 1 foot of water 1-mile wide or covering . . .**
  - 80% of Kitsap County.
  - 69% of Clark County.
  - 59% of Thurston County.



Background . . .

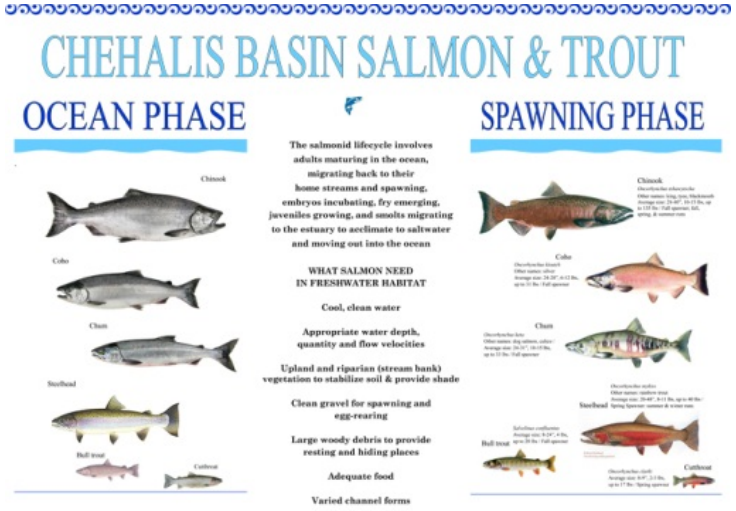
- **Ranked high flow events (1932 - 2012) . . .**
  - I-5 closed 1990, 1996, 2007, 2009
  - Five largest events since 1986 -- *Frequent floods are getting worse and damage is increasing . . .*



Background . . .

- **Chehalis is the second largest river basin in the state, rich in natural resources . . .**
- **Salmon populations are 15-25% of historic levels.**
- **TMDL for the basin** (http://www.ecy.wa.gov/programs/wq/tmdl/ChehalisRvrTMDLSummary.html).

Upper Chehalis (5/31/2010)
JAMES E. WILCOX / WILD GAME FISH CONSERVATION INTERNATIONAL

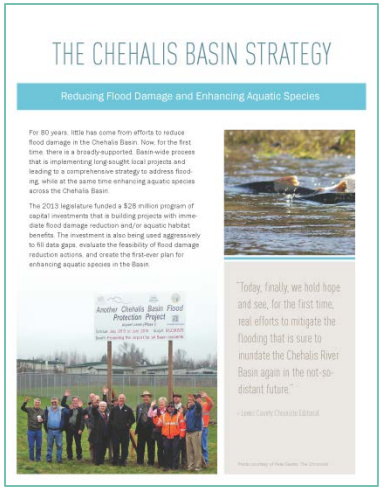


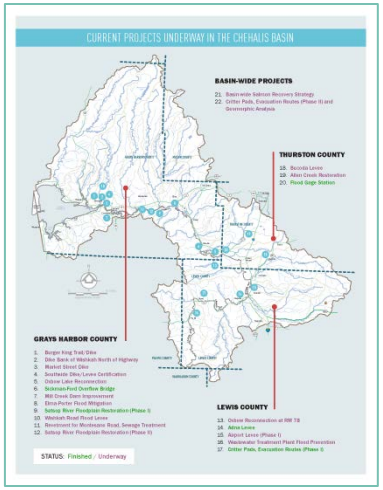
www.chehalisbasinpartnership.org

Solution = Basin-Wide Approach

Action-oriented, Multi-phase Approach

1. Basin-Wide Relationships
2. Hydraulic Understanding
3. Large Capitol Projects
4. Smaller-Scale Local Projects
5. Land Use, Floodplain Management
6. Enhance Salmon and Aquatic Species
7. Early Flood Warning
8. Outreach, Education and Communication





CHEHALIS RIVER BASIN FLOOD AUTHORITY

March 2014

1. Basin-Wide Relationships

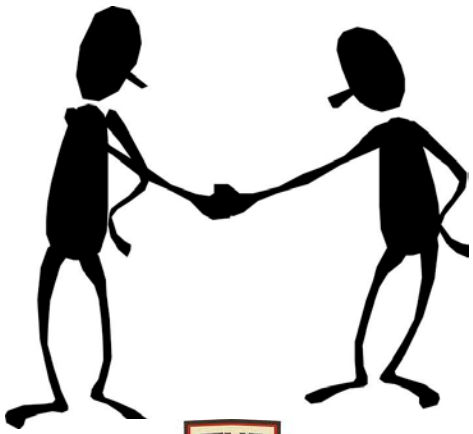
Grays Harbor County 1854

Lewis County — Washington's First County — est. 1845

Thurston County — Washington — Since 1852

Seal of the State of Washington — 1889

TOWN of BUCODA



City of Aberdeen — Washington

Centralia

Washington State Conservation Commission

City of Cosmopolis — Incorporated 1891

1883 Chehalis, Washington

Department of Ecology — State of Washington

City of Montesano — Home of the Tree Farm — www.montesano.us

City of Napavine — 1913 Centennial 2013

Washington Department of Fish and Wildlife

The Chehalis Tribe

Washington State Department of Natural Resources

City of Oakville — Incorp. 1905

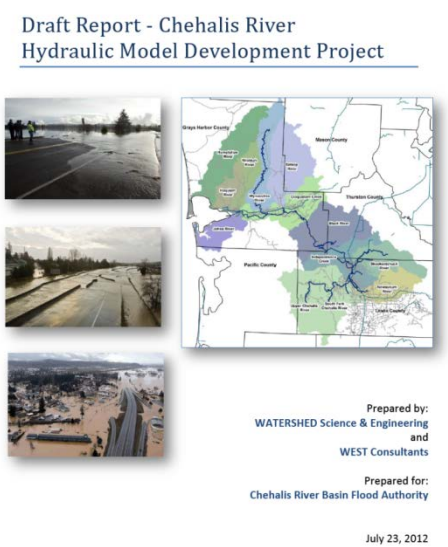
Town Of Pe Ell — Home Of The Trojans!

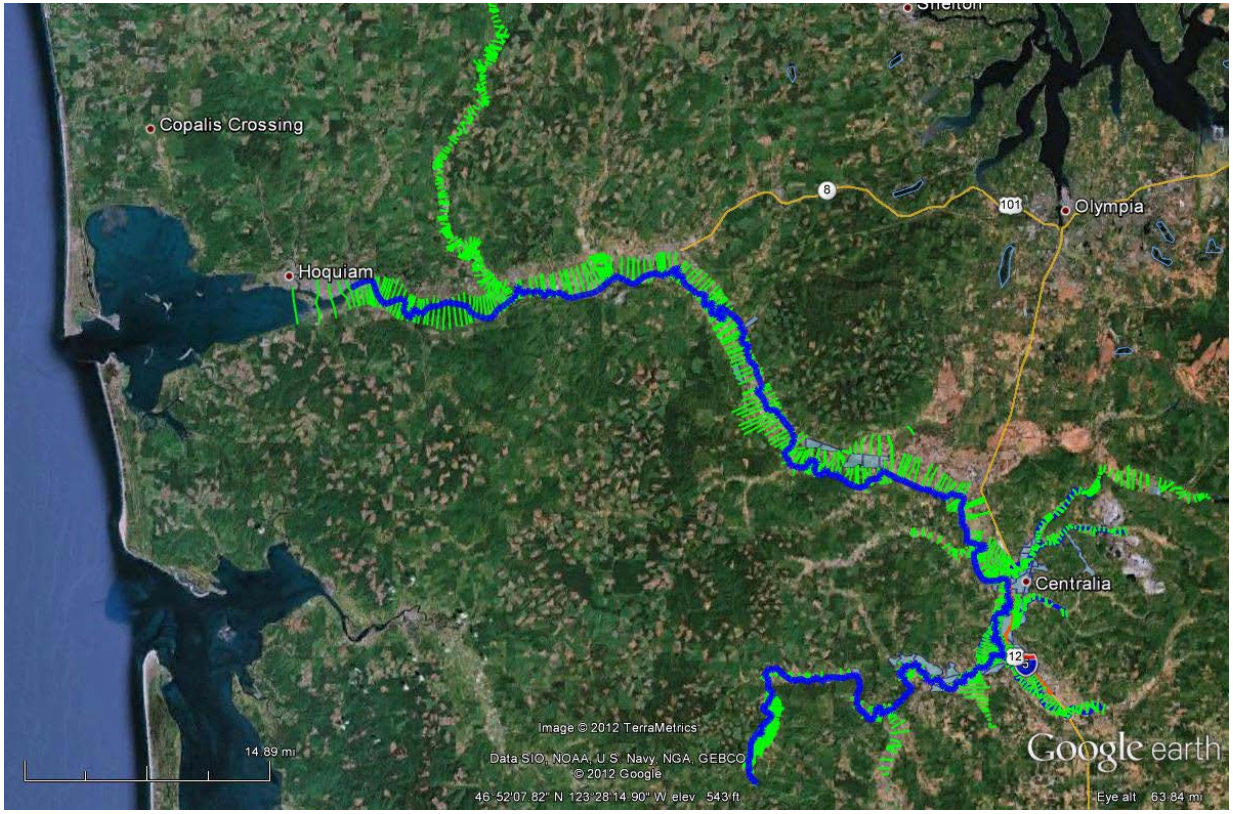
Office of Financial Management — Better information. Better decisions. Better government.

Chehalis River Basin Flood Authority

2. Hydraulic Understanding

- **Science-based model --** To inform decision-makers on hydraulic effects of potential flood relief options (at basin-wide and localized scales).
- **108 miles --** Mouth of Chehalis River upstream to Pe Ell (108 miles).

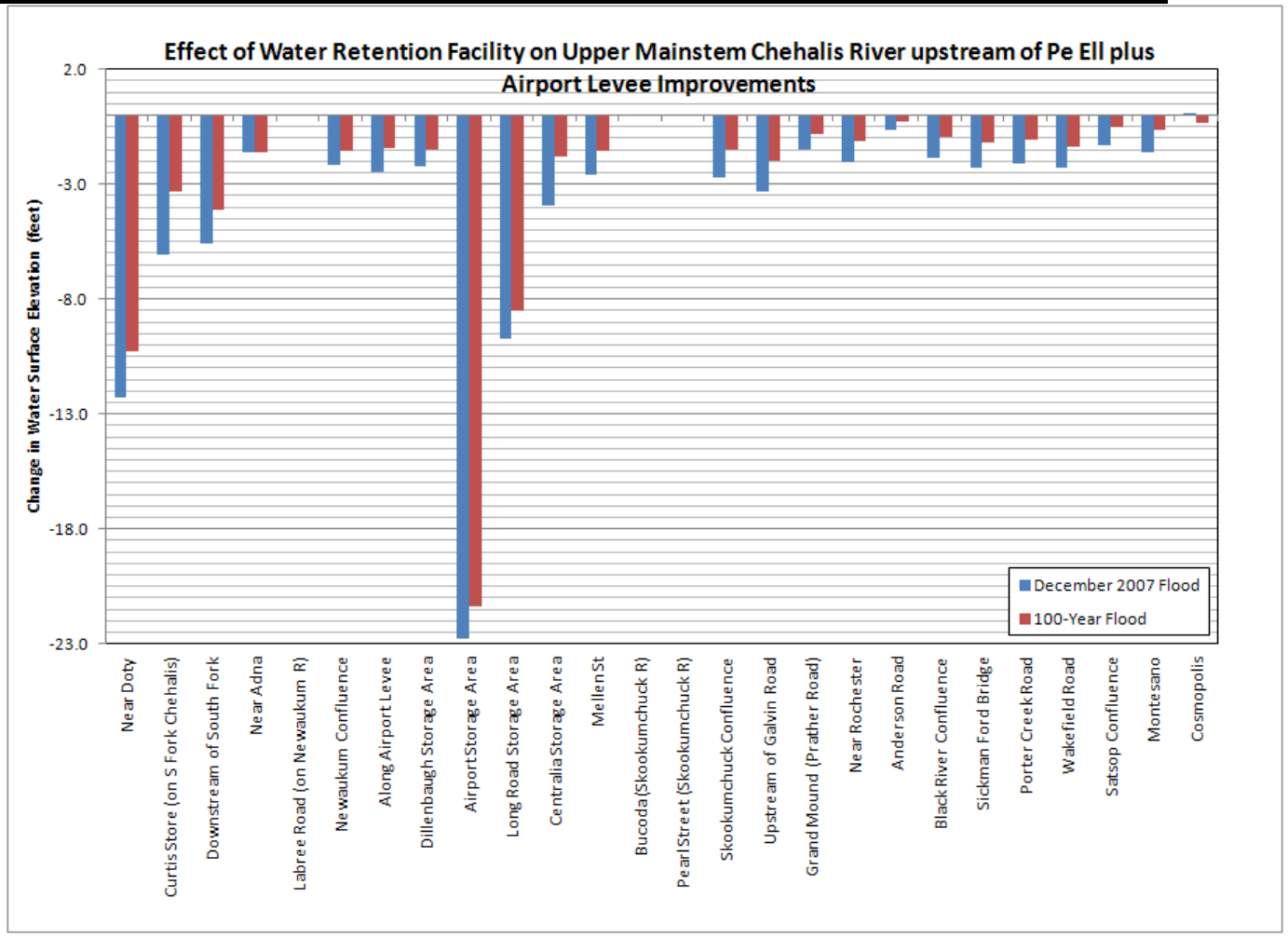




CHEHALIS RIVER BASIN FLOOD AUTHORITY

2. Hydraulic Understanding

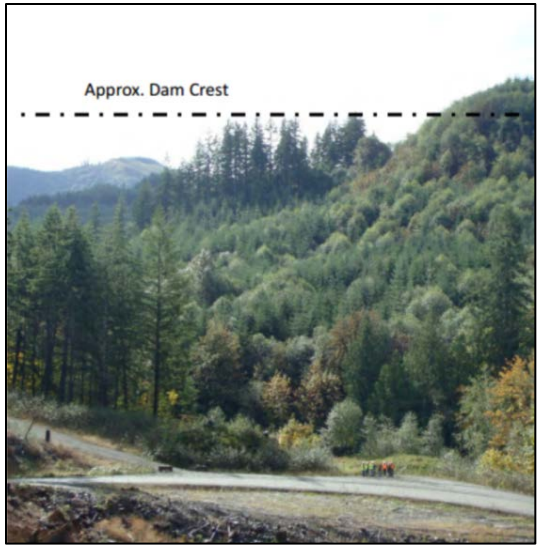
- **Example: Basin-wide effects analysis** (Watershed Science and Engineering; Chehalis Basin Flood Hazard Mitigation Alternatives Report analysis; 12/2012)



3. Large Capitol Projects

- **Technical team evaluating safety, feasibility of upper basin water retention structure --** field visits, site and design considerations, world-wide research, etc.
  - Permanent reservoir with fish passage or Run-of-the-river without permanent reservoir.
  - Roller compact concrete or Earthen fill.
  - Flood-control only or Multi-purpose.
- **WSDOT evaluating alternatives to protect Interstate 5** – levees, walls, raise, etc.
- **Comprehensive set of recommendations to Governor, Legislature (11/2014).**

Photos Source: →
ANCHOR QEA



www.ezview.wa.gov

Governor's Work Group -- November 13, 2014 (Policy Workshop #1)

Meeting Documents:

- Agenda and Meeting Location for upcoming Policy Workshop #1 -- Click here.
- Presentation 1: Work Group Charge and Process for Developing Recommendations -- Click here.
- Presentation 2: Design Storm Selection -- Click here.
- Presentation 3: Chehalis River Aquatic Species -- Click here.
- Presentation 4: Aquatic Species Enhancement Plan -- Click here.
- Presentation 5: Alternatives for Reducing Flood Damage -- Click here.
- Presentation 6: Dam Design and Fish Passage Research Findings -- Click here.
- Presentation 7: Methods for Comparing Alternatives -- Click here.

*** Napavine – Kirkland Road Project →

4. Smaller-Scale Local Projects

2012 Supplem. Capital Budget:

- $5.0M – Local projects.

2013-15 Capital Budget:

- $15.2M -- Local projects, aquatic species enhancement.

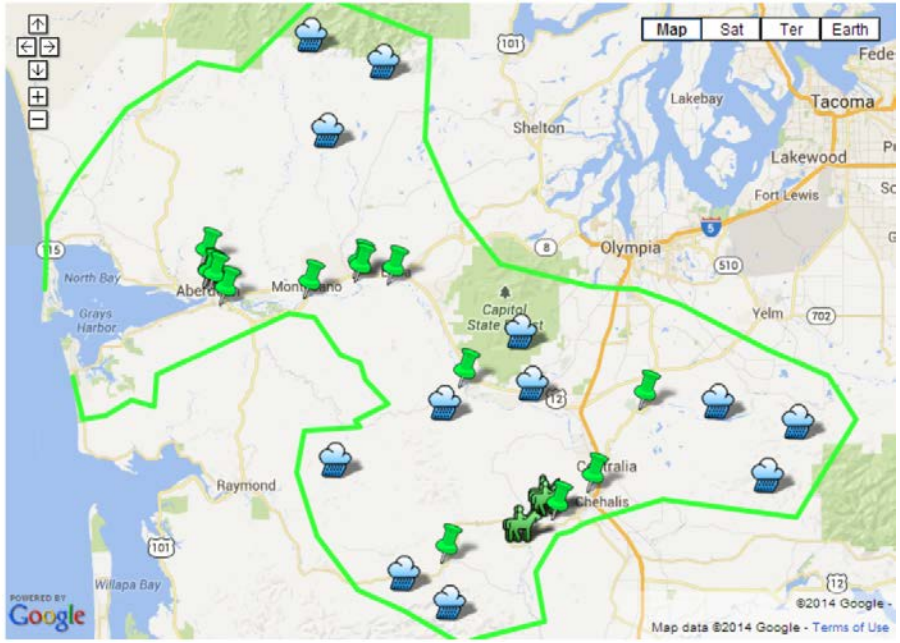
2015-17 Capital Budget:

- $??M – More local projects***.

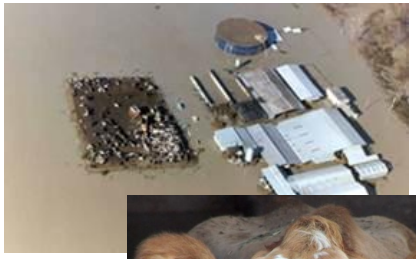
Local Projects Funded (2012, 2013-15):

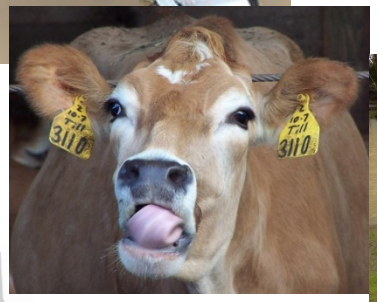
Critter Pads Funded (2012):

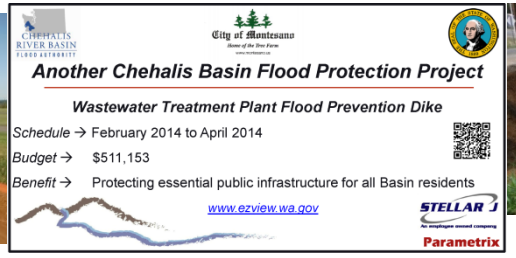
Gages Funded (2011):



(https://www.ezview.wa.gov/site/alias__1492/34489/local_projects.aspx)





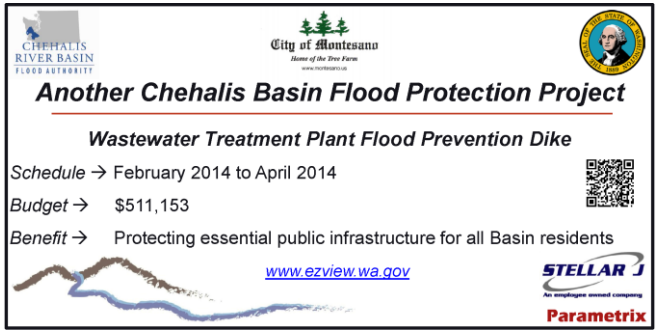


4. Smaller-Scale Local Projects

		2012 ($)	2013 ($)
GRAYS HARBOR COUNTY			
1 - Aberdeen	Burger King Trail/Dike	24,600	140,000
2 - Aberdeen	Dike Bank of Wishkah North of Highway	47,000	270,000
3 - Aberdeen	Market Street Dike	0	670,000
4 - Aberdeen	Southside Dike/Levee Certification	50,000	0
5 - Chehalis Tribe	Oxbow Lake Reconnection	0	1,149,009
6 - Chehalis Tribe	Sickman-Ford Overflow Bridge	2,075,000	0
7 - Cosmopolis	Mill Creek Dam Improvement	0	737,750
8 - Grays Harbor County	Elma-Porter Flood Mitigation	0	584,000
9 - Grays Harbor County	Satsop River Floodplain Restoration (Phase I)	50,000	0
10 - Grays Harbor County	Wishkah Road Flood Levee	125,000	690,000
11 - Montesano	Revetment for Montesano Rd., Sewage Treatment Plant, Mary's River Lumber	102,426	6,000,000
12 - WDFW	Satsop River Floodplain Restoration (Phase II)	450,000	0
LEWIS COUNTY			
13 - Chehalis Tribe	Oxbow Reconnection at RM 78	0	602,383
14 - Lewis County	Adna Levee	244,145	0
15 - Lewis County	Airport Levee (Phase I)	1,239,829	0
16 - Pe Ell	Wastewater Treatment Plant Flood Prevention Dike	0	521,000
17 - WSCC	Critter Pads, Evacuation Routes (Phase I)	500,000	0
THURSTON COUNTY			
18 - Bucoda	Bucoda Levee	42,000	305,000
19 - Chehalis Tribe	Allen Creek Restoration	0	987,645
20 - Chehalis Tribe	Flood Gage Station	50,000	0
BASIN-WIDE			
21 - TBD	Basin-wide Aquatic Species Plan	0	*1,350,000*
22 - WSCC	Critter Pads, Evacuation Routes (Phase II) and Geomorphic Analysis	0	*850,000*
		$ 5,000,000	**$ 14,856,787**

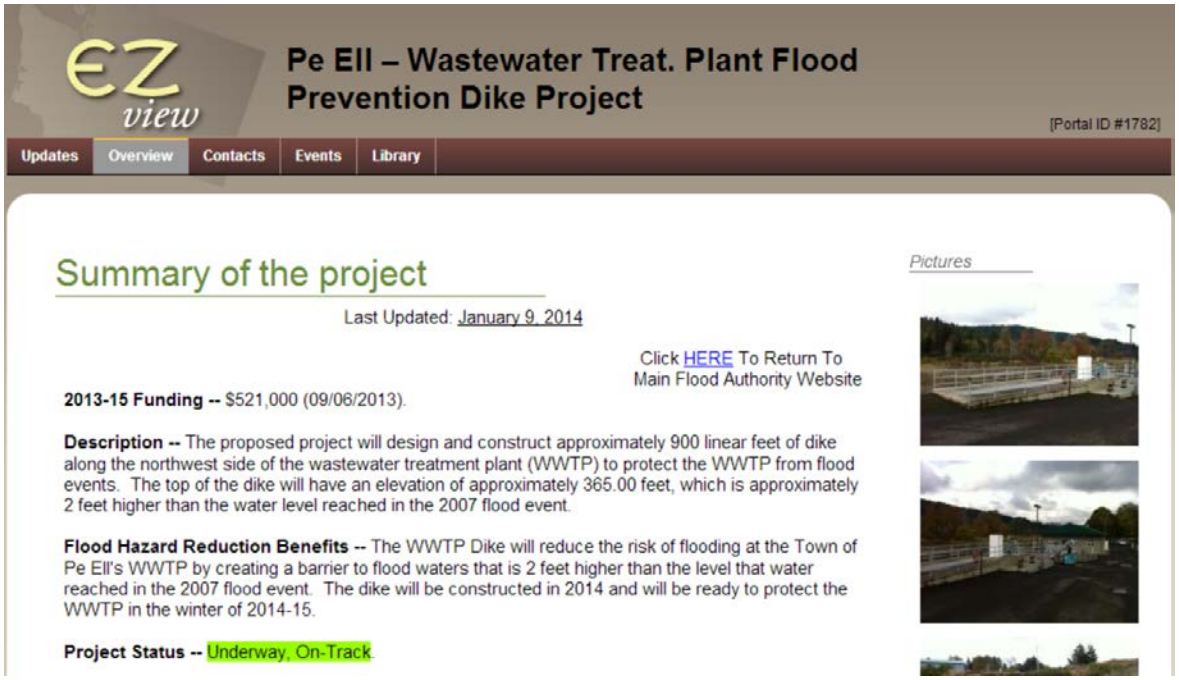
4. Smaller-Scale Local Projects

- **Revetment to Protect Montesano Road, Adjacent Facilities**
  - Mary's River Lumber = 120 family wage jobs.
  - State Highway (SR 107) = At risk of damage.
  - Montesano STP = Risk of overtopping.
  - Solutions and Alternative = Balance time, cost, results.
  - Project website.



4. Smaller-Scale Local Projects

- **Pe Ell -- WWTP Flood Prevention Dike**
  - Construct 900 foot dike between river and WWTP.
  - Final elevation to be 2 feet higher than 2007 flood.
  - Project website.



5. Land Use, Floodplain Management

- **Analyze local floodplain management programs across the Basin and, <u>where appropriate</u>, make recommendations to:**
  - protect existing homes/businesses.
  - ensure new development does not increase flood hazard risk.
  - identify ways to reduce flood insurance rates.
  - address properties that are repetitively flood damaged.

LEWIS COUNTY NOTICE TO CONSULTANTS FOR:

Request for Proposals (RFP)
Floodplain Management Analysis

Lewis County is seeking a qualified consulting firm or team to provide professional services to complete a floodplain management analysis report for jurisdictions in the Chehalis Basin.

PROJECT DESCRIPTION
Lewis County, Fiscal Agent for the Chehalis River Basin flood Authority, is seeking a qualified consulting firm or team to provide professional services to complete a floodplain management analysis report for jurisdictions in the Chehalis Basin; provide technical assistance to explore potential local and regional cooperative efforts that allow jurisdictions to improve local floodplain management, and work with the local governments in the Basin to develop a strategic approach for buyouts, elevating structures, and other techniques to address repetitive loss properties. The work in this proposal is part of the 2013-2015 Chehalis Basin Strategy, a State of Washington effort to reduce flood damage and enhance aquatic species in the Chehalis River Basin. For more information, view the Ruckelshaus Center's Chehalis Basin project site: http://ruckelshauscenter.wsu.edu/ChehalisFlooding.html

Interested consultants shall provide a letter of interest, approach/methodology, budget, personnel resume(s), experience related to this project, and client references.

- **Contract work to be completed by August 31, 2014.**

6. Enhance Salmon (Aquatic Species)

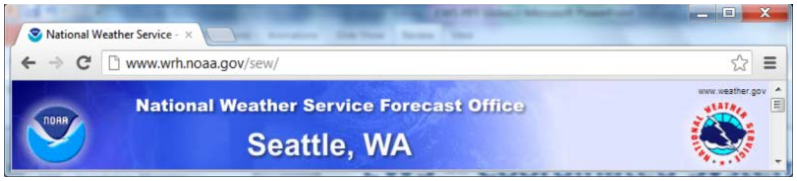
- **Collect aquatic species, water quality, hydrologic data.**
- **Model analyses to understand impacts/benefits on fish, wildlife, water quality, sediment, streamflow and flooding.**
- **Develop DRAFT and FINAL aquatic species enhancement plan.**
- **Comprehensive set of recommendations to Governor, Legislature (11/2014).**

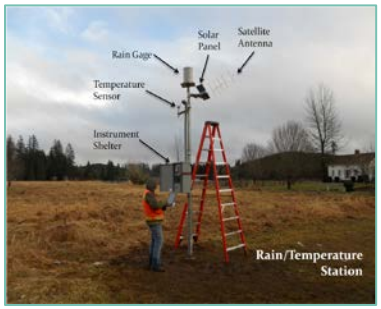
Seine collections (Chehalis River)

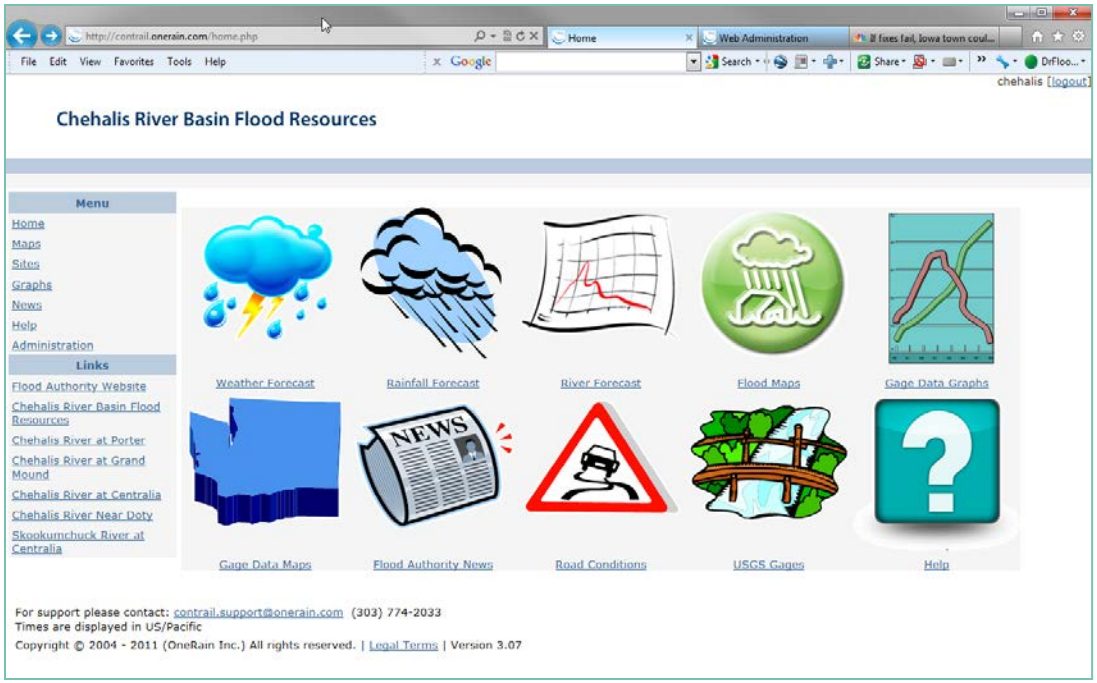
Downstream snorkel surveys (Chehalis River)

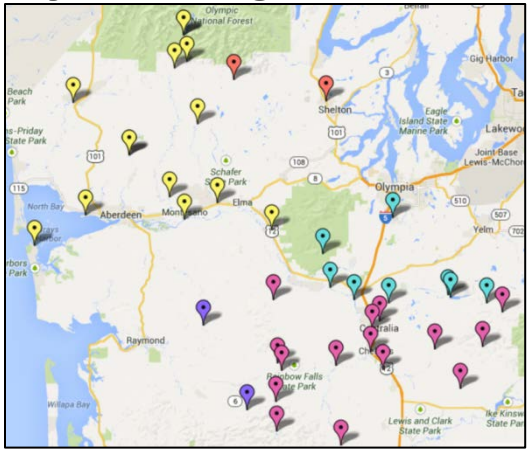
7. Early Flood Warning

- www.chehalisriverflood.com
- Front-facing website.
- Data collection, data synchronization.
- Improved forecasting, early-warning.



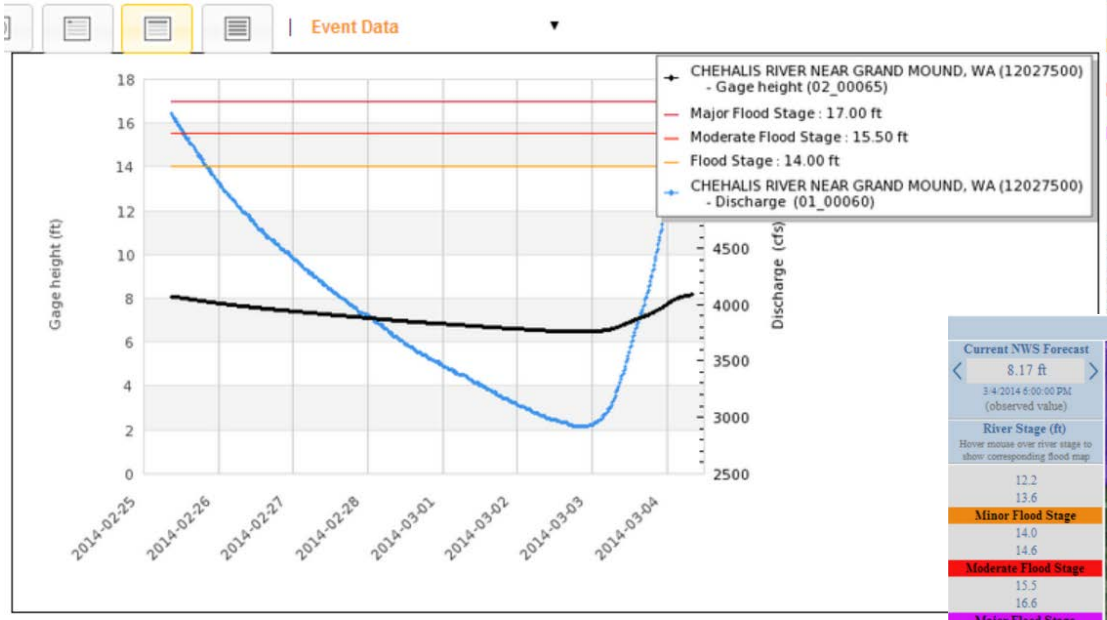


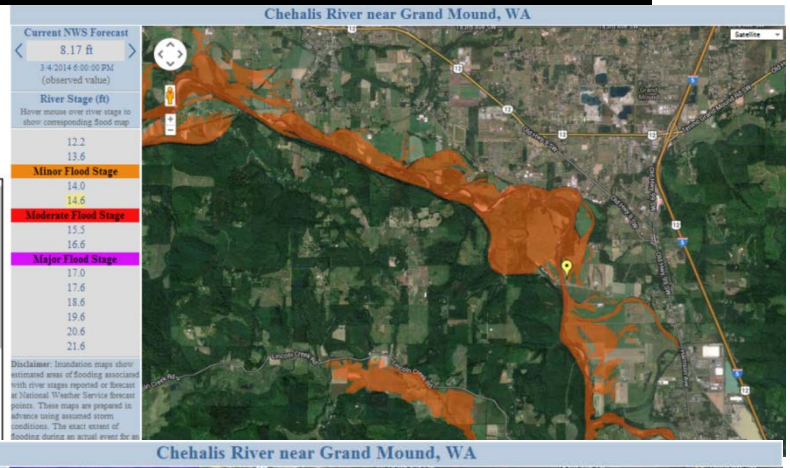


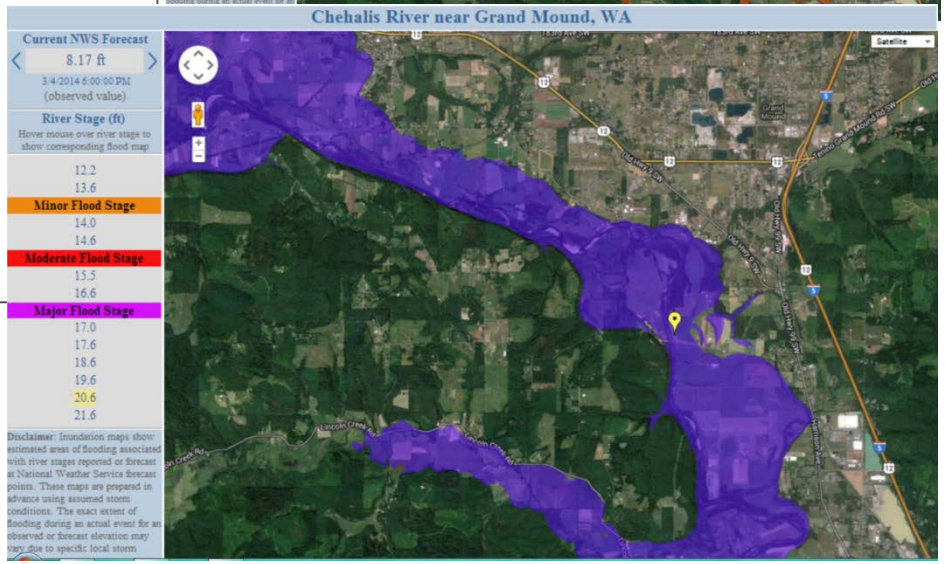


7. Early Flood Warning

- **Localized tracking, forecasting . . .**







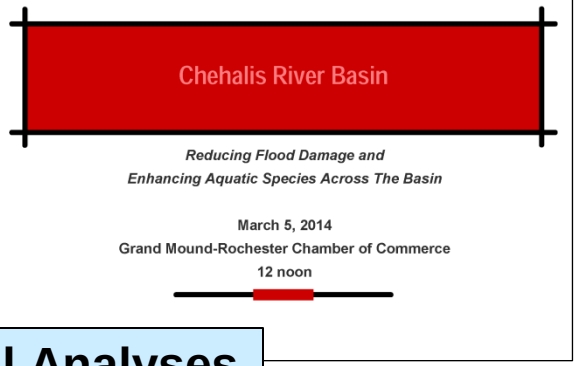
Daily discharge, cubic feet per second -- statistics for Mar 4 based on 84 years of record more

Min (2005)	25th percen-tile	Median	Mean	Most Recent Instantaneous Value Mar 4	75th percen-tile	Max (1987)
903	2340	3260	4670	5830	6340	22700

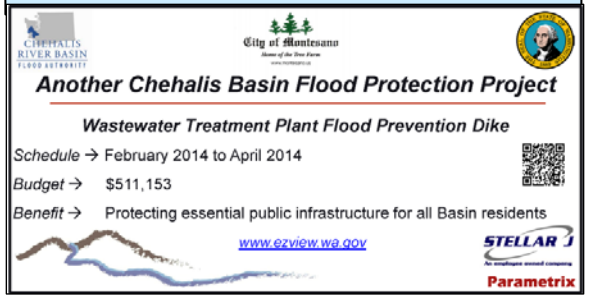
8. Outreach, Education and Communication

Website

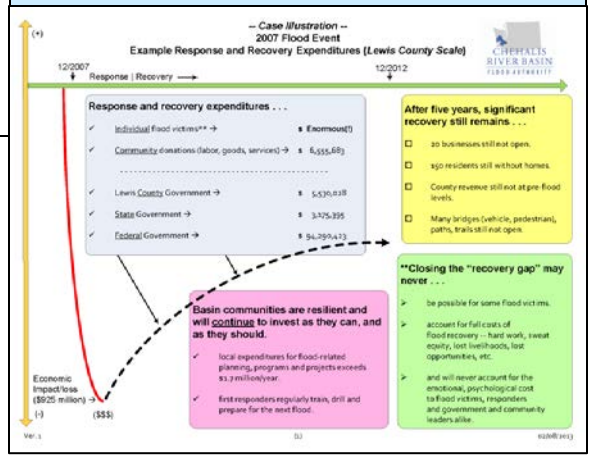
Outreach Visits



Project Signs



Informational Analyses



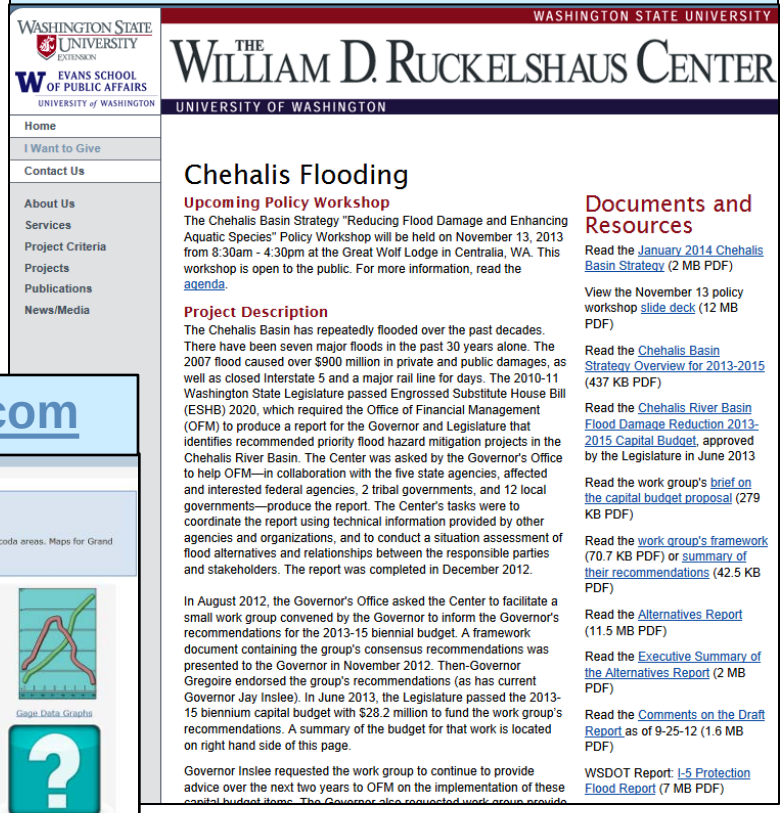
Email Distribution List

Pat Anderson
Pat.Anderson@lewiscountywa.gov

Resources, Additional Information . . .

www.ezview.wa.gov

http://ruckelshauscenter.wsu.edu/ChehalisFlooding.html



www.chehalisriverflood.com

Closing – 2007 Flood Damage . . .

Chehalis River near Doty
USGS

Closing – 2007 Flood Damage . . .

Clearing Mud in Curtis, WA
STEVE RINGMAN / SEATTLE TIMES

Closing – 2007 Flood Damage . . .

Curtis, WA, Aftermath of 7 Feet of Water
STEVE RINGMAN / SEATTLE TIMES

Closing – 2007 Flood Damage . . .

Chandler Road Bridge near Doty, WA
STEVE RINGMAN / SEATTLE TIMES

Closing – 2007 Flood Damage . . .

Closing – 2007 Flood Damage . . .

Closing – 2007 Flood Damage . . .

I-5 Under Water
BRUCE ELY / OREGONIAN

Closing – 2007 Flood Damage . . .

Chehalis, WA
STEVE RINGMAN / SEATTLE TIMES

Closing – 2007 Flood Damage . . .

Closing – 2007 Flood Damage . . .

Jackson Street, Centralia, WA
STEVE RINGMAN / SEATTLE TIMES

Closing – 2007 Flood Damage . . .

I-5 Under Water
BRUCE ELY / OREGONIAN

Closing – 2007 Flood Damage . . .

Photos Source:
WSDOT

March 2014

Closing – 2007 Flood Damage . . .

March 2014

CHEHALIS RIVER BASIN FLOOD AUTHORITY

Closing – 2007 Flood Damage . . .

Closing – 2007 Flood Damage . . .

Wakefield Road, Elma, WA
GREG GILBERT / SEATTLE TIMES

For Further Information . . .

Vickie Raines, *Chair*

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(*Member*, Governor's Chehalis Basin Work Group)

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Edna Fund, *Chair*

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(Flood Authority)

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Karen Valenzuela, *Vice-Chair*

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(*Member*, Governor's Chehalis Basin Work Group

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Jim Kramer, *Facilitator*

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Chehalis River Basin Flood Authority

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Chehalis River Basin Flood Authority

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scottb@sbgh-partners.com

Thank You . . .

Thank You!

Note:

This Presentation Is Posted To

“Chehalis River Basin Flood Authority” Website

at www.ezview.wa.gov.