

CLACKAMAS COUNTY BOARD OF COUNTY COMMISSIONERS

Policy Session Worksheet

Presentation Date: Oct. 10, 2017 **Approx. Start Time:** 10:30 AM **Approx. Length:** 60 min

Presentation Title: Flood Recovery & Risk Management Update

Department: County Administration and Disaster Management

Presenters: Laurel Butman, County Administration; Nancy Bush & Jay Wilson Disaster Management

Other Invitees: Members of the Sustainable Flood Recovery Work Group

WHAT ACTION ARE YOU REQUESTING FROM THE BOARD?

This is an informational policy session for the Board regarding updates on the status of several efforts toward flood risk management and flood recovery in Clackamas County.

EXECUTIVE SUMMARY:

In this briefing, staff will highlight several efforts currently underway to address flood recovery and flood risk management in Clackamas County. Please see Attachment A for the information which will be presented at this session. Attachment B lists past and current activities of the Flood Group.

FINANCIAL IMPLICATIONS (current year and ongoing): N/A

Is this item in your current budget? YES NO

What is the cost? N/A

What is the funding source? N/A

STRATEGIC PLAN ALIGNMENT:

These issues align with three of the Board's five Strategic Priorities:

- Build public trust through good government – by ensuring the public has reliable information about their risks and options
- Ensure safe, healthy and secure communities – by working to minimize flood risks for the community and for County infrastructure
- Honor, utilize, promote and invest in our natural resources – by addressing the need of the Sandy River for space for channel migration

LEGAL/POLICY REQUIREMENTS: N/A

PUBLIC/GOVERNMENTAL PARTICIPATION: See Attachments.

OPTIONS & RECOMMENDATIONS: N/A – informational only

ATTACHMENTS:

1. Attachment A: Community Resilience Presentation
2. Attachment B: Flood Recovery & Risk Management Activities, UPDATE 10/10/17

SUBMITTED BY:

Division Director/Head Approval _____

Department Director/Head Approval _____

County Administrator Approval _____ **LSB** _____



Attachment A

Community Resilience Upper Sandy River

Board of County Commissioners
Policy Session

October 10, 2017



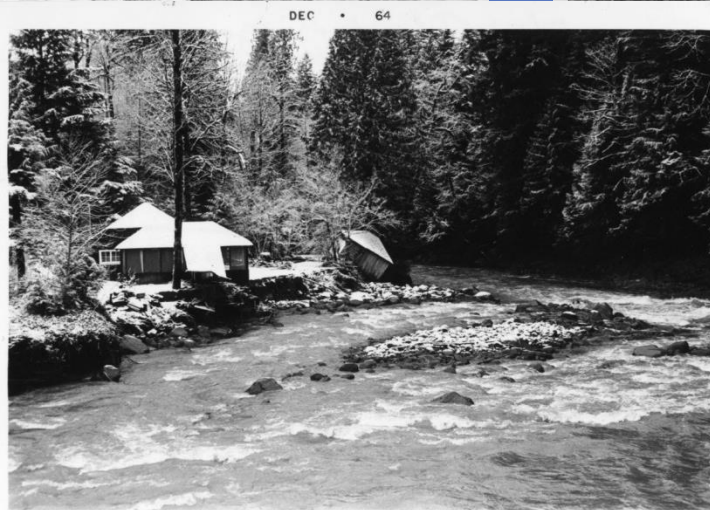
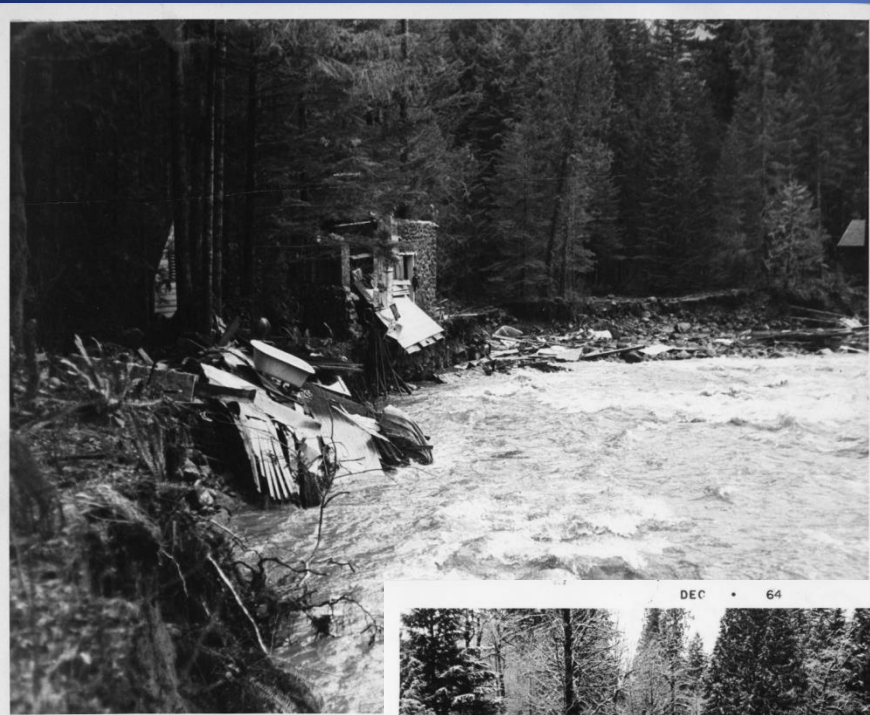
Photo: Oregonian

Outline and Purpose

- Historical Context – 1964 to Present
- Post - 2011 Flood Event Accomplishments
- Channel Migration Hazard – Refocus Efforts
- Challenges and Opportunities
 - FEMA Resilience Meeting Oct 30, 2017
 - US Army Corps Community Planning
 - Oregon Solutions
- Urban Flood Areas

Channel Migration Hazards

Upper Sandy River Basin – December 1964



Photos: Mt. Hood National Forest
US Forest Service

1964-1965 Floods

The flood volume on the Sandy was the greatest of record. The river gradient is very steep, and the river bottom soil is a gravely silt which offers little resistance to erosion. The result was an action on the valleys and lower slope that was glacier-like. Complete changes in appearance of the valley resulted in many places; for example, the north bank of the Sandy just upstream from Brightwood showed no indication of buildings, vegetation or topsoil where a group of 40 houses existed prior to the flood. These conditions were repeated to a lesser extent throughout the upper basin.

A total of 155 homes were completely destroyed in the Sandy Basin, with a great many more being damaged. Of these a majority were unoccupied summer homes, or loss of life would doubtless have been greater than the one reported.

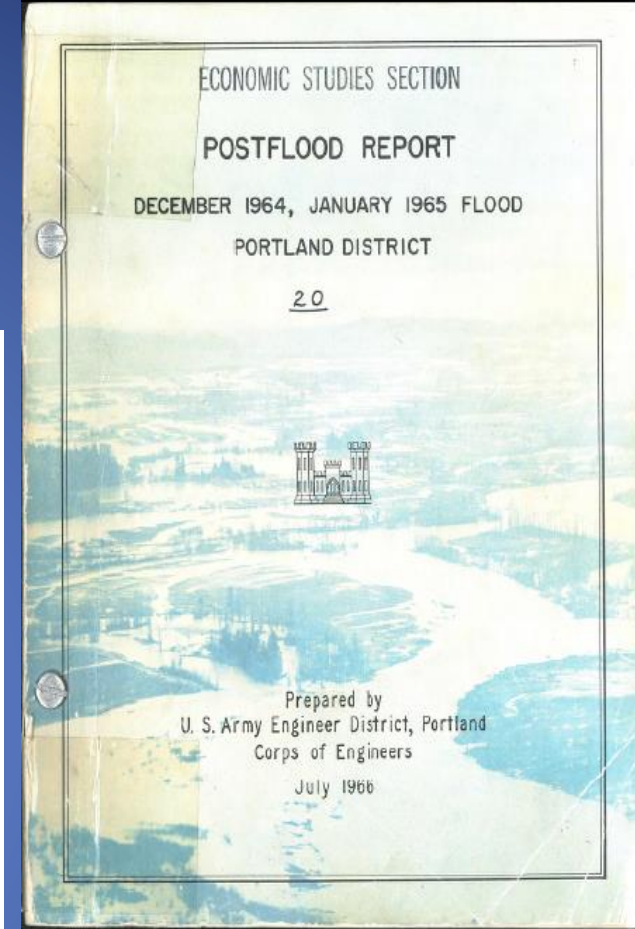
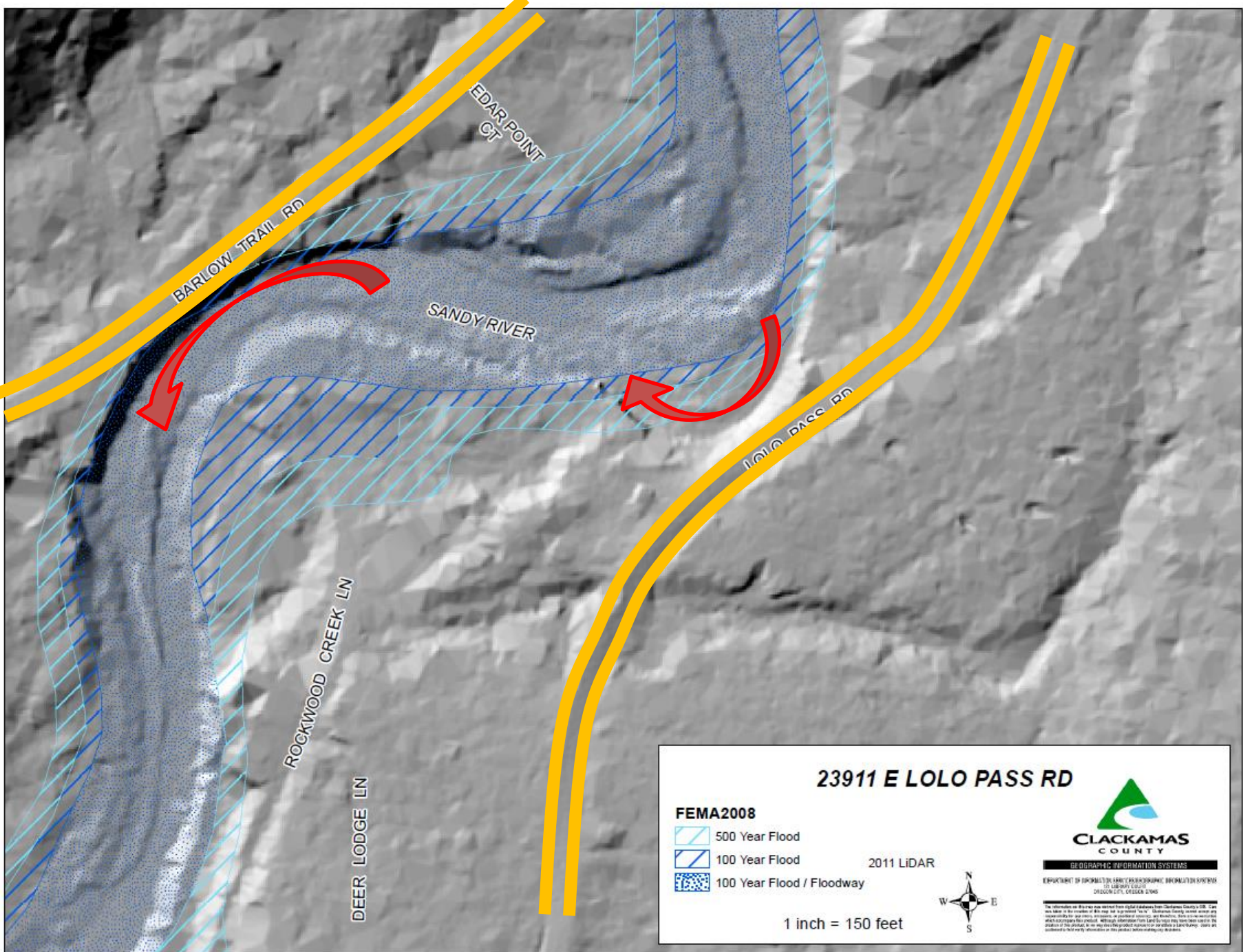







Photo: PGE

January 2011 - Lolo Pass Rd Washout Across from Autumn Lane



23911 E LOLO PASS RD

FEMA2008

-  500 Year Flood
-  100 Year Flood
-  100 Year Flood / Floodway

2011 LiDAR

1 inch = 150 feet



GEOGRAPHIC INFORMATION SYSTEMS
 DEPARTMENT OF INFORMATION SERVICES / CLACKAMAS COUNTY
 10000 NE MULTNOMAH ST., SUITE 2000 / CLACKAMAS, OR 97015

This information was derived from digital data from Clackamas County GIS. Clackamas County is not responsible for any errors, omissions, or inaccuracies in this information. This information is provided as a service to the public and is not intended to be used for any other purpose. Clackamas County is not responsible for any errors, omissions, or inaccuracies in this information. Clackamas County is not responsible for any errors, omissions, or inaccuracies in this information.



January 2011 - Lower Lolo Pass Road Area

Photo: Jay Wilson



June 2011 - Lower Lolo Pass Road Area

Photo: Jay Wilson



**Damages resulting from
January 16, 2011 flood,
Zig Zag Village, Upper
Sandy River**

Bank of sand

River bed of boulders

Photo: Oregonian

- River Bank is Softer than the River Bed
- Doesn't need to "Flood" to Cause Damage
- Historic protection (riprap) causes problems
- The Sandy River needs more room

Emerging Policy Issues

- Flood Recovery – Goals & Objectives
- County's Role on flood recovery
- Flood Risk Management Planning
 - Emphasis on FEMA Flood Insurance
 - Level of Protection - Public & Private Properties
 - County considerations for buyouts and future management as open space
 - Special Improvement District
 - Anticipate recovery ahead of time "*Precovery*"
- Visioning – Multi-decade transformation

Report Findings – Volcanic Landscape

Mount Hood—History and Hazards of Oregon's Most Recently Active Volcano

Mount Hood's last major eruption occurred in the 1790's not long before Lewis and Clark's expedition to the Pacific Northwest. In the mid-1800's, local residents reported minor explosive activity, but since that time the volcano has been quiet. Someday, however, Mount Hood will erupt again. What will those eruptions be like and how will they affect us? Scientists from the U.S. Geological Survey (USGS) are studying the volcano's past eruptive behavior to better anticipate and prepare for future eruptive activity.



Sandy River
Valley

is a
Layer Cake of

Volcanic
Mud Flows

Photo: Jay Wilson





Mountain Air – April 1965
Photo: James Arrigotti

Timberline Rim Area 1967



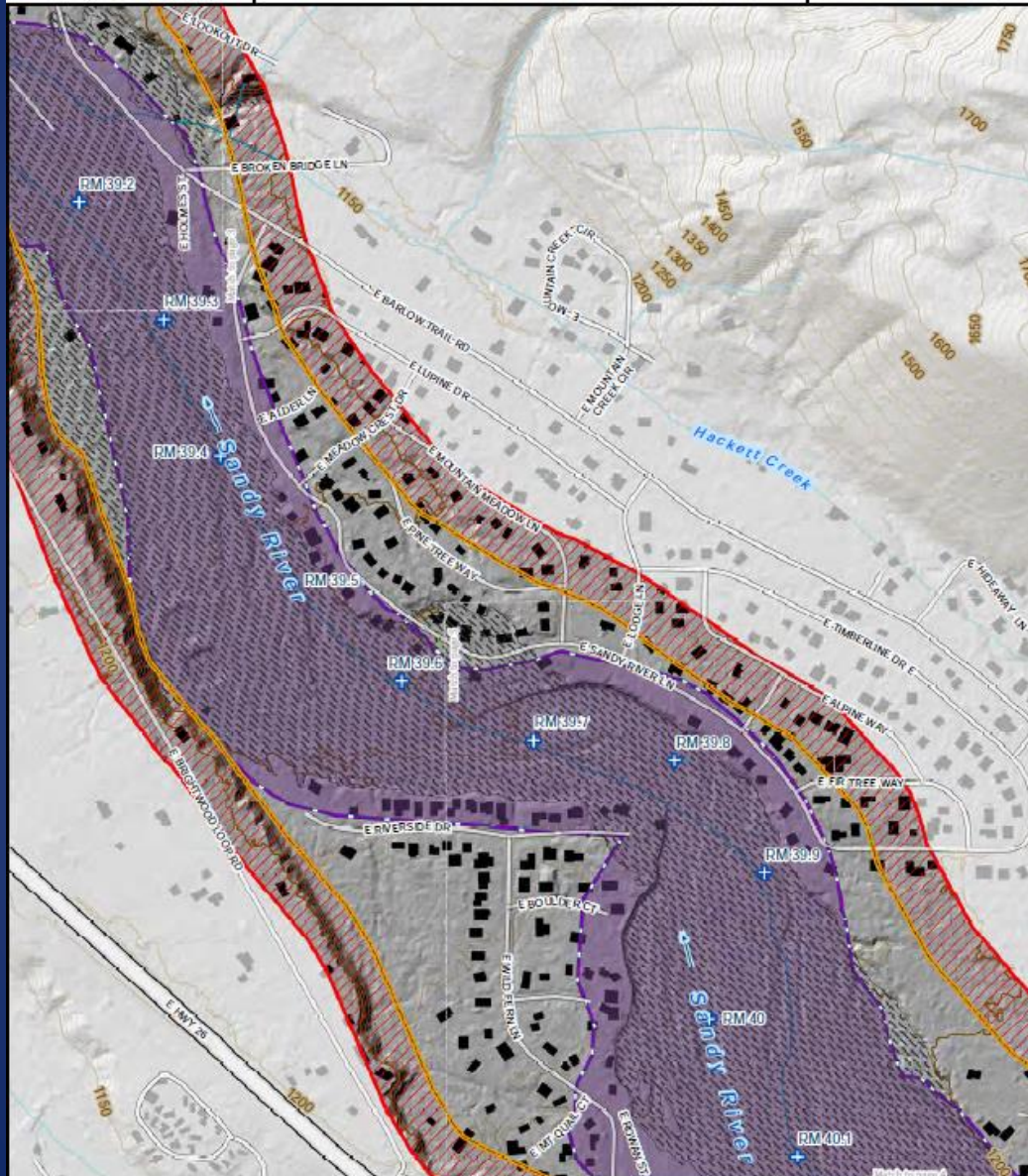
Timberline Rim 1972





Figure 23. Timberline Rim Channel Migration. This group of air photos shows the lateral and downstream migration of the large bend adjacent to the Timberline Rim community. Note the remnant channel traces showing the distance of migration from 2005 to 2008 to 2012. Note also the size of the bend relative to property plats. Data sources: University of Oregon Libraries, USDA NAIP.

Channel Migration Zone – Risk Map



Legend

- USGS River Miles
- Streams (USGS NHD 2010)
- Roads (Clackamas Co.)
- Channel Migration Zone (CMZ)
- Emergency Protection Action Line (EPAL)
- HMZ + 100ft Buffer
- Historic Migration Zone (HMZ)
- Actively Eroding Trends
- Avulsion Hazard Zone (AHZ)
- Minimum CMZ Management Zone
- Area within 100 ft buffer
- FEMA 100 yr Flood Zone

Source: Oregon Department of Geology and Mineral Industries (DOGAMI). LIDAR data collected in:

2011 (upstream of Zigzag River) and 2012 (downstream of Zigzag River). CMZ, HMZ, AHZ, and EPAL delineated by Natural Systems Design, 2014. August 2011 FEMA FIRM Flood Zones obtained from DOGAMI

100' Buffer CMZ Properties

- **416 Residential Properties**
- Total FMValue = Struct & Land \$104,000,000
- Total Assessed Value = \$84,000,000
- Taxes Collected = \$1,200,000
- Average price = \$250,000

- 229 properties below \$200,000
- 70 properties below \$100,000

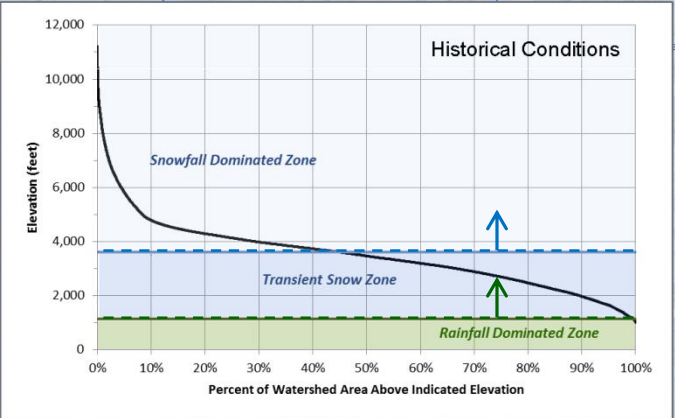
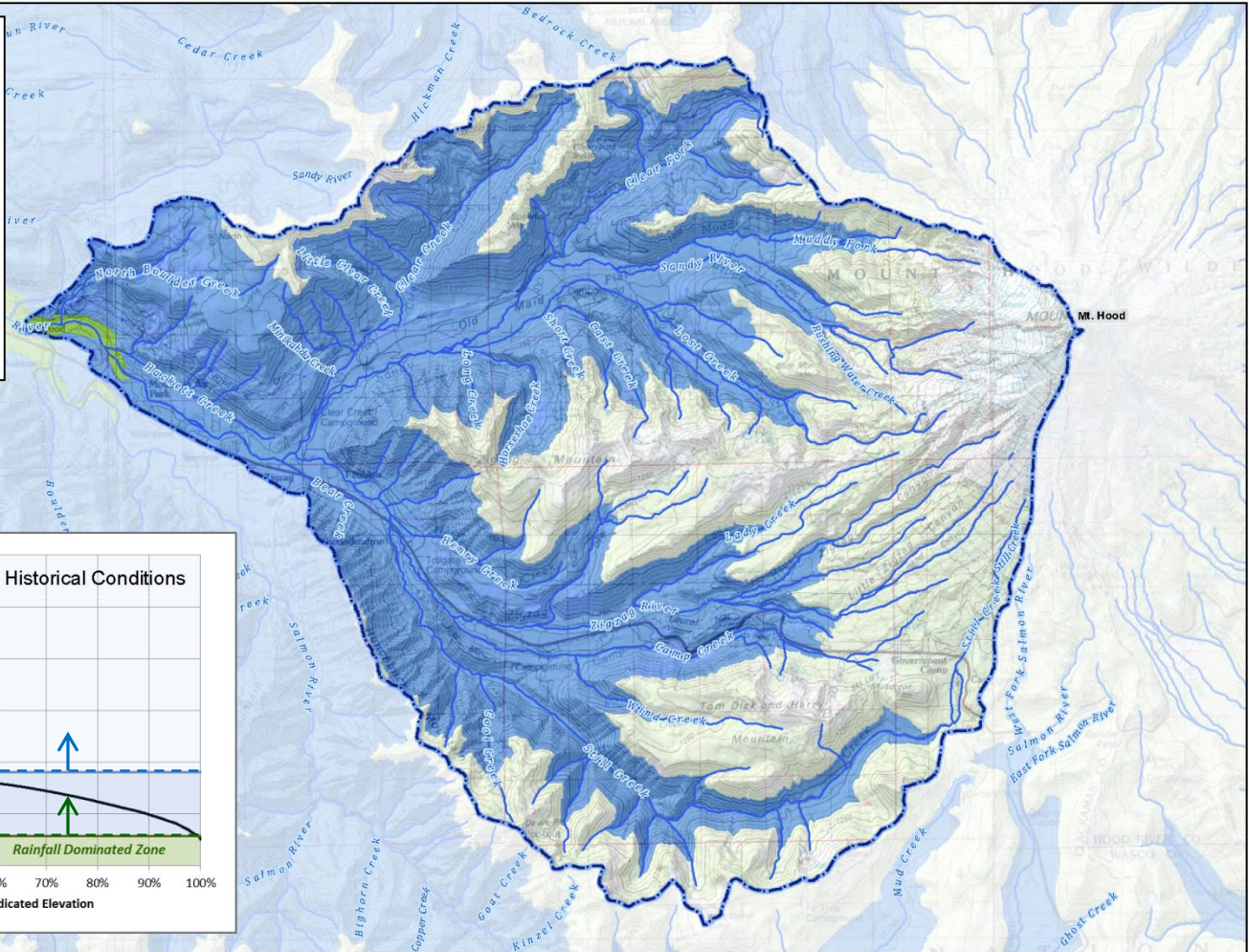
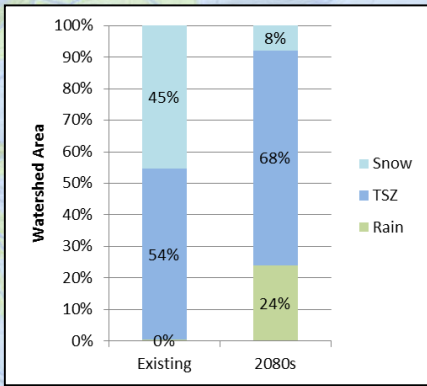
Got Flood Insurance?



Timberline Rim

Between river miles 41.5 and 42

- 14 flood-affected properties, with a total FMV of \$3.7 million
- 95 remaining unaffected properties at risk with a total Fair Market Value of \$19.7 million
- 48 flood insurance policies as of July 2011



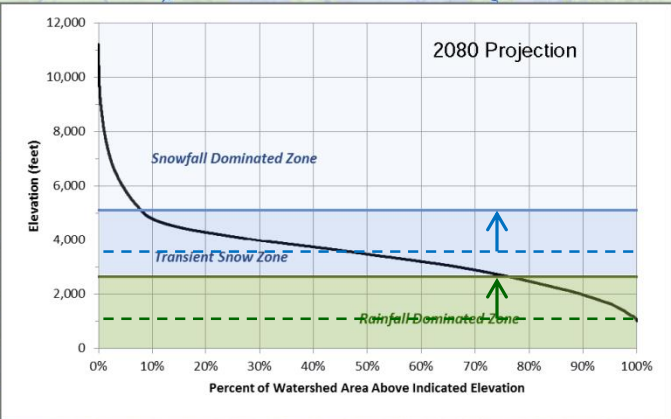
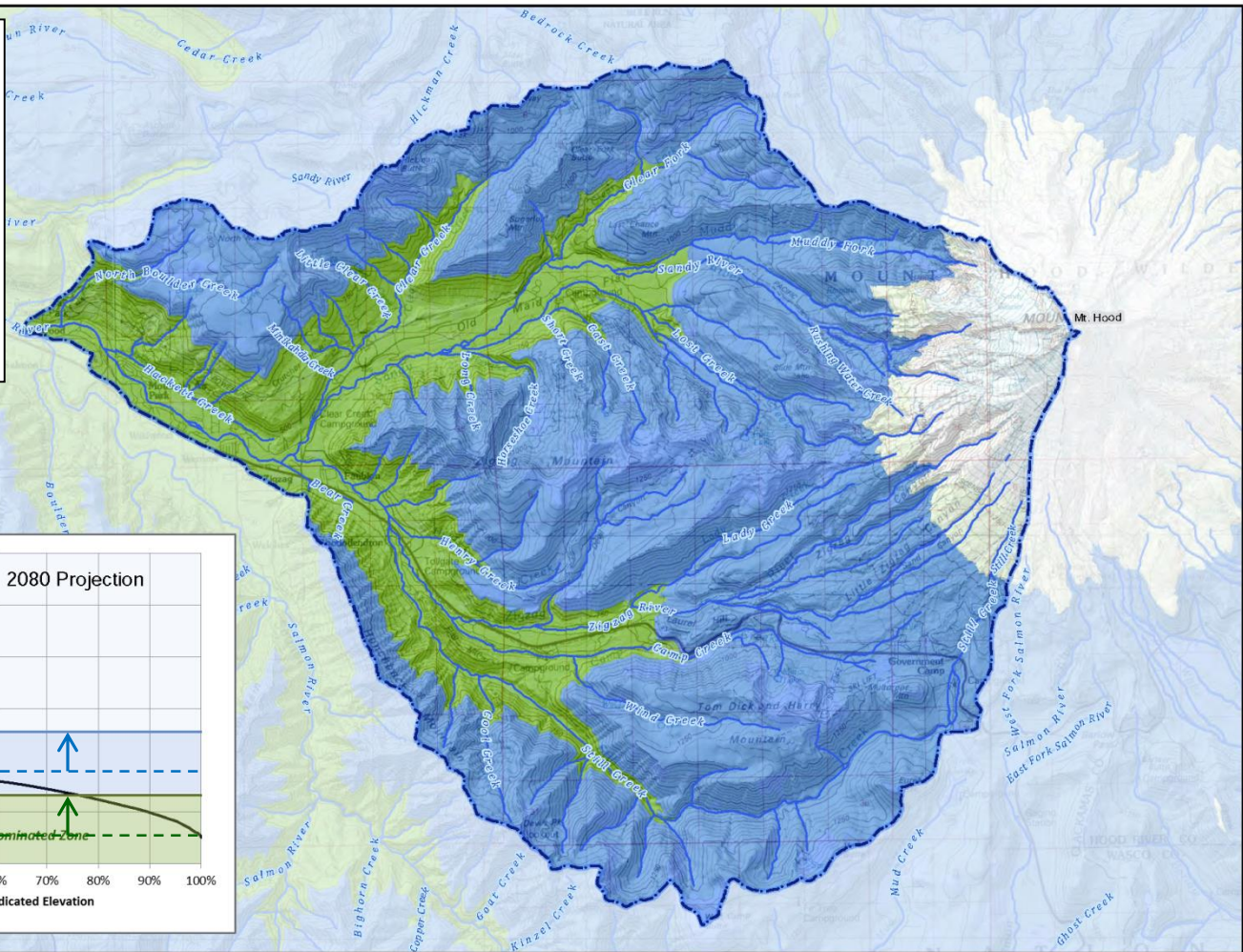
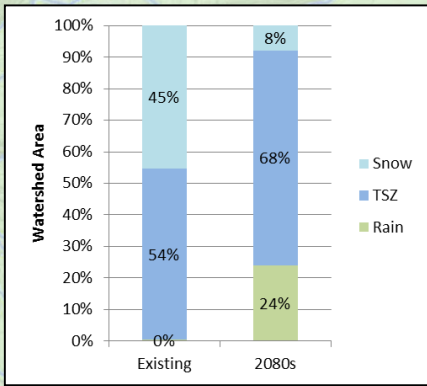
Upper Sandy River - Flood and Erosion Hazard Mitigation Evaluation Project
Hydrologic Zones of the Upper Sandy River Watershed

Basemap from USGS Mt. Hood (1983) and Oregon City (1982) Quadrangles.



Lambert conformal conic projection, NAD 1983
 State Plane Coordinate System (OR North Zone)





Upper Sandy River - Flood and Erosion Hazard Mitigation Evaluation Project
Hydrologic Zones of the Upper Sandy River Watershed

Basemap from USGS Mt. Hood (1983) and Oregon City (1982) Quadrangles.



Lambert conformal conic projection, NAD 1983
 State Plane Coordinate System (OR North Zone)



FEMA Resilience Meeting

- Challenges = Opportunities
- Planning for Future Flood Recovery
- Visioning Long-Term Growth



Jay Wilson
Hazard Resilience Coordinator
Clackamas County Emergency Management



- Silver Jackets – Federal/State Partners
 - Flood Risk Management Projects
- Community Planning Grant Project
 - Flood Risk Management Plan
 - Community Planner Assistance
- Emphasis on Community Involvement





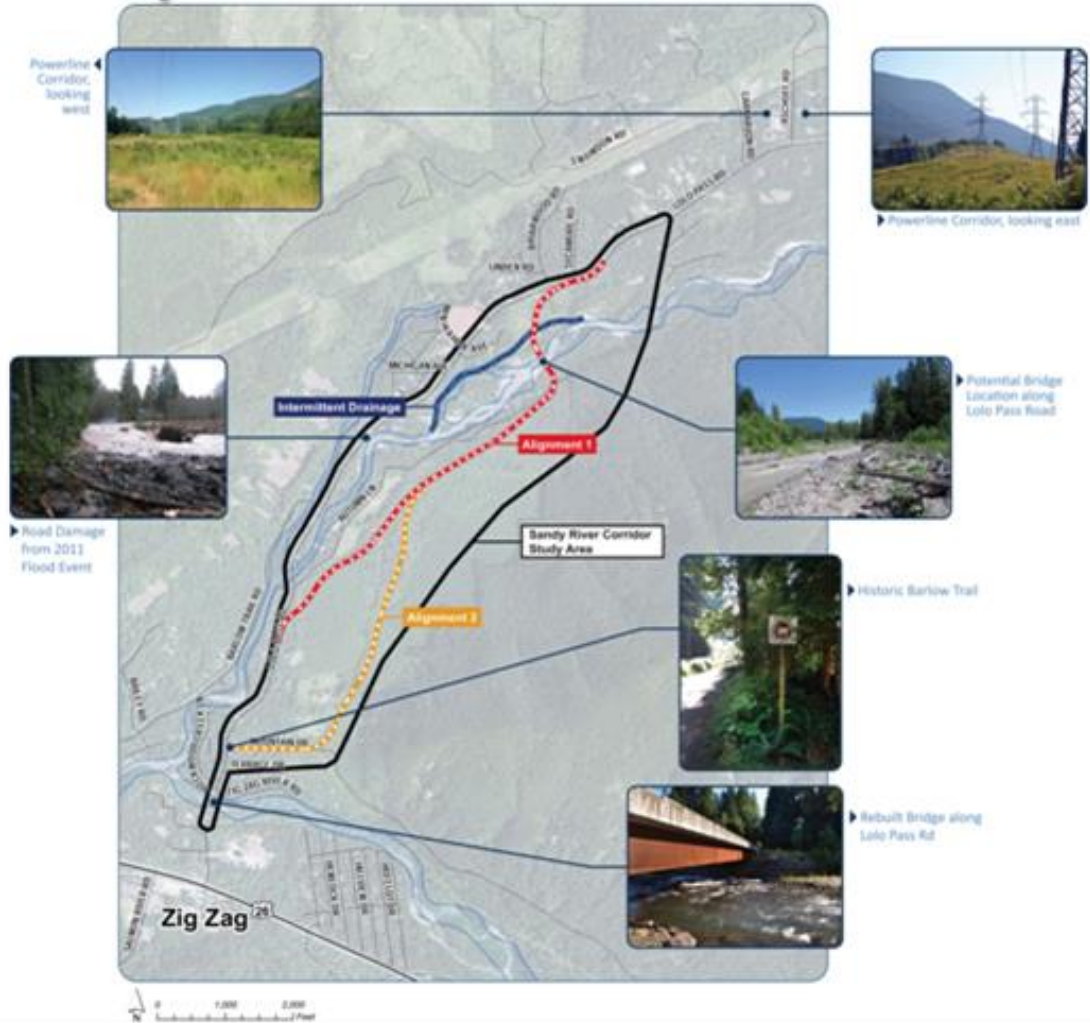
Solving community problems in a new way.



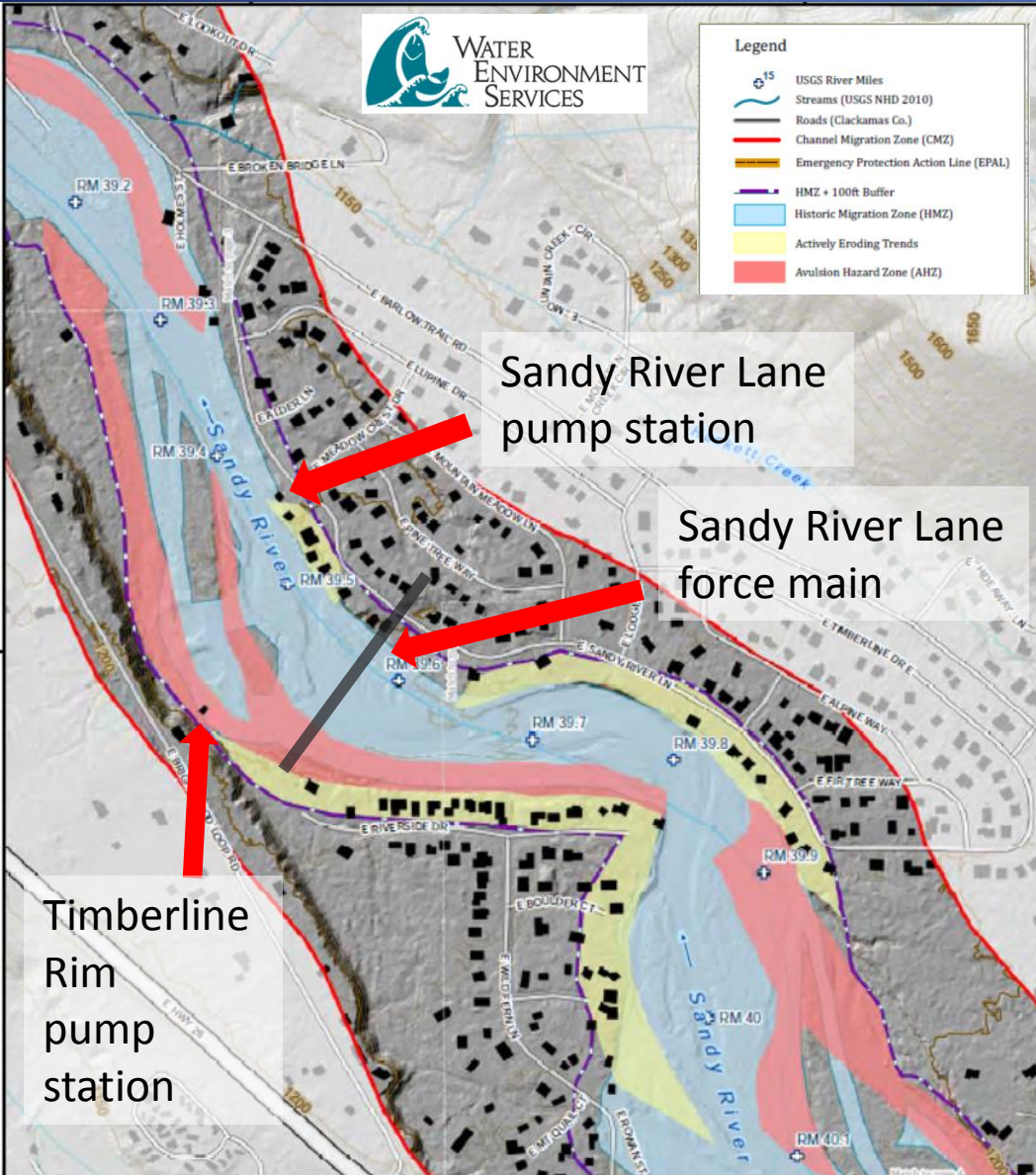
- Convening Authority
 - Federal, State, Conservancies, and NGO
- Conflict Resolution
- Resources and Funding Options
- Long-range Policy and Program Alignment
- Visioning

Lolo Pass Road Alternative Study

Sandy River Corridor



Hoodland Service Area Wastewater System



Why WES Completed a Master Plan

- Individual project needs had been identified, including potential outfall improvements, but never as part of a comprehensive Master Plan
- To inform new project investment decisions to **meet new challenges** from the perspective of the entire system
- **Damage to conveyance system and treatment plant outfall** occurred during Sandy River flood events in 1996 and 2011
- Timberline Rim pump station, Sandy River Lane pump station, and the interconnecting pipe beneath the river are **vulnerable to channel migration and erosion**
- Aging treatment plant: over 30 years old and potentially **in need of upgrades**
- Environmental, public health, and community **impacts from potential loss of service are significant**

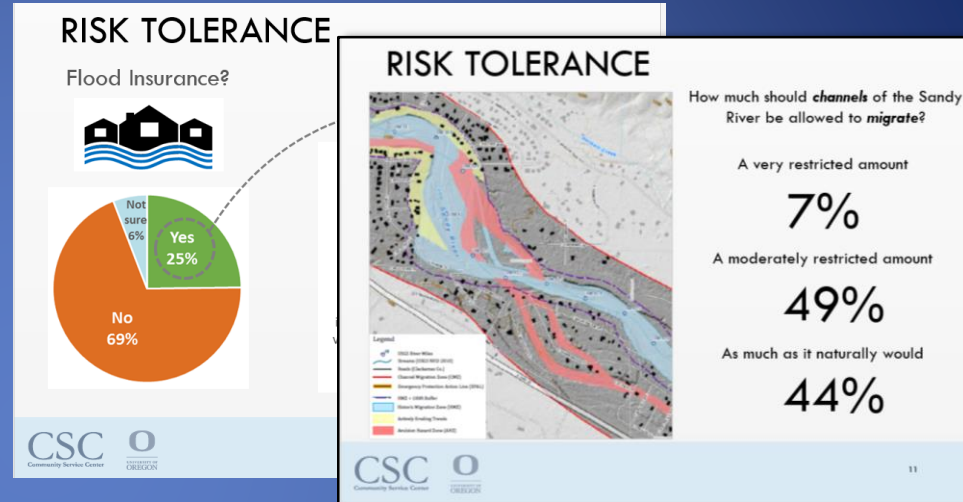


Public Awareness and Involvement 2017 Flood of Information



September 30, 2017
Sandy Fire Annex

Photos: Todd Logan
Clackamas County



Urban Flood Risk

- 2009 and 2015 Federal Disasters
- Built-out Downstream neighborhoods
- Heavily Impacted Urban Creeks
- Repetitive Flood Loss Properties
- Surface Water Management
- NFIP Reform and Flood Insurance Uncertainty
- Community Rating System (CRS)
- Natural Hazard Mitigation Plan Update



SE Rusk Rd

Mt Scott Creek

12929 Rusk

13001 Rusk

13012 Rusk

12992 Rusk

12972 Rusk

12942 Rusk

Lake Road
Courtyard Apartments

Mt Scott Creek

SE Lake Rd



Dec 7, 2015 Flood Event
Hazard Mitigation Assistance Overview
Clackamas County/Milwaukie Jurisdictions

Western County Flood of Information Event

- 2nd Annual FOI at Milwaukie Center
- November 11, 2017 9am to 12pm
- Interdepartmental Collaboration
- Partnerships with Watershed Councils
- The Wetlands Conservancy



Thank You

Challenges = Opportunities



Jay Wilson
Hazard Resilience Coordinator
Clackamas County Emergency Management

Attachment B

Flood Recovery & Risk Management Activities, UPDATE 10/10/17

Highlighted items are areas of current focus.

Flood Recovery Policy Activities	Date(s)	Status
Oregon Solutions potential project	2017-18 begin	Assessment complete
Flood Risk Management Plan (Sandy)	2017-2019	USACE Silver Jackets planner
Flood Risk Management (General)	Current	Buyout app. for one home
FEMA Resilience Meeting	10/30/17	Commissioners invited
Channel Migration Zoning	2018-2019	In Planning work plan
Upper Sandy River Erosion Study	2014-2015	Complete
Flood Warning System	2013-2014	River gauges installed
NFIP (National Flood Insurance Program)	Date(s)	Status
Community Rating System Review	2016	Downgraded to 10
Water Environment Services		
Hoodland Master Plan	2016	Complete
Sandy River Basin Watershed Council		
CLT Side Channel Restoration	2016	Complete
Community Playbook	2015	Complete
Outreach		
Community Flood Risk Mgmt. Committee	2014 (established)	RECONVENING meetings
Board of County Commissioners	2011-present	1-2 Policy Sessions/Year
Flood of Information	2012-present	Annual event 2 in 2016 & 2017
USACE Public Involvement Pilot Project	Feb 2014-Feb 2015	Complete
50th Anniversary, 1964 Christmas Flood	2014	Complete
Hazardous Waste Collection Event	June 2014	Complete
Transportation & Maintenance		
Lolo Pass Rd Alternatives Study	2014 – 2016	Complete
Barlow Trail Bank Project	2013 – 2016	Complete

Online resources the County provides:

www.clackamas.us/emergency/flooding.html

www.clackamas.us/planning/flood.html