



**Hood River**  
WATERSHED GROUP

# Hood River Watershed Group

*"...to sustain & improve the  
Hood River Watershed through  
education, cooperation, & stewardship"*

## FEBRUARY 25, 2020 MEETING MINUTES

### Watershed Group Members Present

Chuck Gehling	Cindy Thieman	Alix Danielsen	Heather Hendrixson	Megan Saunders
Greg Short	Nate Ulrich	Alexander Ross	Gary Asbridge	Rick Ragan
Dottie Nelson	Kyle Haines	Sue Kelso-Haines	Ayn Shlisky	Steve Hunt
Dick Iverson	Jon Nigbor	Holly Coccoli	Tom Osborne	Stuart Blois
Monica Cox	Edwina King	Tosha King	Pollyanna Lind	Karen Parkkonen
Cindy Collins	Sandi Rousseau	Tom Rousseau	Scott Sublette	Lee Fairchild
Diana Burman	Loretta Burman	Sam Doak	Brian Nakamura	Bruce Barnett
Hugh McMahon	Linda McMahon	Susan Hess	Jurgen Hess	Jennifer Euwer
Jeff Snyder	Tessa Edelen	Jason Keller	Dale Hill	Dorene Cunningham
Carol Greene	Steve Castagnoli	David Michalek	Larry Martin	Chip Andrus
Celilo Brun	Susan Brun	Les Perkins	Hans Berge	Sarah Martin
Kevin Liburdy	Kathryn Arendt			

### Welcome and Introductions

At 6:04pm, Chuck Gehling welcomed everyone to the February meeting and started a round of introductions. There were 57 people in attendance.

### Review and Approval of Last Meeting Minutes

Chuck asked if there were any corrections to the January minutes. No changes were noted, and the group approved the minutes.

### Monthly Informational Presentation

Dick Iverson, Senior Scientist Emeritus at the U.S. Geological Survey (USGS) Cascades Volcano Observatory, presented on *Debris flows from Mount Hood: past, present and future*. The presentation described large, prehistoric debris flows from Mount Hood as well as smaller, storm-triggered debris flows that have occurred during the past 40 years, emphasizing events within the Hood River Watershed.

Dick began with a video of a debris flow from Semeru Volcano in Indonesia, which he described as comparable in size to the 1980 Polallie Creek debris flow from Mt. Hood. The Polallie flow represents a typical small debris flow. Debris flows from Cascade volcanoes vary greatly in size, spanning seven orders of magnitude. Small events occur annually and may contain as little as 1,000 cubic meters of material. The largest events, in the range of 3-4 billion cubic meters, occur rarely and accompanying volcanic activity provides some warning.

Dick presented the DOGAMI Hood River Valley geologic map from 2012, which depicted the two major debris deposits in the valley. The Hood River lahar is estimated to be approximately 100,000 years old and is most prominent near Parkdale and down the Middle Fork, but also crossed to other side of the Columbia River and probably dammed the river at the time. Evidence of the Oak Grove lahar is found only in lower part of Valley and that lahar is thought to be older than the Hood River lahar (exact age not known). There have been much more recent lahars on other side of Mount Hood coming down the Sandy, including one in the 1780s that formed a deposit observed by Lewis and Clark and likely gave the river its name.

Moving on to the present geologic history, Dick reviewed a list of flows that occurred on Mt. Hood since 1980, highlighted those that took place in tributaries to the Hood River: Polallie, Newton, Clark, and Eliot. The great majority of these debris flows occur in the fall. The wet season for debris high on Mt. Hood coincides with the end of the snowmelt season, resulting in increasingly wet soil. When this pre-wetted condition coincides with a big rainstorm or Pineapple Express, debris flows are commonly triggered. There is also a pattern in source area elevations, with most of the debris flows originating around 2,000m/6,000 feet.

The Polallie Creek Flow took place on the evening of Christmas Day in 1980 and resulted in the only known death from a Mt. Hood debris flow. Events of this size (~100,000 cubic meters) are rather common on Mt. Hood. The debris flow originated from the head of Polallie Creek Canyon and picked up a huge amount of debris as it made its way down the steep canyon before it intersected with the East Fork. A temporary debris dam backed up a wall of water, which when it released took out a snowplow down river. The driver survived and was able to provide a first-hand account of the event.

The Muddy Fork Sandy River debris flow took place in June of 2002. It was an atypical event in that it happened in June and was triggered by a thunderstorm. The source material was largely rock, and the flow obliterated a section of the Timberline Trail.

Seven debris flows took place on Mt. Hood on November 6-7 in 2006. All volcanoes in the Cascades spanning the area from Mount Jefferson to Mount Rainier had multiple debris flows due to this storm. The seven on Mt. Hood took place on the Sandy River, Ladd Creek, Eliot Creek, Newton Creek, Clark Creek, the White River, and the Salmon River. All flows originated close to 6,000 ft. elevation. The Timberline weather station showed a total cumulative precipitation during the storm of 12.85 inches and a cumulative snowmelt of 12 inches. The combination of snow melt and rain triggered the flows. Right after the event it started snowing heavily, making it difficult to assess the flows' aftermath until the next spring.

The White River and Newton Creek flows cutoff Highway 35. The Eliot debris flow, the largest and most impactful of the seven, originated near the terminus of the Eliot glacier. There was probably considerable stream flow coming off the glacier, which undermined the steep slopes on the moraines below the glacier terminus and triggered two landslides that totaled ~100 million cubic meters. These landslide scars can be seen very clearly in photos taken during the summer after the debris flow and are still visible today. The flow was all erosional until it reached the broad depositional fan near Laurance Lake Road. The flow was then constricted as it progressed through the narrow canyon adjacent to the Parkdale lava flow. It then left big boulder levees like the one near Red Hill Bridge as it exited the canyon. As it joined with the West Fork Hood River, there was enough water in the river that the debris flow diluted to a "hyperconcentrated flow", which proceeded downstream and formed the large sand spit in the Columbia River that persists today

Dick then described ways to assess hazards of future debris flows, including using the geologic record of past behaviors of volcanoes, using analogies from similar volcanoes elsewhere, developing and using mathematical models, and performing experiments. Dick presented a hazard map of Mt. Hood that is based primarily on past behavior. It shows that the areas high on the slopes and right around the mountain have a diversity of hazards. As you move down the slopes/valleys, the hazards are mainly due to lahars. Big lahars down the Hood River Valley haven't happened within the last 100,000 years because of the current shape of the volcano. There are lots of young features on the mountain that aren't very susceptible to collapse.

Dick described some analogous events at other Cascades volcanoes. The Mt. Adams Klickitat debris avalanche took place on October 20, 1997. The flow originated at 11,000 ft. at the Castle feature and consisted of 3 million cubic meters of rock debris and entrained glacier ice. Mt. Adams has a larger risk than Mt. Hood because volcanic gases have been eating away at the rock, creating weak and relatively unstable rock. The flat land around Trout Lake is from the Trout Lake lahar 6,000 years ago.

The Mount Meagar debris flow in British Columbia that took place on August 6, 2010 is a very useful reference for assessing hazards. There was no triggering earthquake or storm; the ground just gave way, resulting in a 50 million cubic meter flow containing lots of weak, hydrothermally altered rock. The source area spans roughly 2,300 vertical feet, similar to the height of the Eliot glacier headwall. This flow is useful for testing models (D-Claw simulations) because it is the best modern analog for events possible at many Cascade volcanoes. The modeling shows the path and speed of the flow and demonstrates how the fast-moving debris shot 270 meters up a canyon wall.

Dick also explained how large-scale experiments conducted at the USGS debris flow flume in Oregon inform our understanding of debris-flow behavior. The flume is built at a large scale because the behavior of debris-flow mixtures is very scale dependent. The large scale allows for the right physics. The data from a series of experiments demonstrate that liquefaction happens in debris flows (liquefied core with gravel rich margins). One pair of experiments compared a debris flow traveling along a bare concrete bed versus a wet sediment bed. As the debris flow overruns the wet sediment it liquefies that material too, drastically magnifying the speed and mass of the flow.

Mt. Rainier is considered the most hazardous Cascades volcano for debris flows. USGS has simulated hypothetical events like a historical 260-million cubic meter lahar that reached the Puget Sound. Simulated Mt. Rainier debris flows originate from the Sunset and Tahoma Amphitheaters. The simulation from the Sunset source area shows that at an hour in, the town of Orting would be inundated (the town has evacuation drills and a warning system in place). The simulation from the Tahoma source area shows that the Nisqually entrance to Rainier would be hit in 10 minutes and the Alder Lake Reservoir would be hit in 50 minutes. The dam at the reservoir might not withstand overtopping caused by the debris flow.

The February 5-9, 1996 “great flood” produced very little debris flow activity on Mt. Hood, probably because there was so much snow on the mountain that it mainly absorbed the rain. Dick showed the famous Dodson fan picture of the Royce house that was inundated by the flood. Dick’s concluding remark was that large debris flows pose less hazard on Mt. Hood than at some of the other Cascade volcanoes, including Mt. Adams and Mount Rainier.

After Dick’s presentation, Kyle Haines asked about the vulnerability of the Eagle Creek fire areas. Dick noted that since the fire there hasn’t been a big Pineapple Express storm that would trigger any flows. Nevertheless, these areas remain vulnerable to landslides and flows.

A question was asked about warning systems. Dick said that there are very few cases where actual systems are installed, but the Weather Service will issue a debris flow watch, particularly in vulnerable areas like Highway 84 (flashing light system).

Greg Short asked which mountain would be most likely to do damage to the Hood River waterfront. Dick answered that, based on geological knowledge of behavior during the past 10,000 years, a large debris flow from Mt. Adams and down the White Salmon would be more likely to damage the waterfront than a flow from Mt. Hood.

Karen Parkonnen asked where the material came from during the Dodson flooding. Dick noted that there is an alcove that has eroded over time and an abundance of weak-looking rock is accumulating. The Oregon side of the Gorge is on average much steeper because of the dip of rocks from the north towards the south. Karen also asked if Dick had any comment on Wind Mountain and Shellrock Mountain. Dick had no comment.

A final question was asked about the coverage of the Hood River Valley lahar. Dick described the general boundaries around the Parkdale area and down the Middle Fork out to the Columbia River.

## **Celilo Brun FFA Presentation**

Celilo Brun is the Future Farmers of America Vice President of the local Hood River Chapter and a Senior at HRVHS. Celilo won the sectional level competition for the Advanced Public Speaking Competition and is going to the state tournament. Celilo practiced her presentation, *Allowing Agriculture and Fish to Coexist: A Case Study*, in front of the group. The presentation was well received.

## **Old Business**

### **Officer & Operations Committee Elections – Second Consensus**

Chuck explained that the group provided first consensus approval at the January meeting for the slate of candidates for the Chair and Vice Chair and three Operations Committee positions. Chuck Gehling was elected as Chair. John Buckley was elected as Vice Chair. Committee positions for Phil Simpson, Kate Conley, and Craig DeHart were renewed. *The group provided second consensus approval for this slate of candidates.*

### **Feedback to DEQ on process/stakeholder engagement opportunity for developing new 303(d) listings**

Delayed due to time constraints.

## **New Business**

### **OWEB Technical Assistance Grant – Neal Creek Phase II**

Alix gave an update on the current status of Neal Creek Phase I, which includes two sites – the Myer/Vogt site and the Coleman site. The OWEB TA grant for Phase I design that was submitted in October has been ranked well. We should know whether the project falls above the funding line in March. If awarded, design would be complete in early summer and the Watershed Group would apply for an implementation grant in October for project implementation in 2021. In the meantime, Alix explained that she has been talking with landowners interested in restoration work just below and above of the Thomsen Road bridge. Based on landowner willingness, the Watershed Group would like to pursue a restoration project along this stretch of Neal Creek as Phase II. With consensus approval, Alix would plan to submit an OWEB TA grant for this project design in April. Alix noted that 25% match has been pledged from CTWS. There were questions about the impact of the Thomsen Road Bridge. Cindy noted that the bridge constraints are accommodated for in the design, and that it would be worth finding out from the County where the bridge replacement currently falls on the upgrade list. *The group provided first consensus approval to submit an OWEB Technical Assistance grant for Neal Creek Phase II design.*

### **Eastside Lateral Project: OWRD Water Project Grant and Watershed Protection and Flood Prevention Program (PL 83-566) Funding**

Cindy provided an update on the funding plan for the implementation of the Eastside Lateral project, which includes replacing six miles of open canal with high-density polyethylene pipe, installing pressure reducing valves, and installing new connections for 10 sub-laterals and 51 individual turnouts. The design for the project is complete and funding from CTWS (\$410,000) and NRCS (\$1.3 million) has been secured for Phase I implementation this fall/winter. The OWEB grant submitted in the fall for \$600,000 was recommended for funding but 6th out of 6 total recommended projects. It's unclear whether the project will fall within the funding line. The Watershed Group will help EFID pursue additional funding for Phase II implementation by submitting applications for the OWRD Watershed Project Grant and the PL 83-566 Watershed Protection and Flood Prevention Program funding.

Brian Nakamura asked about the total project cost, which Cindy estimates at ~\$8 million. There is currently approximately \$1.5 million secured and \$600,000 (from OWEB) pending. Celilo Brun asked about project goals and details, which Cindy described. Susan Hess asked why these piping projects are happening when the glacier that feeds the East Fork will be gone in 50 years. Cindy says that it will be even more important that these pipelines will conserve water. Dick Iverson noted that there is a considerable water resource beyond what's tied up in glaciers. Groundwater is likely an extensive resource, as evidenced by local spring flows. Les

Perkins noted that we can't stop moving forward with conservation. Heather Hendrixson asked if the PL 83-566 funding was a loan program? Cindy explained that it is federal grant funding that is funding extensive infrastructure upgrades around the state.

Consensus for these funding opportunities is not needed because EFID will be the applicant and Watershed Group members previously approved this project.

### **Reports and Announcements**

#### **Coordinator Report:**

Cindy provided brief updates on the Sense of Place presentation and the progress of the Strategic Action Plan. This Friday the Action Plan group will be reviewing and finalizing the high priority project list.

#### **Project Manager Report:**

Alix gave a brief update on current projects, including the progress of the DID Distribution Pipeline Project, planning for the West Fork at Red Hill project, the SAP financial plan, and an upcoming meeting with the Communications & Outreach Committee to discuss the website and Communications and Outreach Strategy.

#### **Member Announcements:**

Heather Hendrixson announced the upcoming Pollinator Workshop on March 3<sup>rd</sup> from 9 am to noon at the Hood River Library. The free and open-to-all workshop will feature presentations from the Xerces Society and NRCS and will include pollinator information and NRCS funding opportunities.

Tessa Edelen from DEQ announced that the DEQ 319 grant funding round will open next week.

Les Perkins announced that the Kingsley Reservoir Project will proceed in late May/early June and conclude in October.

Jurgen Hess announced that he will be giving a program about the Eagle Creek Fire to the PCTA this Saturday and another one in Portland at a later date.

Greg Short announced that the Rocky Mountain Elk Foundation annual banquet will be April 25<sup>th</sup> at the fairground. The event sells out so get tickets early.

### **Summary of Consensus Items and Establishment of Next Meeting**

#### **Items that Received First Consensus:**

Approval to submit an OWEB Technical Assistance grant for Neal Creek Phase II design.

#### **Items that Received Second Consensus:**

Chuck Gehling was elected as Chair. John Buckley was elected as Vice Chair. Committee positions for Phil Simpson, Kate Conley, and Craig DeHart were renewed.

The next Hood River Watershed Group meeting will be March 31st, 2020 at Dog River Coffee Co.

### **Adjournment**

Chuck thanked the group for attending and adjourned the meeting at 8:09 pm.

Reported by Alix Danielsen.