



## **Steering Committee Meeting**

### **FINAL MEETING SUMMARY**

Monday, August 17, 2020 1 pm – 3:00 pm

Zoom videoconference

(AUGUST 2020 ONLY) Meeting ID: 827 4934 5841

More info: [tpokorny@co.jefferson.wa.us](mailto:tpokorny@co.jefferson.wa.us) or 360-379-4498

#### **Welcome/Introductions**

Tami P., Mike Ericsson, Wendy Largent, Jill Silver, Julie Ann Koehlinger, Bridget Kaminski Richardson, Roger Oaks, Jean Fletcher, John Soden, Tom Anderson, Jessie Huggins, Mike Rohde, John Davis, Kim Clark, Pat Crain, Tim Abbe, Henry Haro

#### **Agenda Changes/Additions**

No additions or changes to the agenda. Jill noted that she has an update on the map(s).

#### **Approval of July 20, 2020 Draft Meeting Summary**

Meeting summary will be shared to all participants soon. Approval to be completed at a later time.

#### **Announcements/Comments**

None

#### **Old Business**

None

#### **New Business**

##### **Project background data review and data gaps progress**

Aerial imagery will be incorporated as it becomes available. Now working on cataloging studies, and these will be uploaded to the County's google drive folder for the project.

##### **Field data collection plan review, solicit for additional locations from Steering Committee**

Field work will take place over 3+ days in mid-to-late Sept. This will include floating the river over two-three days. Some of the work will include pebble counts, documenting channel and floodplain conditions, characterizing adjacent forest stands and mapping, develop a relative elevation model for channel and floodplain, marking side channel confluences, measuring bank heights / erosion sources, recording geologic controls (bedrock outcrops, etc.), mapping pool/riffle/logjam frequency, mapping



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infrastructure/utilities/buildings/etc., documenting locations of road interactions with channel, noting locations of potential restoration opportunities, noting locations with good habitat to protect,

Mike showed maps of the project reach with some noted locations of interest (e.g. Brandeberry lots, Fletcher Ranch, Federal Highways road work, etc).

Jill noted a logjam that has been building over the last decade on the north side of the channel across from Brandeberry lots. It is deflecting flow and impacting properties on the south side.

Jean recommended floating three days (vs two) and meeting landowners along the way.

Tom noted the ~25 yd road washout at Brandeberry (likely caused by recent clear-cut timber harvest)

Jill noted that timber harvest in the late 80s resulted in debris flows off of Huelsdonk ridge. 'Iron Maiden' is an example of one of the debris flows. Since then steep slope logging is no longer taking place (since the 90s).

### **River processes 101 talk**

#### **Log jam observations**

Tim Abbe and Mike Ericsson shared part 1 of a presentation about natural river processes (Fluvial Geomorphology Introduction Part 1). Sediment, flow, geology, and gradient/slope influences were all discussed (e.g. Lane's balance). Main takeaways include:

- Rivers are agents of erosion and transportation
- Rivers are constantly adjusting to changes in flow, sediment, and other debris loads
- A river channel can move or migrate within its channel migration zone both vertically (up and down) and horizontally (across valley bottom)
- Very generally speaking, river systems begin with headwaters in uplands where much erosion takes place; then through upland valley and then floodplain valley where erosion and deposition can take place (this is a very sensitive area in the river basin); then finally leading to the downstream large river part of the basin where more deposition of sediments take place.
- There are many independent river basin variables (Geology, Climate, and Land Use) that impact independent channel variables (Sediment Supply, Transport Capacity, and Vegetation), that ultimately impact dependent channel morphology (e.g. width, depth, sinuosity, slope, etc.).
- Channel shape and pattern can give clues to a stream's sediment and water/flow regime.
- Bed load transport (river sediment moving along bottom, vs suspended sediment in water column) has the greatest effect on stream channel form.
- While larger flood events do more work and move more material than small events, the cumulative work and sediment movement from many small events is usually greater than one large event.



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- River patterns can come in several shapes including single thread river channels, vs braided channels, vs anabranching channels. River patterns are directly linked to river processes (e.g. erosion vs deposition).
- River channels are constantly adjusting to changes in the timing and volume of flow and sediment, and to the characteristics and supply of wood. Channels adjust to these changes through changes in channel geometry (width, depth, and slope), channel pattern, and bed texture (grain size and bedform)
- Floodplains represent areas where river borne sediments (both bedload and suspended) are stored at least temporally within the valley.
- Floodplains play an important role in conveying high flows, diffusing flood levels downstream, and exchanging
- Sediment and debris stored in the floodplain are eventually re-introduced at varying timescales and conveyed further downstream
- Channel avulsion is when a river channel rapidly abandons its channel in favor of a new channel. This can be due to multiple factors, and it can often be predicted.
- Flooding and erosion are two different physical processes and types of hazards.
- Because of the severe consequences erosion poses, several U.S. states have developed guidelines for mapping erosion hazards which can then guide land use planning, land settlement and community development. Terms for these guidelines include Channel Migration Zones, Fluvial Hazard Zones, or River Corridor Protection areas Pat referenced Bill Baccus's work on ONP glaciers, and recommended contacting Bill if the group is interested in learning more.
- Rivers are often linked to landslides because they are driving force for relief and slope. Erosion at the toe of a hillslope increases its slope which can trigger a slide.
- All stream reaches have a sediment budget (striving for stream channel equilibrium) consisting of sediment input, sediment storage, and sediment output. A channel reach out of equilibrium will naturally adjust by aggrading/building its streambed or eroding/scouring its streambed.
- The Hoh River is in a unique location with unique characteristic, located in an area with some of the highest geologic uplift in the Pacific Northwest. The ground is rising ~1-2mm/year, and this can have notable impacts to the Hoh River's behavior.
- The Hoh is a glacial river, and the receding glacier is very likely impacting the river's fluvial processes
- Climate change impacts - Correlating the highest 7 years would predict Hoh River peak flow could increase to 91,745 cfs in 2090, a 39% increase from 2018. UW Climate Center prediction for Hoh River daily winter flows indicates an increase of 46 to 64%. (UW Climate Impacts Center is a good resource for precipitation and streamflow forecasting)
- Land use and forest management has impacted the Hoh basin. Hoh Watershed Analysis found that landslide density in the Middle Hoh watershed increased 195% and that 82% of the observed landslides were associated with timber harvest. "Clear-cut timber harvesting on steep hillslopes, sidecast road construction techniques, and poor road drainage design all contribute to hillslope instability" (Parks 1999).

This presentation will be continued at next meeting in September.



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### **Announcements/Comments**

Tami gave an update and shared photos from middle-Hoh site visit last week.

Jill shared a map showing the old logjam in Peterson Bottom / Willoughby Creek area. This jam is directing flow

Luke gave an update on the chapter outline for the Local Capacity to Supply Restoration Needs chapter.

Roger gave an update on his story writing project. He has photos and will share with Tami.

### **Next Agenda**

Monday, September 21<sup>st</sup>, 1pm – 3:00pm Remote Only

### **Adjourn**

Notes by Luke Kelly