Steering Committee FINAL Meeting Summary

Monday, December 21, 2020 1:00 pm – 3:00 pm
Remote Access Only
https://us02web.zoom.us/j/85808280900

Welcome/Introductions

Attendees: Tami Pokorny, Kevin Featherston, Stephen Morrow, Jill Silver, Wendy Largent, Mike Ericsson, Bridget Kaminski Richardson, Jess Helsley, Julie Ann Koehlinger, Theresa Powell, Jessie Huggins, Luke Kelly

Agenda Changes/Additions

No additions or changes.

Approval of the November 16, 2020 Draft Meeting Summary

Recommended to add page numbers. Meeting approved by consensus.

Announcements/Comments

Theresa noted that many streams are at flood stage right now. Jill noted the Hoh river streamflow gauge went from 6k cfs to 11k cfs in just a few hours today.

Old Business

None

New Business

Review final CMZ mapping and findings – *Mike Ericsson, NSD*

Mike noted that maps are getting near final. The CMZ mapping includes mapping done by Bureau of Reclamation, and Natural Systems Design (NSD) added LiDAR and REM, which gave more detail on channel characteristics and off channel features.

First zone mapped is the historic migration zone (encompasses all historic channels – based on air photo). The team also developed:

Active geomorphic area/zone; Erosion hazard zones (based on bank height and bank geology); and Geotechnical hazard setback/zone (e.g. where the river is against a valley wall and could cause a slide. This area covers setbacks that encompass all area that could slide).

Mike showed maps and boundaries of historic migration zone (on inner most boundary), geomorphic migration zones, erosion hazard area (on outermost boundary). Mike noted the alluvial fan hazard zones, and he explained where and why these are included. The LiDAR map layer is from 2014, so

locations of channels is not all currently accurate. Mike noted many landmarks and infrastructure within the geomorphic migration zone. Scale and river miles are on the maps.

In general, it seems like a ten-year cyclical pattern of the river going from a single thread to a multi thread channel pattern. A ten-year flow event seems to really change channel response and behavior.

Review preliminary 2D hydraulic model results – *Mike Ericsson, NSD*

Wild Fish Conservancy collected bathymetry in 2014/15ish. NSD combined this with 2014 LiDAR, and mapped out channel roughness. They mapped out bare rock, bare alluvium, larger trees, etc. Assigned roughness to model. Used FEMA flood model to calibrate NSD model as much as possible. A couple locations needed some adjustments (with NSD and Jill's help).

Mike showed 2D model maps.

1-year flow depth map, 12,300 cfs: 6-8 larger tributaries are accounted for in adding to the mainstem flow model. At one-year flow, there are multiple locations where mainstem splits into two plus channels. Flow depth, but also velocity results are interesting at 1-year flood/flow. Channel velocity modeling shows how the confined channel is moving at 8-10'per second, which is quite powerful. Very upstream end of oxbow canyon shows slightly lower velocity and shows indication of backwater happening (at just a 1-year flow).

Spruce canyon reach had some of the highest velocities. Velocities are somewhat uniform otherwise. Velocity is much less where channel splits into two or more channels.

Next steps, taking model results (and doing some statistics to compare results in sub reaches.

10-year flow depth map, 52,300 cfs: Map shows majority of geomorphic migration zone is inundated. This flow also showed indication of backwatering of spruce canyon. Also showed Fletcher ranch being mostly inundated (but not majority of structures). 10-year channel velocity map clearly show oxbow canyon backwatering effect. Slower velocity from back water shown for nearly a mile upstream. Overall, the 10-year flood map shows many channels turning on and much of the valley width inundated. Flow velocities (at 10 year but even most at the 1-year flow) are moving most of the material available.

100-year flow depth map, 73,600 cfs: Shows water on both sides of Upper Hoh Road, floodplains are fully inundated, etc. Amazingly, the Fletcher Ranch barn is still barely dry. 100-year velocity maps show the main channel velocities not increasing much, but the flood plain velocities do increase up to ~3-4 meters/second.

Review preliminary riparian vegetation mapping – *Kevin Fetherston, NSD*

Kevin showed vegetation riparian mapping results. Mapping in combination of aerial photography and LiDAR created vegetation height layer. Kevin noted this is a relatively coarse scale map. Scale, identifying to nearest 0.5 acres, Identifies dominant forest type and height (in feet) (coniferous, deciduous, mixed, and cleared). Within project reach: black cottonwood, red alder, willow, sitka spruce, douglas fir, hemlock,

Use the 'first return' LiDAR data/imagery to get vegetation height. Kevin, show forest types and height classes table.

Kevin showed a map of riparian vegetation. Map showed forest types and heights based on colored polygons (e.g. percent deciduous, coniferous, vs mixed)

These maps have multiple uses. Can show large wood recruitment areas. Also shows forest types and high class inside and outside of geomorphic migration zone.

Red alder mature height ~125' in 45 – 50 years (total lifespan of 80 years) vs Coniferous dominate stands (greater than 125').

Mike asked if Kevin saw age classes that indicated historic flood flows. It seems the data shows the majority of deciduous trees over 25', which may indicate it's been some time since a big flood flow. However, there is a lot of development and human impact which makes this challenging.

For restorative actions, options include conifer release and or conifer planting in red alder dominated flood plains. Inter-planting sitka spruce within red alder stands (if missing), etc.

Next NSD steps: Will present more detailed results from analysis at January meeting. Will share final versions of things like maps. Feb and March will see drafting of the actual resiliency plan. Approximately May 2021, we will start looking at action plan and then followed by concept designs.

<u>News and Projects Updates – All</u>

None

<u>Announcements/Comments</u>

Frank noted that he liked the info and looks forward to sharing with LE group when available.

Luke gave update on upcoming partners calls regarding Hoh glacial retreat and potential SRFB projects for upcoming round.

Tami shared a thank you to the group, and noted the project is on its one-year birthday. Jill noted the areas of blue/gray marine clay should be mapped. Concerns about the polarity of the clay and negative impacts on salmon eggs.

<u>Next Agenda</u>
~~Monday, January 18,~~ January 25, 1pm – 3:00 pm Remote Only

Jill asked if it is possible to get an update form Federal Highways. Tami will check with Steve M/ FHA. Tami asked if anyone can share photos or updates as these flow events take place. Jill's crew will be out at Fletchers to map bank and erosion impacts.

Adjourn

Notes by Luke Kelly.