

Middle Fork Snoqualmie River Capital Investment Strategy Workshop Summary

February 25, 2020 (1:00 – 3:30 p.m.) at the Mt. Si Senior Center in North Bend
Sponsored by King County Flood Control District

In Attendance

Each table included stakeholders representing diverse interests and a table moderator from King County Water and Land Resources Division (WLRD). See attached list of participants and their affiliation.

- **Table 1 – Teresa Lewis, moderator**
Peggy Shepard, Jamie Burrell, Kirk Lackey, Cory Zyla, Lane Covington
- **Table 2 – Gus Kays, moderator**
Mark Rigos, Cindy Spiry, Wayne Russell, Bob Manelski
- **Table 3 – Seth Amrhein, moderator**
Kevin Lee, Kelly Heintz, John Noll, Doug McClelland
- **Table 4 – Linda Bartolini Venegas, moderator**
Denis Ransmeier, Denise DiSantos, Linda Grez, Minna Rudd
- **Table 5 – Judi Radloff, moderator**
Dylan Gambill, Laura Cooper, Daryl Williams, Mark Boyar
- **Other Attendees:** Chase Barton, Snoqualmie Basin Supervising Engineer, Tamie Kellogg, Kellogg Consulting, Facilitator, and Melissa Plotsky, Notetaker

Workshop Purpose

- Provide an update on the Middle Fork Snoqualmie River Corridor planning process.
- Share information on existing conditions and the draft Middle Fork Snoqualmie River Capital Investment Strategy.
- Provide an opportunity to ask questions and share observations and thoughts about the river, and flooding and channel migration hazards and risks.
- Discuss the draft Middle Fork Snoqualmie River Capital Investment Strategy proposed projects and sequencing in small groups.

Process

The 2½-hour workshop covered:

- Slideshow presentation on an update of the corridor planning process and the draft Capital Investment Strategy.
- Small group table exercise to discuss and document feedback on the projects and sequencing in the draft Capital Investment Strategy.
- Large group sharing of themes from each table.

Welcome, Introductions, and Presentation

Tamie Kellogg welcomed everyone and reviewed the agenda and meeting process. Everyone introduced themselves and who they are representing. Chase Barton, Snoqualmie Basin Supervising Engineer, gave a slide presentation on the corridor planning process and the draft Capital Investment Strategy. Each table group then discussed the projects and project sequencing.

Questions, Answers, and Comments on Existing Conditions and the Draft Capital Investment Strategy (CIS)

The following is a summary intended to capture the general content of the comment, questions asked, and answers provided; not a verbatim transcript.

1. Which levees were damaged during recent flooding?

The Mason Thorson Ells and the Mason Thorson Extension levees were damaged.

2. In looking at the horizon and thinking about impervious surfaces, just east of your project area, there are 326 homes that will be put in within a 7-year period. Do you think the modeling and forecasts have accurately captured things like the run-off impacts of those developments?

No, we did not include future developments in the modeling we did. We looked at a range of flows to understand the resiliency of the system, including looking at 500-year and 100-year flood events.

3. The City of Snoqualmie just passed a shoreline master program that allows us to build closer to the river without impervious soil provisions. Should we be considering those plans or programs that are upstream since they will influence flooding?

The City of Snoqualmie is downstream from the planning area for this study. What happens on the Middle Fork can impact the City of Snoqualmie, but the City's regulations are not going to influence Middle Fork flooding conditions.

4. You mention taking logs out of the river as a solution, but they are putting logs into the river to help fish. There is a conflict there. Do you have insight on that?

King County does different activities with wood at different times. There are times when it is prioritized to remove wood that is generally driven by public safety concerns and is directed by the King County Sheriff's Office. Additionally, there are lots of projects, both flood risk reduction and habitat enhancement type projects that involve placing wood in the river.

5. Are there specific areas in the Middle Fork Snoqualmie River where wood needs to be removed for safety? What is the reason behind removing wood there?

We did not do a channel survey for hazard wood as part of this study, so we do not have a database of that right now. We are not currently aware of any hazard wood removal needs.

6. Can you explain why you ended the study area at mile four and not further upstream? There is a fair amount of residential development there. What analysis has been done further upstream to know that this is where the line should be?

We focused on the areas where King County and the Flood Control District can take actions to influence and reduce flood risks. There are actions upstream of the project area and in the

upper watershed that could be complementary to the projects that we are proposing, but these are within areas generally outside of King County's jurisdiction. The types of actions that could be taken in those locations would not result in flood risk reduction benefits as directly as the actions that we are proposing.

- 7. *I do not know if the City of North Bend is doing this, but the City of Snoqualmie is taking areas out of the floodway putting them into the floodplain which changes the building codes. I am concerned about this development and impervious surfaces. You can put commercial buildings in the floodplain, whereas in the floodway, you can but it is harder. I am concerned that the water is going to be backed up by our progress. When you take all these apartments going up, normally you cannot put residential structures in the floodway, but you can in a floodplain. I feel it is wrong.***

We did not include a review of the local jurisdiction floodplain regulations in the planning process.

- 8. *Along the lines of expanding the aperture of what we can do, when I look at this plan, it appears very reactionary to current problems. You have specific homes at risk, and I get that. But what are we doing longer term and what can we do upstream to mitigate problems in the future?***

After the presentation, you will get together with your table groups and talk about whether these are the right things to be considering, if we are missing something, or is there something that our regional partners should be doing that is in cooperation with these efforts.

- 9. *Have the landowners whose properties are proposed to be acquired in project C in the CIS already been notified?***

We have not yet notified landowners.

- 10. *Did you include in your analysis different scenarios around climate change and how they will impact the results and projects?***

We did not do specific climate change analysis on this project. We did look at a range of river flows. We looked at a 100-year, the one percent annual probability flow, and we looked at a 500-year, which is a 0.2 percent annual probability flow. We tried to understand the variability and impacts associated with those types of flows and the robustness of the solutions we were considering. We used that range of variability approach to help understand different kind of conditions that we might experience in the future.

- 11. *When you elevate homes, what is the height? One foot? Two feet? 10 feet?***

There are different regulations in different jurisdictions. In unincorporated King County, homes are elevated so that the first-floor elevation is three feet above the 100-year water surface flood elevation (Base Flood Elevation).

- 12. *So, how high are you raising it? Are you raising it six feet or a foot?***

The height of a home elevation depends on the relationship between the first-floor elevation and the 100-year flood elevation. It could be four feet; it could be eight feet. It depends on what the ground elevation is, where that house is sitting, and then what the base flood (100-year) elevation is. If you drive around this community, you can see homes that have been elevated to different heights, depending on the base flood elevation at that location.

13. It looks like the Flood Control District has already put \$2.4 million in the CIP (A) for this year. Why are we waiting over six years to do these elevations?

We are implementing up to 10 to 12 home elevations a year in the upper basin; two of those are planned each year for this area adjacent to the Middle Fork. This is a program that spans a wider area. The rate of implementation is influenced by staff availability and program size more so than funding availability.

14. Are all costs covered by King County?

No, it is a cost share with certain cost limitations; the homeowner pays a 10 percent cost share.

15. A lot of the Snoqualmie elevation funding comes from FEMA.

The vast majority of funding for home elevations implemented by King County comes from the Flood Control District. The Flood Control District also contributes money to the City of Snoqualmie's home elevation program. The City of Snoqualmie has multiple funding sources to implement their home elevation program. There is information on the King County website about the home elevation program. Visit the website for more information:
<https://www.kingcounty.gov/services/environment/water-and-land/flooding/buyout.aspx>

16. Is the funding for the Flood Control District coming from the whole county? Are the residents upstream paying into the Flood Control District for most of the work that is occurring within these four miles?

Yes, funding comes from a portion of property taxes collected countywide.

17. What are the tools in the sediment management program?

Tools in the sediment management program include channel monitoring and gravel removal. An early-action project has been initiated as part of the Middle Fork CIS process to begin collecting channel monitoring data. This data will be used to evaluate trends in sediment deposition and channel bed elevation.

The Middle Fork has historically not been considered a river with widespread sediment aggradation, which is why it has not been a part of the King County program previously. There are two areas however, directly upstream from the Mason Thorson Extension and the Mason Thorson Ells levees, where large gravel bars persist and may be influencing local channel erosion and water surface elevations. Proposed projects to reduce flood risks at these two levees will incorporate the channel monitoring data and consider gravel removal among other potential solutions.

18. The City of Snoqualmie is working on a special permit for a wastewater treatment plant and identifying the industrial sources of effluent coming into the plant. Some of those are recycling concrete and gravel pits. I do not know if we have any of that activity in this reach, and if we are looking at any permits from the Department of Ecology for that kind of activity, that might contribute to this kind of sediment. There was a presentation at the Snoqualmie Watershed Forum about reports of more people taking water out of the river to irrigate. I do not know if we are tracking how many people are pulling water out of the river in order to maintain crops. Will the sediment study include anything related to that?

We did not look at water rights or water removal rights as part of study. We are not tracking this, and we are not aware of any water withdrawal points within this study area. We are more familiar with that in the lower Snoqualmie River basin, where there is active irrigation.

19. In doing the sediment management analysis, I assume you will do a cost benefit analysis as part of it and look at habitat impacts. Will you include maintenance costs of doing that? If you start removing sediment and gravel, how often would you have to do it? Would it even be worthwhile to do it because of how often you would have to do it?

Right now, we are just beginning to collect data. Where this data is most likely to be applied is at the Mason Thorson Extension and the Mason Thorson Ells project areas. Any consideration of modifying the river channel or bank would occur as part of those projects. We would do feasibility studies and get a better understanding of alternatives as part of projects in those locations. If sediment management was one of those alternatives, that kind of analysis would be part of that project--the scope and duration of an action, what would be needed for permitting, if there are any mitigation actions that would be associated with it, and if there is anything that would need to happen in advance of that sediment removal.

20. Have you contacted any owners about acquisitions?

No, we have not yet.

21. Will you consider acquisitions in areas upstream?

Yes. If properties meet the criteria for acquisition in the Flood Control District's Acquisition Policy, they may be considered for acquisition.

22. With this program and the efforts underway, there was a feasibility study you completed with the Army Corps of Engineers to determine what it would take to get them into the program. But, then in your proposed medium-term projects, you said that those two levees are also pinch points, causing significant sedimentation. And, at that later phase, you said you would be looking at the possibility of setting back or not extending those because of the sediment issue, and if you open that up, maybe you could move that material through and not have that sediment. Would that be a different project after you go through this feasibility study?

Yes. This does exactly what you are saying. There are longer term projects that would consider more major modifications.

23. Is that a good idea or is it a bad idea? It might be a bad idea to improve some of those and it might be a good idea to set them back or shorten them, so you do not have that sediment building up and causing flooding upstream.

At the Mason Thorson Ells levee there are damages to the downstream end. We will consider repairing that facility, even though there may be a long-term plan to modify its footprint, because of what could be at risk from that damage. We have taken this sort of action on the Tolt River. In 2018, we repaired a levee where we are planning to do a major setback in the next five years. We do that sort of repair because there may be short-term risks that need to be mitigated until we can implement a larger project.

24. Is it legal to remove sediment?

It is legal to remove sediment in some circumstances. On the Cedar River, for example, there is a section of the river that is designated as a federal facility. It runs through Boeing and there has been some sediment removal activity on that river in the last five years.

On rivers like the Middle Fork, the Washington Administrative Code (WAC 220-660-170) that applies allows for sediment removal for flood risk reduction benefits, but that removal must also provide habitat benefits. It needs to be permitted as a one-time action and any required mitigation must be completed and demonstrated to be effective in advance of the sediment removal activity. There are a lot of conditions associated with any proposed sediment removal.

25. *Is it fair to say it is included, because in some extreme circumstances it could be done, but that it is extremely unlikely?*

It is unlikely in a lot of conditions, but there were some productive conversations in the October 2018 workshop about a possible side channel enhancement that could be both a sediment removal action and a side channel construction project. For long term success, there also needs to be a modification to the facilities that are constricting the channel to change the sediment depositional patterns and ensure the river does not fill back in with sediment. It is not totally off the table but needs to be considered in that context.

26. *When talking about flooding, are you talking about one season of the year?*

Yes, usually October-April.

27. *In the proposed long-term actions, why is CIS item K in the long-term category? It seems like an easy no-brainer that might even be less expensive than other solutions.*

There are a couple of reasons. One, the flood risk reduction benefits of those actions in isolation are relatively limited. So, they do not raise to the same level of priority and benefit. In other projects like this, where people may have different priorities, we have sometimes split out those projects and identified a levee that a habitat partner may have interest in. If other partners bring funding to leverage some District funding, some projects can be accelerated.

Another consideration is compensatory storage. Currently, the removal of fill in one location and placement of fill in another location need to happen within the same time frame. There is a lost opportunity if you remove a lot of fill, and sometime in the future, you might want to put in fill for a beneficial action. You might lose the opportunity for compensatory storage.

28. *Can you provide some guidance on how big can we think upstream and downstream? I know you are restricted in your budgets, but the reason so much water comes flooding out of the Middle Fork is the history of logging that left a lot of bare banks, and we need more woody debris up there. Is focusing on that a waste of your time?*

That is a good thing to discuss in your small group and to write down, so that we have a record of it and other partners can think about broader scale actions. We have some limitations to the scope of what we, as King County and the Flood Control District, can do. That does not mean that it should not be considered and that we should not capture that as part of the process. We want to focus on what we can enact for beneficial change in the system.

29. *There is something I do not understand: the funding is coming from all the residents in the county, so what is the requirement that makes it so that we can only work on the areas that were developed in the 1960s, when we probably did not have the best ideas on how to manage flood control? It is so different from the way that transit or anything else is done. It seems as if we want to be looking at things from a broader perspective. Do you not have the authority to physically look beyond where the existing development has occurred?*

This study focused on the areas where King County and the Flood Control District can take actions to influence and reduce flood risks. There are complementary programs and actions that can be taken in other parts of the basin, however, the area where our work is focused includes the areas where direct actions can be taken to reduce flood risks.

30. *Is there an actual geographic boundary that is part of the Flood Control District or is the County the Flood Control District?*

The Flood Control District geographic boundaries are the same as King County.

31. *It seems to me that in today's world, we want to raise a heads-up just a little bit. We still may find that the biggest bang for the buck is fixing areas where the population is highest.*

We want to know if you have ideas about significant flood risk reduction benefits that could come from upstream.

32. *Is there a relationship between property acquisitions and strategies for levee setbacks?*

There are can a relationship between them, they are not unrelated. The property acquisitions that have budget authorization are the 18 properties that are in the severe channel migration hazard zone area. Some of those properties are located near the Mason Thorson Ells and Mason Thorson Extension facilities, and there are other properties near those facilities that, if the County were to acquire them, would allow for more flexibility. That funding is not just for those projects, and there might be other properties that we would need to acquire to have a full suite of options. Project C (Property Acquisitions) provides the budget authorization, should any of those property owners want to sell their properties to the County.

33. *Have you had the chance to include any properties on the Land Conservation Initiative list?*

All of the proposed 18 acquisition properties are included on the Land Conservation Initiative list.

34. *When they were making changes at the I-90 intersection, they spent a lot of money putting in culverts. I know there is a state mandate to put in culverts, but is there an ability to look at that funding source for the work that you are doing here?*

We are not planning to seek state or federal funding for projects that involve culvert replacements. We are interested in partnering with the City of North Bend to implement culvert replacement projects.

Comments Provided at Meeting. If Related to a Specific Question, a Number is Provided

#2 - It seems that the area is growing faster than things like water rights can keep up with. We can make all these 10-year plans, but it feels as if reality is vastly outstripping our models and forecasts.

#6 - On the South Fork Snoqualmie River, you also stopped where the facilities stop and there are real potentials for enhancements upstream that should be a part of the conversation. It would be nice to know, as you gather all this data, are there wins upstream that may help gravel, or flow, or storage, or things like that? Or, are there homes with a serious threat? It seems like when you have the expertise, you should at least give 10 percent of the time to look beyond.

Small Group Report Out Comments

- It is important to focus on road safety. Also, a lot of these projects—like levee and other work—needs to be tied to property acquisition. You must find places to have successes, so that successes can be seen. It is a great educational opportunity.
- Acquisitions should be a higher priority because prices are increasing, and it will get harder to buy.
- Current/planned development and impervious surfaces should be factored in, so that we can have relevant forecasting, going forward. We should have put steps in place to handle water 10 years ago, as opposed to just reacting to hot spots. If we do not change, we will have a continuous stream of hot spots.
- Landslide-derived sediment is a major contributor to sediment in river systems.
- Potentially we may have more forest fires like in California; we need to plan for it.
- When Middle Fork floods come from upstream, we need to replace the forest canopy.
- Along with acquisitions, we also talked about multiple goals and combining resources. For acquisition, we should look at properties that are relatively undeveloped so they could work as flood water storage and combine that with public access. If some properties are too expensive, we could buy the development rights. Levee setbacks and having more space for the river solves a lot of issues, and that should be the highest priority. Otherwise, we must continuously raise houses.
- Removing sediment can alleviate some pressure.
- For CIS items F and G (Floodplain Conveyance Improvements) - we thought that was an awesome idea and we would not want it to be contained in a box. Seems like such an amazing opportunity to work with how water flows while also thinking about wildlife habitat and trails. Overlaying all of it together would create a beautiful place that also served a function.
- In looking at the map, if the Snoqualmie Valley Trail blocks water flow, there are places on either side where culverts can be put in underneath the trail.

Written Comments Submitted on the Draft CIS Projects and Sequencing during the Workshop Efforts Underway

- **A. Residential Flood Mitigation**
 - Increase the number of home elevations per year; prioritize the 100-year flood, not the 500-year flood.
 - Look at longevity when elevating homes; staircases on older elevations are falling apart and are unsafe.
 - Continue to elevate homes to retain more affordable housing options.
 - Reactionary; short term solution which is not solving the problem.
- **B. Channel Monitoring and Sediment Management Program**
 - Not sure how feasible this option is given regulations.
 - Prioritize if gravel will not return right away.
 - Is it worth it? River fills in with sediment each year. Only evaluate at pinch points.
 - Update Channel Migration Zone maps using current LIDAR data.
 - Consider spending money upstream on woody debris and road removal – See Forest Service Wild and Scenic River Management Plan for their proposal – more impact, less money, outside residential concerns; flexible use of money to solve the problem by expanding project boundary.

- Prioritize levee setbacks as a solution to sediment issues; allows storage and natural sediment recruitment, also allows for natural recruitment of large woody debris.
 - Involve the community in documenting channel changes (private drones, photos); consider targeted use of limited sediment removal such as 428th Bridge over the North Fork Snoqualmie River.
- **C. Property Acquisition**
 - Include properties on Land Conservation Initiative (LCI) list; include properties beyond 18 identified.
 - Consider broader scope for property acquisition.
 - Obtain easements if acquisition is not desired by property owner.
 - Prioritize properties that are next to the river and that are not yet developed to provide flood storage capacity, public access, and levee setbacks.
 - Look for opportunities to combine funding sources from other departments and agencies for multiple benefits (recreation, flood, wildlife, fish, etc.).
 - Shift money to E or F.
 - Be strategic for success and find a willing seller/landowner to be your advocate.
 - What is the timeline for engaging with landowners if funding is set aside?
 - Build in negotiation flexibility for the bigger opportunities.
 - Continue acquisitions around Three Forks (e.g., farms in floodplains); meet with NGOs about funding.
 - **D. U.S. Army Corps of Engineers Public Law (PL) 84-99**
 - Could conflict with medium-term actions.
 - Concerned this will lock county into Corps' regulations and doesn't help habitat.
 - Need a better understanding of costs to property owners and all government agencies.

Near Term Actions

- **E. SE Mount Si Road Isolation Risk Reduction**
 - Very important action for health and safety of 415 homes; cost is reasonable and safety benefit is huge. Move to efforts underway.
 - Higher priority than A and C.
 - Consider second bridge to provide access.
 - Will climate change be incorporated into analysis? Be conservative and oversize.
 - Land acquisitions should be a higher priority; add a pedestrian bridge.
 - Look at opening old relic channels to assist in draining following flooding.
- **F. Floodplain Conveyance Improvements (Phase 1)**
 - Good for a near-term action.
 - Concerned that cross valley road with undersized culverts, if opened, may increase flooding downstream.
 - Fix roads that are not fish or flood friendly; work with city to be more aggressive here.
 - Ensure culverts are sized for fish; incorporate climate change considerations.
 - Consider wildlife corridors to connect South and North Fork Snoqualmie rivers.
 - Why just the boxed area on the map? Expand the area.
 - City of North Bend needs funding to replace culverts in the Silver Creek neighborhood; City of North Bend can provide staff resources to support planning, management, design, and implementation of these projects.

- This should be a priority due to high density residential development in the area.
- Work with a landscape architect to envision water swales as beautiful elements that provide habitat and trees.

Medium Term Actions

- **G. Floodplain Conveyance Improvements (Phase 2)**
 - Acquisitions should be a higher priority.
 - Install culverts through Snoqualmie Valley Trail to allow flow.
- **H. Mason Thorson Extension Risk Reduction**
 - Focus on levee setback.
 - If willing landowners, move this action to near term.
 - Move up due to development pressure; buy development rights.
- **I. Mason Thorson Ells Risk Reduction**
 - Focus on levee setback.
 - If willing landowners, move this action to near-term.
 - Concerned about land ownership; why invest so much money at this site?

Long Term Actions

- **J. 428th Ave SE Road Isolation Risk Reduction**
 - For safety reasons, move this action forward; should be a higher priority.
 - This road is used by people from North Bend traveling north, not just Ernie's Grove or Moon Valley.
- **K. Increase Flood Storage and Conveyance**
 - Move forward, if you can.
 - Can a good estimate of the amount of water being stored be calculated? Could qualify for Ecology's Hirst funding.
 - This should be a higher priority.

Capital Investment Strategy – Overall Sequencing

- Revetment/levee improvements or modifications should be prioritized earlier to prevent future battles with new housing developments neighboring the facilities.
- Is an opportunity - cost type consideration taking place? Can the money be used so quickly?

Other Comments

- Broaden the scope of the project area; the Flood Control District is funded by all residents and should look at the entire watershed for flood reduction benefits, including areas upstream of the lower four miles.
- Focus on road removal and restoration upstream.
- Prioritize acquisitions and levee setbacks.
- How many, so far, unconsidered impacts to flooding might be on the way (development, fire, natural hazards)?
- Consider landslides if not addressed through other programs.
- City of Snoqualmie spent \$1 million on stabilizing a hillside next to Ernie's Grove for the City's primary water source; after heavy rains slopes are sliding/eroding.

- Current and planned development adds impervious surfaces and generates surface runoff; include in analysis of projects.
- Partner with Si View and King County Parks to increase recreation opportunities.
- Your amazing project at the Bybee Holly Farm (Shake Mill Left Bank) needs better PR, education and community outreach. People had no idea what was going on and when you have such a visible project you should conduct tours, use social media, and other methods of communication.