

Bear Creek Watershed-Scale Stormwater Management Plan

Technical Workshop
Wednesday March 29th
8:30 am – 12:30 pm

Old Redmond Schoolhouse Community Center
16600 NE 80th Street, Redmond, WA 98052

Meeting Summary

Workshop Attendees (36 in total):

David Bain, Sno-King Watershed Council
Reid Brockway, Lake Sammamish resident
Dan Garipey, Washington State Ecology
Larry Jones, King County Science and Technical Support
Claire Jonson, King County Stormwater Services
Eric LaFrance, City of Redmond
Terry Lavender, Water Tenders
Rachel McCrea, Washington State Ecology
Doug Navetski, King County Stormwater Services
Martin Nizlek, Lake Sammamish resident
Joan Nolan, Washington State Ecology
Rian Sallee, Washington State Ecology
Dick Schaetzel, Water Tenders
Carrie Schulte, Washington State Ecology
Scott Sheffield, Lake Sammamish resident
Scott Stolnack, King County WRAI8/Science and Technical Support
Karen Walter, Muckleshoot IT
Mary Lou White, Wild Fish Conservancy

Partners:

Asha D'Souza, City of Woodinville
Dick Gersib, Washington State Department of Transportation
Elsa Pond, Washington State Department of Transportation
Bill Leif, Snohomish County
Andy Rheame, City of Redmond

King County Team:

Sevin Bilir, King County Science and Technical Support
Steven Brady, King County Science and Technical Support
Jeff Burkey, King County Science and Technical Support
Tim Clark, King County Science and Technical Support
Eric Ferguson, King County Science and Technical Support
Josh Kubo, King County Science and Technical Support
Jim Simmonds, King County Science and Technical Support
Mark Wilgus, King County Stormwater Services
Jen Vanderhoof, King County Science and Technical Support

Facilitation and Support Provided by:

Tamie Kellogg, Kellogg Consulting
Aimee Bullock, Kellogg Consulting
Linda Glasier, Kellogg Consulting
Natasha Walker, Kellogg Consulting

Workshop Purpose:

- To get your input on the evaluation criteria for selecting BMPs that will help restore the health of Bear Creek.
- To provide input on approaches to plan implementation.

1. Open House

Participants had an opportunity to review maps of the watershed and information about the development of the Bear Creek Watershed Plan and talk directly with the project team.

2. Meeting Opening

Tamie Kellogg welcomed participants to the workshop, shared the workshop’s purpose. Then asked folks to introduce themselves and gave an overview of the day’s agenda and the packet of materials.

3. Presentation on Context for Problems and Solutions – Jeff Burkey

Jeff provided background information on why the stormwater plan is being developed, the key findings of the current conditions assessment, an overview of the process to define the key problems and provided a project timeline with high-level milestones. Jeff also shared the project teams thinking about the potential solutions and trade-offs associated with them.

Bear Creek Stormwater Plan Partners shared information about their jurisdiction’s involvement and interest in this stormwater plan. The following individuals shared their jurisdictions interest in this plan and the opportunities to continue improving the health of Bear Creek.

- Andy Rheume, City of Redmond
- Elsa Pond, WSDOT
- Asha D’Souza, City of Woodinville
- Bill Leif, Snohomish County

Questions and Answers:

Q. Are the current conditions assessment documents available for us to review?

A. Not all the reports are complete, but most are in review right now. There are a few that are getting wrapped up and will start trickling out in the next week or so and made available to everyone (water quality, bugs, habitat).

Q. Do you have any definitive answers as to why some of the older facilities don’t work?

A. The older facilities are based on design standards that don’t meet today’s current objectives. Many do not include any kind of water quality treatment. So, retrofitting will be a costly part of the plan.

Q. Some of the programmatic BMPs look easier to model than others. How would you incorporate these programmatic BMPs into the modeling?

A. Some of the programmatic BMPs we don’t intend to model and can’t be quantified. So there is less certainty, but we are planning to embrace the non-quantifiable.

Q. Have you identified where the fecal coliform is coming from?

A. We did do concentration analysis and DNA testing. We found that it was not dominated by human fecal, but we have not identified the specific animal source.

Q. Have you considered additional environmental DNA testing?

A. We have thought about it, there is another group at King County Stormwater that is looking at sources of the fecal, but I'm not sure where they are with determining sources. When it comes down to implementing certain BMPs, related to different types of animals, we will consider additional tests.

Q. Can you explain the iterative process of data going between the HSPF and SUSTAIN modeling?

A. The HSPF modeling generates the run-offs from different types of land use. We then input that data into SUSTAIN, run it through the modeling and through various BMP scenarios. Which model we use or if we model it at all, depends on the type of BMP.

Q. Regarding water quality, can you identify spikes related to storm events?

A. We are monitoring during major storm events, but we don't model episodic events. However, we do try to capture the essence of the variation in concentrations by sampling multiple times during the storm event and sampling multiple storm events. (additional response: modeling is intended to infill where we don't have data in time and space.)

Q. How important is the work of the Bear Creek Stormwater Plan in relation to the 10-yr Salmon Recovery Plan?

A. We are looking for opportunities on their CIP list to implement the BMPs that meet our objectives. For instance, identifying disturbed riparian buffers might be a good choice for habitat restoration efforts.

4. Approach to Selecting BMPs and Implementation

Presentation on Bear Creek Rural Areas (Exercise 1)– Jeff Burkey

In preparation for participants answering questions about the rural area of Bear Creek watershed, Jeff provided a presentation on the unique problems, considerations and potential BMPs for the rural areas (85%) of the watershed.

Questions and Answers:

Q. What criteria went into the BMP selection for B-IBI?

A. The Bear Creek team (including its jurisdictional partners) identified the primary objective of treatment for the various BMPs. How each BMP was characterized is not an absolute condition. We acknowledge that some BMPs may benefit multiple conditions, as well as secondary benefits. The intent of this is to provide context on what types of BMPs may be applicable on public and private, above ground and below ground, constructed and programmatic.

Q. What assumptions were used to differentiate between public vs. private expense?

A. Public means tax dollars are paying for the BMP.

Table Discussion and Individual Feedback on Potential Solutions for Rural Areas

Participants were organized into six different tables with individuals representing various interests. Each table facilitator assisted the workshop attendees with the following questions related to rural areas in the watershed and encouraged them to record their feedback on a comment sheet. Participant responses to the following six questions are attached.

1. Constructed BMPs - What are your thoughts about where the emphasis should be placed on implementing BMPs - on public or private lands?
2. Constructed BMPs - What are your thoughts about where we should place our emphasis - in above ground, land used for stormwater projects only or below ground projects where the surface of land can be used for something else?
3. Constructed BMPs - Please put in rank order the importance of these evaluation criteria when selecting Constructed BMPs using 1-6, where one is least important, and six is most important to you?
 - Cost
 - Amount of Area Treated
 - Certainty and Ease of Maintenance
 - Longevity of BMPs
 - Public Perception and Acceptance
 - Executable/Implementable
4. Habitat: How should we prioritize habitat restoration efforts versus stormwater mitigation? Why is that important to you? Is it more important to see habitat BMPs earlier, parallel or after the constructed stormwater BMPs?
5. Programmatic BMPs - How would you prioritize the use of public outreach/stewardship vs. regulatory/government action approaches to changing behaviors or practices that impact stream quality?
6. Programmatic BMPs - Please put in rank order the importance of these evaluation criteria when selecting Programmatic BMPs using 1-5, where one is least important, and five is most important to you?
 - System-wide application
 - Readiness
 - Based on Audience Research
 - Effectiveness
 - Cost

Large Group Debrief of Table Discussion Highlights:

Table 1 We think that regulatory action is needed, but if we don't have strong educational piece and a culture of participation, then people won't buy into the regulatory and we will need more enforcement.

Table 2 Chicken Soup Approach - We used a medical analogy of having a cold, it's not an either-or situation. It's not constructed vs. programmatic BMPs; It's a blending of many/multiple items together (aka soup) that makes the benefits/outcomes restorative. We can do restoration projects that help with stormwater, that is also restorative.

Table 3 Banning phosphorous, considering stormwater needs vs. habitat needs might be considered on a percentage of each basis or perhaps a sliding scale. We discussed looking at long-term costs for sustaining everything overall and including ongoing evaluation of progress/process worked into the plan.

Table 4 Our discussion changed my view several times. There is a series of scale here, and we're still at a broader bear creek-scale instead of a private/public or above/below ground. We

talked about regulatory enhancements for development and redevelopment, treating stormwater at its source rather than at the habitat level. Maybe we need to bring in specific landowners and have a broader discussion.

Table 5 We discussed regulations and how to use them to not target individual people or actions, but rather to do things at the market level, such as making harmful substances less available, like prosperous in fertilizer, so we don't have to police people with enforcement. Instead, just make the harmful/toxic things unavailable.

Table 6 Regarding question number two, we discussed that in a rural area it seems like we could get the most land and invest in above ground facilities as we have less need to have multi-use there.

Presentation on Urban Area – Jeff Burkey

In preparation for participants answering questions about the urban area of Bear Creek watershed, Jeff provided a presentation on the unique problems, considerations and potential BMPs related to plan implementation in the urban areas (15%) of the watershed.

Questions and Answers:

Q. Do the same facilities stats apply for rural also apply to urban.

A. Yes, similar older facilities and similar stats.

Q. What percentage of the problem of flow is in urban areas vs. rural?

A. We don't know that now, but we will be able to quantify it after we do the modeling.

Table Discussion and Individual Feedback on Potential Solutions for Urban Areas

Participants remained in their six-table configuration with individuals representing various interests. Each table facilitator assisted the workshop attendees with the following questions, related to rural areas in the watershed, and encouraged them to record their feedback on a comment sheet. Participant responses to the following question is attached.

1. In a more urban environment with more expensive BMPs to implement, more constraints, and poorer stream health, please share your thinking about the most effective approach? Programmatic, constructed, other creative ideas are welcome. Please share why.

Large group debrief of table discussion highlights

Table 1 We talked about incentivizing BMPs in certain areas potentially through policy, for instance, grants for rain gardens.

Table 2 We discussed educating new property owners. We agree that constructed BMPs are effective long term strategies. We also touched on adding incentives to the programmatic approach.

Table 3 Concentrated problems need concentrated solutions. Salmon habitat restoration in headwaters is more about flow control. It is not going to impact the large fish species.

Table 4 We discussed the UPD (?) watershed plan and how we don't know if they did it or if it worked. I'm also not sure that we agree on "effectiveness," that's a loaded term.

Table 5 We talked about how space is constrained in urban areas and how underground solutions are more likely than above ground ones.

Table 6 We talked about how people are just not aware of the streams and the hydrology around them, and we thought about how we could make that information more visible.

Presentation on Plan Implementation Considerations (Exercise 3) – Jeff Burkey

In preparation for participants answering questions about the plan implementation for Bear Creek watershed, Jeff provided a presentation on the implications of cost, timeline, and approach to the plan implementation in the watershed.

Questions and Answers:

Q. What is the estimate of costs for plan implementation?

A. We anticipate it will be in the 100's of millions or possibly a billion + range.

Q. How do you address the costs through time? Amortize them? How?

A. Yes, we have. Our costs will include maintenance (additional info: and will be based on a nominal discount rate (e.g., 2.5%))

Table Discussion and Individual Feedback on Plan Implementation

Participants continued in their six-table configuration with individuals representing various interests. Each table facilitator assisted the workshop attendees with the following questions, related to rural areas in the watershed, and encouraged them to record their feedback on a comment sheet. Participant responses to the following six questions are attached.

1. How should we implement this plan? Please share your thoughts why it is your preferred approach. A sample table reflecting some possible approaches and pros/cons. If you have other suggestions for prioritizing or sequencing some other way, please share.
2. The cost to meet the targets using constructed solutions will be significant. At some point in the future, water quality, flow, and/or BIBI targets may be partially or mostly achieved after large expenditure/construction of BMPs. Modeling or actual results may predict diminishing returns (marginal improvements to meet target metrics) for further investment in BMP construction. How important is it to you that the targets identified in the Plan be achieved fully? At what point should other solutions/practices be considered?
3. Depending on how the BMPs are implemented, it may take decades before there will be any measurable improvements within Bear Creek.
 - a. What is an acceptable time horizon for achieving the targets? (example – 20 years, 50 years, 100 years?)
 - b. How long before you feel it would be important to see progress?
4. Are there other issues, concerns, questions you may have about the Bear Creek Watershed scale Stormwater Management Plan?

Large Group Debrief of Table Discussion Highlights

Table 1 We had four different complimentary ideas about implementation e.g.; easiest first and then evaluating the effectiveness of that action and improving the plan. All were acceptable approaches.

Table 2 Similarly, we discussed monitoring and modeling. I don't think it's critical to reach every target, but it is more important to know that you haven't reached the target and why.

Table 3 We think it's important to have early success and early wins to get buy-in from decision-makers.

Table 4 We think that with a short-term timeline of 10-20 yrs we might see significant improvement in target metrics. A more long-term goal is to restore the highest beneficial uses - fish recovery.

Table 5 We discussed working at a watershed scale for tree planting and incentives for property owners and working on a basin scale for government BMPs to control problems in specific basins, also finishing in 50 years.

Table 6 We spoke about the importance of working on a political time scale to secure consistent funding.

Everyone was asked to share their perspective on “what success looks like for this plan?”

Table 1

- Implementation plan
- Implementable
- Improved habitat conditions
- Build a state of the art analytical machine, rigorously test it, and document results including flaws

Table 2

- Sustainable chinook salmon fisheries, starting at the watershed
- An adopted plan with realistic targets and early achievement of some of those targets
- Meeting water quality targets and salmon recovery
- Measurable progress
- Net increase in ecological function of 3% per year

Table 3

- Fish and water quality, also a platform for next successful project
- The obsolescence of this type of workshop
- Measurable improvements and adaptive management
- Having a fully retrofitted sub-basin to see if this all works
- Measurable progress; inputs, outputs, and outcomes

Table 4

- Restoration of beneficial uses
- Frequent feedback and a cost benefit analysis
- Harvestable salmon being available for fishers
- High census ratings
- Improved water quality standards and fish

Table 5

- Practical, implementable, detailed and specific plan
- Public/citizen awareness and involvement
- Public acceptance
- Water quality improves, fish return and appropriate water protections are in place
- Culture change around watershed, name this plan after Dick Gersib

Table 6

- Restored fish and meeting water quality standards
- Habitat sustaining salmon populations in Bear Creek
- Restored hydrology, improved water quality treatment and flow, trees that help fish
- Project funding
- Haiku –
 - bear creek watershed
 - fixing past and future to
 - avoid salmon dead.

5. Plan Development & Next Steps

Jeff provided a presentation on the next steps for completion of the plan.

1. Finalize current conditions reports
2. Continue the public outreach/engagement
3. Complete the modeling
4. Develop the implementation plan
5. Produce a draft plan
6. Conduct a Public Meeting in December 2017 to present the plan for the 30-day comment period
7. Submit plan to Ecology, April 4th 2018

Questions and Answers:

Q. Will the draft plan have options or a recommendation?

A. I don't know because we haven't written it, but my goal is to have a recommendation that encapsulates the different jurisdictions input. I don't anticipate it including options.