

Notes from Management Team Meeting

WRIA 9 Stormwater Retrofit Plan

January 16, 2014, King Street Center

Attendees: Jim Simmonds, King County; Elissa Ostergaard, King County; Dr. Rich Horner, University of Washington; Cathie Scott, King County (note taker); Curtis DeGasperi, King County; Dan Smith, King County; Dino Marshalonis, EPA; Mindy Roberts, Ecology; Ed O'Brien, Ecology; David Funke, King County; Mark Wilgus, King County; Doug Navetski, King County; Olivia Wright, King County; Brendan Grant, King County; Ben Parrish, City of Covington; Don Robinett, City of SeaTac; Michelle Wilcox, EPA (via telephone), Tamie Kellogg, facilitator

Not Attending: Chris Thorn, City of Auburn; Erkan Istanbuluoglu, University of Washington; Dave White, King County

Introductions and General Update

- Attendees introduced themselves.
- Jim Simmonds passed out the agenda and told attendees that the discussion on the WRIA 9 retrofit implementation strategies report, scheduled for the last hour of the meeting, would be moved up to accommodate Michelle's schedule.

WRIA 9 Stormwater Retrofit Implementation Strategies Draft Report

Jim distributed the executive summary for the draft implementation strategies report. The purpose of the report is to summarize what was done in the study, what was learned, and what can be concluded. It is intended for nontechnical audiences—managers, public works directors, and others—to help them make decisions.

He described the six key conclusions from the study:

- Untreated stormwater in the project area has substantially degraded stream flow and water quality.
- Stormwater mitigation requirements for new and redevelopment likely could result in large improvements. Projections indicate that about 47 percent of the landscape will receive stormwater treatment over the next 30 years.
- New stormwater facilities will require inspection and enforcement. Public agencies may need to explore whether surface water management fees can be increased to cover the cost of these services and/or whether inspections could occur less frequently as a means to reduce costs.
- If development were to continue to occur at the rate expected through 2040, all land in the area except roads and highways will be developed or redeveloped in about 60 to 80 years.

- Public stormwater retrofit programs could take an active role in building stormwater management systems sooner, rather than waiting for development or redevelopment. Such programs would likely need federal, state, or regional funding. The feasibility of funding through increased stormwater management fees is unknown.
- The possible effects of climate change are too uncertain to incorporate into designs. Preliminary information indicates that stormwater facilities may need to be larger to accommodate more intense storms although a large amount of uncertainty remains.

The management team offered the following questions, comments, and suggestions:

- Q: How do you want readers to use this information?
A: It can be used as a justification for expanding stormwater management programs and to secure funding for the programs.
- Suggestions on ways to present costs are as follows:
 - Give a range of costs to help readers understand the degree of uncertainty in the estimates.
Action: Jim will explore whether this is possible.
 - Present annual costs in terms of a per-unit value so that they can be extrapolated to other areas
 - Break down costs by public and private contributions.
- It seems that the report should also serve as a synopsis of the whole project. No other report will do this. To be a complete synopsis, some pieces will need to be added to the body of the report, such as summaries of the indicators/targets report and cost estimating methods/results.
Action: Jim will expand the report to include key findings and refer to other reports for details.
- To help decision-makers set priorities, Figures 15 and 16 from the SUSTAIN report should be added to the strategies implementation report to show readers the degree of stream flow and water quality degradation and the environmental benefit and costs of stormwater management for each catchment in the project area.
Action: Jim said that these figures have been revised and can be included in the report.
- The executive summary should explicitly state the target of stormwater management (beneficial uses of the watershed)—that is, what the money will buy. The report does not have to convince readers that implementing the programs will be worthwhile because regulations require implementation of stormwater management.
- It was suggested that the word “restore” be replaced with some other word like “improve” and that this word be defined. The streams will not be restored to fully forested conditions. The

report should include disclaimers indicating the study did not consider all factors (habitat, for example), just stream flow and water quality.

- A comment was made that public investment for inspection and enforcement will occur regardless of study conclusions (Conclusion 3).
- The report needs to include more information on the limitations of the study. It is a planning level assessment on a study area scale, not a list of feasible BMPs for specific projects in specific areas.
- In regard to climate change, the report should cite the analysis that was done as a part of this project and some of the limitations of the findings. For example, the climate change models agree on the effects on temperature but not on precipitation. Most, however, do show increases in the intensity of larger storm events. The implementation report should include a disclaimer to the effect that only extremes in increased precipitation were analyzed—not the other end of the spectrum (potential for changes in drought conditions). The ponds will likely need to be larger to accommodate increased precipitation, but we do not know how much larger. It was suggested that the term “adaptive management” be used to address these uncertainties.
- The difference between the second and fourth conclusions was not clear to some attendees. Conclusion 2 deals with new development and redevelopment through 2040 (covered in the study). Conclusion 4 deals with the potential for continued new development and redevelopment beyond 2040. It is difficult to determine how development beyond 2040 will affect implementation of stormwater management facilities because of the different requirements for redevelopment projects with over and under 2,000 square feet of impervious surface, especially given the pressure to relax the rules on redevelopment.
Action: Move Conclusion 4 to below Conclusion 2 (Conclusion 4 becomes Conclusion 3.)
- It was suggested that the report make a recommendation that agencies explore the cost-effectiveness of building more regional stormwater facilities (detention ponds). Such facilities would likely not reduce capital costs but could reduce other costs.
- The report should be scrubbed of value judgments such as “substantial” when discussing costs. Rather, describe the factors in the study that could result in over or under estimation of costs.
- In Section 4.2 of the report, it should be noted that adding facilities to retrofit is not less expensive than existing facilities.
- The report could cite the NOAA study on coho salmon to help policy makers weigh the urgency of stormwater management for redevelopment.
- The conclusions and recommendations section of the report could be enhanced to include a recommendation that jurisdictions use the findings as a basis for assessing their own areas and

to include a conclusion on B-IBI improvements in terms of qualitative labels, such as “poor,” “good,” and so forth.

Action: Submit written comments on the strategies implementation report to Jim by January 24.

SUSTAIN Modeling Results and Revised Draft Report

The revised draft report is ready for project management team review. Olivia Wright distributed a handout and described SUSTAIN (System for Urban Stormwater Treatment and Analysis Integration) modeling results. Highlights of the presentation are as follows:

- Results presented in the previous draft have not changed. Since then, catchment area results were scaled to future land use cover of the study area through 2040 for three stormwater treatment scenarios: (1) required mitigation for new and redevelopment, (2) required mitigation plus additional treatment of roads and highways, and (3) full mitigation of developed lands. Results are presented in terms of the following:
 - Type and number of BMPs.
 - Stream flow and other indicators after BMPs (loadings of TSS and total copper and zinc).
 - Potential B-IBI improvement vs. HPC, HPR, and PEAK:BASE improvement.
 - Estimated capital, O&M, and inspection and enforcement (I&E) costs.
- Conclusions and recommendations are as follows:
 - Full mitigation could reduce hydrologic indicator values and medians close to forested conditions.
 - Treatment of road areas added a small improvement in indicator values and B-IBI scores.
 - Program lifecycle costs ranged from \$2.3 billion for required mitigation to \$6.8 billion for full mitigation.
 - Project-specific analyses are recommended to determine BMPs, costs, and so forth.

The management team posed the following questions, suggestions, and comments:

- Titles of graphs and figures need to indicate that the results are for 2040.
- Results shown on graphs could also be shown on maps of the study area.
- It would be better to label the mitigation-only scenario as “required redevelopment.”
- Current conditions (2007) should be added to graphs and maps of results.

- The method for calculating pollutant loads should be described, including why total copper and zinc were used rather than dissolved values.
- Q: Why not show results for copper and zinc in terms of risk of exceedance?
A: No exceedances were predicted under current and worst-case scenarios.
Action: The report will explain why total copper and zinc were used and why risk of exceedance was not used to predict results.
- In addition to current conditions, fully forested conditions should be added to the B-IBI graphs and maps of results. Also, set upper and lower bounds for B-IBI. The lower limit should be 10.
- The relationship of PEAK:BASE and B-IBI is shown as a probability. Although the correlation is weaker than for HPC and HPR vs. B-IBI, it does indicate a similar pattern and therefore is included. The maximum is defined as fully forested.
- It would help to include a qualitative description in the report of B-IBI improvements in terms of fair, good, and so forth. These descriptors should be used on the potential B-IBI maps too.
- As recommended earlier, a map should be added that shows current conditions of B-IBI, and all maps should delete B-IBI values below 10. The map could include actual data points.
- Questions arose regarding the proposal to ground-truth benthos data for Soos Creek. For example, what if measured and modeled values for existing conditions widely vary? Will it raise questions about all modeled data? Jim said that they are still working on developing a methodology for this effort.
- The table showing stormwater program costs for “required mitigation only” generated much discussion, primarily around assumptions used to develop the estimates:
 - Clarifications: Only parcels were considered in developing costs; roadside bio-retention was not considered for new and redevelopment.
 - It was suggested that the terms new and redevelopment be defined in the report and that these terms be added to the table title.
 - The I&E costs shown are public costs. I&E costs for detention ponds need to be added to the table. (Detention pond I&E costs for road and highway mitigation, however, are included in O&M costs.)
- Suggestions, questions, and clarifications regarding the table that summarizes program costs are as follows:
 - Show costs in millions rather than billions to be consistent with costs presented in the tables for each scenario.
 - Should costs be shown as cost per acre?

- Clarification: The costs are a subset of all costs. They are costs for the public stormwater program only (not total private and public costs).
- Q: Why is the cost for full mitigation \$6.8 billion here and \$7.8 billion in the previous draft of the report?
A: **Action:** Olivia will look into the discrepancy.
- The raw data should be made available to the public. It was suggested that it be posted in a downloadable form on the Web.
- The number of detention ponds for new and redevelopment seems high. It was reiterated that this is just a label and that each site may use other BMPs. Ponds would be used only for developments over 10,000 square feet. The report needs to emphasize that the model analyzed the cumulative impact of BMPs.

Action: Submit written comments on the SUSTAIN report to Olivia by January 24.

Assessment of Stormwater Mitigation by 2040 for New and Redevelopment— Revised Draft Report

Jeff Burkey will incorporate comments on the draft mitigation report and distribute the revised draft to the management team in about two weeks.

Report on Uncertainty of Climate Change Impacts on Mitigation Needs

The report on climate change impacts will be distributed to the management team next week.

Update on Assessment of Existing Stormwater Facilities in Study Area

Jeff Burkey is modeling the study area for stream flow and water quality indicators assuming there are no BMPS in place and then comparing results with actual indicator values to determine the effects of existing BMPs.

Dr. Horner is researching data on type, storage volume, and age of BMPs in the Des Moines, Miller/Walker, and Covington creek basins in order to estimate BMPs in the whole study area. He will determine the ratio of storage vs. catchment area. Then, the estimated need in the study area can be adjusted by what is already in place.

A draft report will be distributed to the management team in a few weeks.

Fourth and Final Stakeholder Workshop

The final stakeholder workshop is scheduled for February 27. Reports will be distributed to stakeholders in February sometime before the workshop. The management team offered the following suggestions for what should and should not be included in the workshop:

- Direct the workshop messages to elected officials and representatives from local jurisdictions.

- Stay focused on high-level analysis and results—not fine-grained discussions of methodology. Provide participants with pathways to reports and other detailed information.
- Focus on moving forward into the future, not on what has already been done.
- Ask for input on messaging, how information will be used, and gaps—and for additional observations and needs for clarification. How useful is the presentation of data for their purposes?
- Mention that the study provides a framework for improving conditions and an impetus for regional involvement. Meeting regulations takes us only so far. Stress the benefits of proactively implementing stormwater management rather than waiting for developers to do so.
- Stress that the main purpose of the SUSTAIN report is to say whether or not the model worked. We need to tell participants what we think.
- Let the stakeholders address policy questions.
- Resolve the question of whether results should be extrapolated to the Puget Sound region. There may not be enough time to do this.

Upcoming Management Team Meetings and Completion of Final Reports

One more management team meeting will be held in April or May. All reports will be completed by the end of May or early June.