**SWG 6PPD Subgroup Meeting**October 6, 2022 from 1-2:30pm

Participants: Aaron Clark, Aimee Navickis-Brasch, Alyssa Barton, Amanda Royal, Angela Bolton, Austin Jenking, Abby Barnes, David Batts, Brian Muegge, Carol Maloy, Hannah Coe, Matt Cox, Dan Kent, Dan Shapiro, Dana Zlateff, David Varner, Dana Deleon, Jerry Diamond, Karen Dinicola, Dylan Ahearn, Mike Ehlebracht, Sherell Ehlers, Emma Trewhitt, Mary Engels, Gretched Tellessen, Laura Haren, Heather Trim, Elizabeth Herrmann, John Herrmann, hilde201, Doug Howie, Todd Hunsdorfer, Melissa Ivancevich, Jamie McNutt, Jana Crawford, Jeff Vanderpham, Jennifer Schmitz, Jessica Smith, Joe Kalmar, Jose Carrasquero, Jenna Judge, Julia, Juliana Andrade, Iris Kemp, Larry F, Mallory Little, Lizbeth, Lori Blair, Brandi Lubliner, Eli Mackiewicz, Mark Maurer, Margaret McCauley, Bob McKane, Michelle Perdue, Doug Navetski, Le Nguyen, [noah@highwayfuel.com](mailto:noah@highwayfuel.com), Rachel Bowen, Rachel Konrady, Katie Rathmell, Rob Zizette, Erika Shaffer, Stefan Grozev, Stephen Conroy, Abbey Stockwell, Susan Bator, Kelly Swindle, Taylor Hoffman-Ballard, Torrey Lindbo, Misha Vakoc, Amy Waterman, Nicholas Wegener, Jennifer White, Dean Wilson, Zack Holt, Angela Zeigenfuse

**Introductions**

*-Eli reviewed role and history of 6PPD Subgroup*

*-Amy went over agenda and introduced Morgan Baker, new Ecology staff person who will be supporting 6PPD group in future.*

**Ecology update**

*Discussion on Ecology’s Water Quality Program activities re 6PPD/Q:*

* *Legislative proviso report due November 1st, 2022:* 
  + *Reviews underway on legislature requested report on spatial prioritization and BMPs to treat 6PPD/q. Will contain the commissioned consultant report on* [*Stormwater Treatment of Tire Contaminants - Best Management Practices Effectiveness*](https://fortress.wa.gov/ecy/ezshare/wq/Permits/Flare/2019SWMMWW/Content/Resources/DocsForDownload/2022_SWTreatmentOfTireContaminants-BMPEffectiveness.pdf) *as an appendix.*
  + *The consultant is extended for a few more tasks such as: prepare a webinar on their report findings, take a look at particle sizes entering BMPs, and to help with this subgroup for 3 meetings. Evergreen StormH20 is also working on literature search study on particle size distribution of influent concentrations as part of a SAM study.*
* *Leveraged 2 SAM studies to add work:* 
  + *Ecology added 3 water years to the SAM longevity of bioretention soil mix to prevent coho toxicity;*
  + *Ecology added 6PPD-q sample analysis to Redmond’s Paired Watershed’s sweeping effectiveness study in small streams.*
* *Hired 1 of 2 planned staff to coordinate this work and grow our capacity to run a BMP evaluation and testing program for toxic organics. Ecology is receiving funding inquiries for active and new BMP studies. We are working with a few of the ideas and will share next time any new funded projects. From the legislature we asked for continued funding (beyond one-year) to solicit and fund studies on 6PPD-quinone and tire wear management.*
* *EAP and HWTR (2 other programs at Ecology) have also asked for continued funding to work on geographic priority mapping and research on tire alternatives.*
* [*Stormwater SIL RFP*](https://pugetsoundestuary.wa.gov/stormwater-sil-rfp/)*: Public Road Retrofits Planning by Local Jurisdictions; closes November 9. SW Applicant Webinar October 18, 10-11:30.*
* *Ecology is considering 6PPD and impacts from roads as we update and revise the Manuals and Permits.*

**Research priorities lists and SAM’s draft Round 4 topic list**

*Discussed the few available lists for projects/research priorities:*

* *Consultant report (link above) has recommendations for confirming certain physicochemical properties and BMPs for effectiveness to reduce tire wear/toxicity.*
* *University priorities provided to Ecology as memos in Appendix C of the legislative report,* [*UW*](https://www.ezview.wa.gov/Portals/_1962/Documents/StormwaterWorkGroup/UWT_CUW%20Memos.pdf) *and* [*WSU*](https://www.ezview.wa.gov/Portals/_1962/Documents/StormwaterWorkGroup/WSUP_SWC%20Memo.pdf)*.*
* *The study group did not make any new suggestions for SAM studies draft* [*Round 4 topics list*](https://www.ezview.wa.gov/Portals/_1962/Documents/StormwaterWorkGroup/FINAL%20Round%204%20SAM%20Study%20Topic%20Proposal%20List.pdf)*. Brandi shared that more than one study on a topic is okay, if it works out that way. Eli looked back on 6PPD Subgroup recommendations and noted that all four of the recommendations for SAM research from this group are included on the SAM Study Selection Subgroup’s topic list. Other discussions about this list:*
  + *King County is well positioned to evaluate the HPBSM for reduction of 6PPDq (number 6 on SAM Round 4 list).*
  + *Discussion on the reported 6PPDq half-life (varies widely) and detention BMPs being effective. EPA’s EPI Suite model reports 900hrs and Hiki et al reports ~30hrs. Different researchers are claiming vastly different half-life values and that will impact recommendations on stormwater management BMPs. Aimee Navickis-Brasch shared that detention ponds were rated as medium effectiveness in the consultant report (link above), the retention time of detention ponds is short compared to the model-estimated half-life of 6PPDq; most ponds retain water for only a few days if not designed with wet pool.*
  + *Todd noted that there are additional 6PPD research topics in the last category of the list (number 15 & 17).*
  + *There were questions from group about whether existing BMP’s will be studied for their effectiveness and they will be (number 5).*

**Other updates on research or planned projects**

* + *Valerie Chu (USFWS) asked where to get funding to study microplastics and 6PPD. Discussion about how tire wear and 6PPD/q acts more like microplastics than metals, bacteria, or TSS.*
  + *Stephanie Truitt (King County) is working on WQBE, a modelling effort, to ID hotspots on Whidbey by looking at roadway types and runoff volumes. In 2023, they will be looking at stormwater and in stream concentrations and are asking for any data on surface water concentrations for use in LPSC.*
  + *Dana de Leon (Tacoma) is working on an application for a second phase of a grant based around locating retrofits for a number of pollutants using the Nature Conservancy stormwater heat map in first phase of project. Using passive stormwater suspended sediment samplers and a lab in California for analysis. In second phase they would expand and validate model for 6PPDq and tire wear particles (TWP). They are focused on non-structural BMP’s, i.e. street cleaning and line cleaning.*
  + *Katie Holzer (Oregon DEQ) is adding 6PPDq to a couple BMP projects, pervious pavements and constructed wetlands.*
  + *Sandra O’Neill (WDFW) plans to analyze juvenile coho tissue and caged mussel tissue for 6PPDq using NOAA method. They are also planning to measure concentrations in blood plasma and bile samples they already have. The contact would be Irv Shultz.*
  + *The LC50 for chinook and coho that they are finding is lower than Jen McIntyre’s. A new study about to be published out of Canada Dept Fisheries and Oceans indicates chinook are not likely impacted by 6PPDq; a much higher LC50 than coho. This study by DFO has been submitted to Environmental Toxicology and Chemistry, with work led by PhD B. Lo working alongside Tanya Brown.*
  + *King County (Dean Wilson) is working with UW Tacoma on CEC’s with NEP funding. They have been looking for wide variety of chemicals in big rivers including 6PPDq. With new additional funding they are looking at 6PPDq in wadable streams.*
  + *Eli Mackiewicz (City of Bellingham) is building a predictive model to identify hot spots in their priority watersheds. One priority watershed has 245 outfalls; they want to be able to predict which have most 6PPDq and are waiting for more research findings to dial in model.*
  + *Craig Manahan (Ecology’s Hazardous Waste Program) are testing toxicity of tire alternatives using rainbow trout and coho.*
  + *Brad Archibald (WSDOT) shared that future BMP studies will include 6PPDq and they would like to coordinate with others.*
  + *Jamie McNutt (US Tires) shared they are working on a state of knowledge report on TWP – before and after they are generated. This is being done by Carnegie Mellon and the Fraunhofer Institute. Tire inflation is being considered as one way to minimize generation. Shawn Dixon noted in chat there could be equity concerns with individuals bearing the cost of tire inflation.*
  + *DNR is finishing an assessment on tire reef status and plans for removal in Puget Sound. They will be working with partners to remove tires and would like to analyze sediment under tires. There are 14-20 “large” tire reefs in Puget Sound (those that contain over 10,000 tires).*

**Future Topics for Subgroup**

* *Ecology currently has plans to support another 3 meetings to keep sharing information across the region and informing both Ecology and SAM study ideas to fill priority stormwater management data gaps.*
* *Proposed topics for future meeting development: Proviso report Q&A, Updates from researchers, Evergreen StormH20 webinar/how to use information, EPA lab testing/accreditation progress, DNR tire reef removal, Legislative activity on 6PPDq.*
* *Other feedback on topic ideas:*
* *Source Control topics both under MS4 permits and outside of those permits like, removal of tire reefs and public education*
* *For Evergreen StormH2O webinar or other forum:* 
  + *how planners and engineers are to take the next step and implement some of the consultant report recommendations at new/redevelopment sites.*
* *MS4 permits reissuance and 6PPDq*
* *ESA permitting*
  + *possibly bringing in NOAA/NMFS and local municipalities about permitting, ESA, stormwater challenges and when and where mitigation will be required*
* *6PPDq – status of lab analysis accreditation. Update from EPA on standard method development and research update related to the Puget Sound Action Plan. Catherine Gockel offered to do EPA update.*
* *Presentation on old tires and questions of 6PPD migration out of tires, into sediment, under water; is 6PPD still there in old tire reefs?*

**Wrap-Up**

* *Amy asked for feedback for those that participate in SWG on communication: “How do you get most of your SWG news? Which communications seem repetitive? Are there ones that you don’t bother to open?” Contact* [*Amy*](mailto:amy.waterman@ecy.wa.gov) *with feedback before November 16 SWG meeting.*
* *Subgroup will meet in the first quarter of 2023.*

**LINKS FROM THE MEETING**:

* SAM Study Selection Subgroup’s Round 4 Proposed Study List: <https://www.ezview.wa.gov/Portals/_1962/Documents/StormwaterWorkGroup/FINAL%20Round%204%20SAM%20Study%20Topic%20Proposal%20List.pdf>
* Final Stormwater SIL Retrofits Solicitation <https://pspwa.app.box.com/s/dp43ft3pcbfv9xzl4ftuhuu0ehpv4fgr>
* King County’s modelling of roadway types and runoff volumes to identify hotspots: [www.kingcounty.gov/wqbe](http://www.kingcounty.gov/wqbe)
* Lab doing 6PPD testing that some people are using, Eurofins Environment Testing USA: <https://www.eurofinsus.com/environment-testing/>
* Research on Atlantic salmon and brown trout: <https://setac.onlinelibrary.wiley.com/doi/abs/10.1002/etc.5487>