

6PPD Topic Group White Paper

Co-Leads Melissa Ivancevich Melissa.Ivancevich@seattle.gov
 Doug Navetski Doug.Navetski@kingcounty.gov

The following report contains issues identified and recommendations by the 6PPD topic group. The report is organized into topics, explanations of the issue, comments made during the meetings, and recommended adjustments or requests.

1. Section 8, Monitoring and Assessment

The group identified the need for additional research in order to move ahead on controlling the pollutant 6PPD- Q. There are currently a number of areas that need additional research, including fate and transport, sub-lethal effect on various species, treatment and source control. Permittees need more information to effectively control 6PPD sources, address legacy loads and develop treatment options. It's critical that the limited municipal resources available are effectively utilized, and Best Management Practices be developed and implemented efficiently. Some of the areas of concern/interest include:

- a) The group identified the SWG 6PPD subgroup as the nexus for information on 6PPD. Route communications and discoveries through SAM.
- b) There are questions about whether compost filter material is the most effective treatment method. Can other filter media be as effective and not be a source of nutrient pollution?
- c) There are conflicting studies about 6PPD persistence in the environment and if it persists after the first flush events. Are legacy loads an issue that would require extensive cleanout of the MS4 system?
 1. What is the potential importance of catch basin vactoring? Are tire wear particles captured in catch basins a source of 6PPDQ?
- d) As an initial step, could street sweeping be an effective source control BMP?
 1. Would it be more effective to prioritize areas that discharge directly into streams?
 2. Focus on potential higher-concentration areas such as stream crossings, rumble strips, curves, braking, and curb hit areas. Tacoma has a study that shows catch basin sediments have higher concentrations of chemicals associated with cars at drive-thrus.
 3. Timing (e.g. coho spawning season and prior to storms following long dry periods with largest first flush concentrations) may also be important for sweeping effectiveness.
 4. Could previous studies be valuable in identifying areas where concentrations of 6PPD might accumulate (i.e., King County's Roads HotSpot study)?
- e) To meet current regulatory standards, municipalities need EPA-approved and affordable testing methods. These tests are needed for various aspects of the issue including to determine levels of concern per outfall, effectiveness of treatment systems, and to determine needed maintenance practices.
 1. Need EPA testing approval, analytical standard method for benchmarks, or can we get agreement on levels of concern?
 2. SAM grant to fund methodology study?
- f) Do other parameters affect 6PPD's effects?
- g) Want to have a better understanding of the fate & transport of the chemical. What impact does environmental exposure like sunlight do to the speciation?
- h) What are the toxicological impacts to the marine environment?
- i) Is it possible to include a moratorium for installing ball fields, or any other infrastructure (e.g. electron dam?) that include tire rubber? Or a product replacement approach using an approved list of infill materials?
 1. Potential criteria: if there is potential to discharge to surface waters or for rubber to be physically transported to surface waters.
- j) There are concerns regarding the cost of sampling, scaling/proportionality for smaller communities with limited resources, and the timing and quantity of sampling.
- k) Concerns were expressed about not getting discoveries and solutions into the permit in a timely manner. The current method is to fold new requirements into the permit every 5 years. There was support to have

a permit modification process to adopt actions to address 6PPD mid-cycle of the permit, if appropriate, based on findings from SAM-funded studies.

Recommended Solutions:

- Support the SWG 6PPD Subgroup and route communications and discoveries through SAM.
- More research needs to be funded and conducted to have an accurate picture of the extent and level of impact of this pollutant. Recommend SAM grant funding program prioritize studies on 6PPD, impacts and treatment.
- More research needs to be funded regarding sources, potential BMPs, and maintenance requirements.
 - Need more research on sources. Tire storage, building materials, buried, etc.
 - Study recently installed bioretention systems to see if they are effective as a control for 6PPD.
 - Study retrofitting current stormwater treatment systems. Do current types of green/grey treatment systems remove 6PPD?
 - Could some BMPs be effectively implemented seasonally?
 - Study effectiveness of street sweeping in removing 6PPD.
 - Look at using modeling (i.e., King County's Roads HotSpot study) to identify high priority areas and high priority timing.
- Develop a product replacement approach using an approved list of infill materials. Establish a deadline for replacement of turf fields that contain crumb rubber? Potential criteria: if there is potential to discharge to surface waters or for rubber to be physically transported to surface waters.
- Study using the permit modification process to add new 6PPD solutions to the permit.

2. Phase I Section S5.C.2 MS4 Mapping and Documentation

- a) Would a vulnerability study be of value? Mapping for high potential impact locations such as road crossings, sports fields, etc. help identify locations to install treatment facilities (i.e., King County's Roads HotSpot Application).
- b) Mapping should be a regional effort rather than a separate effort by municipalities to capture a watershed picture rather than separate municipalities.
- c) Regulatory authority ends at outfalls. Receiving waters are outside the authority of the Permit. It shouldn't be a mapping requirement in the Permit.
- d) There is a prioritization-based approach to general stormwater impacts but seems like an efficient way of finding trouble sites statewide: <https://www.youtube.com/watch?v=Ng2FacZ4-LY>

Recommended Solutions:

- Recommend actions outside of the permit, such as regional mapping to identify coho-bearing streams and 6PPD-impaired streams (coordinate with WDFW mapping).
- Identify outfalls that discharge to coho streams.
- Identify 6PPD impaired water bodies and incentivize SMAPs for those water bodies.

3. Phase I Section S5.C.8, Structural Stormwater Controls

1. Some municipalities would be happy to implement proven technologies as budget cycles allowed; other municipalities don't have the resources to implement quickly.
2. Funding opportunities would expedite implementing technologies as they're developed and proven effective.
3. Incentivize to build treatment systems, pilot systems. Source control could be challenging. Extra point concept? When mandating some other municipalities don't have resources to fund.
4. Some would be happy to implement proven technologies but wouldn't want them to be sudden surprises – wouldn't want it mandated. Budget cycle allowance to fund quickly without heartache.

Recommended solutions:

- Prioritize 6PPD pilot treatment facilities by increasing the points awarded to a 6PPD SSC project by increasing the multiplier.

5. Section S5.C.11, Education and Outreach Program

- a) Some of the challenges anticipated include motivating drivers to move their cars to allow sweepers to access the curb to clean the roads. Could Ecology spearhead a campaign to educate car owners to move their cars?
- b) Could outreach efforts on this subject be paired with currently mandated commute trip reduction efforts for air pollution or transit promotion efforts?

Recommended solutions:

- Include 6PPD as a general awareness topic.
 - Target audiences include the general public, businesses including tire storage, sales and recycling operations, and municipal government officials.

6. Funding

- a) Could SAM potentially fund Operation & Maintenance studies?
- b) Could a funding mechanism be put in place for source control, replacing sources?
- c) Is there a funding mechanism we could use to replace ball fields? And what would we replace them with?
No data available on this.
- d) Concerns may also fall outside of salmon waterways; we don't know how it affects other species.
- e) Recognize that any solutions need to be aware of municipal funding cycles, most jurisdictions are on a biennial cycle and some capital programs plan funding program commitments to projects lasting multiple years.

Recommended Solutions:

- Access funding (legislative and new federal funding for salmon recovery) for 6PPD related studies.
- Prioritize 6PPD-related studies in grant processes.