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Waste Action Project • Surfrider Foundation • Center for Environmental Law and Policy •  
Orca Network • Sound Action • Zero Waste Washington • Defenders of Wildlife • Olympic  
Environmental Council • Deschutes Estuary Restoration Team • Green River Coalition •  
Georgetown Community Council • Sierra Club Washington State Chapter**

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**Re: Comments on the proposed Phase I and II Municipal Stormwater Permits**

To Whom it May Concern:

On behalf of Puget Soundkeeper and the organizations listed above, we submit these comments on the Washington Department of Ecology (“Ecology”) Proposed Phase I and Phase II Municipal Stormwater (“MS4”) General Permits. Our organizations have been working for decades to enhance and protect surface waters across the state burdened by degradation, riparian habitat loss, climate change, and a host of other impacts. Stormwater pollution is a key driver of the decline of our water quality statewide. In the Puget Sound, stormwater is the top source of toxic pollution. Pollutants found in MS4 discharges are causing acute salmon mortality, burying nearshore habitats in suspended sediments and plastic pollution, facilitating oil and heavy metal propagation throughout the region, and are diminishing our watersheds’ capacity for climate adaptation and resilience.

Our organizations respectfully request and direct Ecology to reconfigure the draft permit to fully ensure that any covered permittees are working to achieve, to the maximum extent practicable, attainment of our water quality standards. Furthermore, we expect Ecology to ensure that permittees are deploying all known, available, and reasonable technologies (“AKART”) to ensure that no discharges cause or contribute to violations of water quality standards. The following comments<sup>1</sup> are intended to further strengthen the permit's ability to effectively manage stormwater pollution, including that from 6PPD and 6PPD-quinone (together, “6PPD/Q”), and protect our valuable water resources.

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<sup>1</sup> These comments rely on and incorporate the comments submitted by Earthjustice on behalf of Puget Soundkeeper by reference herein.

We appreciate all the work Ecology has done to develop this proposed draft and expect these comments to lead to a well-defined and responsible final permit consistent with the Clean Water Act and Washington State's standards.

## **6PPD/Q**

Despite decades of knowing the problem and the solution, urban mortality from stormwater, and specifically requirements to control the discharge of 6PPD/Q, is addressed nowhere in the draft permits. In fact, a search of the permit for the term "salmon" turns up one instance of "salmonids" in the street sweeping section, and one note about salmonberries in the native vegetation definition. This continuing and complete lack of AKART to limit the discharge of this pollutant and the fact that there is a crisis for salmon in Puget Sound is unacceptable and contrary to law. In its own Fact Sheet Ecology states that:

"Based on what we have learned to date, many of the stormwater BMPs already implemented to comply with the Permits and Ecology's stormwater manuals (e.g., bioretention, infiltration, etc.), are presumed to be effective at capturing and treating 6PPD-q. ... Street sweeping and cleaning roadside ditches, catch basins, and storm drains were source control BMPs that were ranked as having a high potential of preventing 6PPD and 6PPD-quinone from entering waterways. ... Bioretention soil mixes were the only [runoff treatment] BMP in the literature reported to reduce 6PPD-quinone exposure and mortality in fish. Other runoff treatment BMPs, like sorbent medias and media filters, are ranked as likely to have high effectiveness."

Ecology goes on to claim, with no supporting information or basis, that the draft permits' updated SWMP "requirements will provide benefits to address road and tire wear sources." (See Fact Sheet, page 44). Ecology also conflates tire wear particles with the general problem of 6PPD-quinone such that the indicated updated SWMP requirements don't actually apply to the entire toxicity crisis. Biofiltration is AKART for 6PPD/Q and the permit fails to meet this legal standard.

These comments also rely on and incorporate by reference Soundkeeper's separately submitted comments on this issue. Our organizations request Ecology issue a final permit that tackles the 6PPD/Q crisis directly, robustly, and in a timely manner, as required by law. Inaction, or even operating under the assumptions made in this fact sheet about what permittees could do (as opposed to *must* do), runs counter to stormwater management and the law.

## **Strengthen Public Involvement and Streamline Access to Information**

Transparency and ongoing public engagement are crucial for effective management of our MS4s and achieving clean waterways. Because MS4s cover the stormwater management of government and quasi-government entities, the public has a considerable interest in staying up to date on plans and implementation. Permittees' Stormwater Management Plans ("SWMP") (and documents related to SWMP implementation, such as SMED data, SMAPs, outfall maps, S4 notifications, and handbooks) must be easily accessible.

The current draft sets as a requirement that permittees involve the public in many aspects of stormwater planning (Section S5.C.4 requires that Permittees "provide ongoing opportunities for public involvement and participation in the Permittee's SWMP and implementation priorities."). Ostensibly to help meet this goal, the permit requires permittees post their SWMPs and Annual Reports online, by May 31 of each year (Section S5.C.4) and make "all records related to this Permit and the Permittee's SWMP available to the public at reasonable times during business hours" (Section S9.C).

Largely, though, that is where access to information becomes cloudy. This draft does not require Permittees to report all details used for stormwater management (e.g., S5.C.2's requirement that tributaries be identified but includes no requirement to report them). Thus, it fails to ensure that the public is apprised of all information related to stormwater management and planning. Congress identified public participation rights as a critical means of advancing the goals of the Clean Water Act in its primary statement of the Act's approach and philosophy. *See* 33 U.S.C. 1251(e); *Environmental Defense Ctr., v. U.S. EPA* 344 F.3d 832 (9th Cir. 2003). Documents containing substantive information about how MS4s will reduce discharges to the MEP or using AKART must be publicly available and subject to public hearing requirements in order to comply with express requirements of the CWA. *Id.*

Moreover, it is not clear in these permits whether Ecology intends for public input and engagement each time a Permittee proposes modification to its permit. Ecology must include the public anytime a Permittee proposes modification to its permit. To use Ecology's expertise and resources efficiently and effectively, we insist that the timing of this public input take place after Ecology has the chance to weigh in on Permittee's proposed modification.

Lastly, Ecology provides broad flexibility – or a lack of direction entirely – in the format information should be provided in (e.g., in our read of the permit, the SWMP doesn't need to be posted in PDF format). Outside of the Ecology permit portal, itself notoriously difficult to navigate by even informed public stakeholders, there is no single place online where information is located – the permittees aren't directed to create portals that have clear links to their required documents, leaving interested members of the public without a clear way of finding permit

documents, outfall locations, or reports online. When looking at watersheds that cross into multiple permittee coverage areas, the task of comparing stormwater plans or outfall locations across the websites or portals of different municipalities can become quite burdensome – especially when a waterway includes a mix of both Phase I and Phase II permittees. Ecology should require a standardized format (e.g., PDF) for all public reference documents, build a state-hosted MS4 website where those materials can also be found, ensure that mapped outfalls are all collected in the same format and found on one statewide interactive map, and require that permittees post documentation of any S4 submissions (or other adaptive management notifications) along with all other permit materials to comply with public participation requirements guaranteed by law and confirmed by precedent.

### **Construction Site Stormwater Control**

An effective construction stormwater runoff control program minimizes or eliminates erosion and maintains sediment on site so that it is not transported in stormwater and allowed to discharge to a water of the U.S. through the Permittee’s MS4. The final permits can and should include more robust requirements to control discharges into the MS4 system from construction sites, direct permittees to ensure that construction activities do not violate water quality standards and provide them with program control requirements that meet the MEP and AKART standards.

According to page 39 of the Fact Sheet, construction site operators that are covered under and operating in compliance with the Construction Stormwater General Permit (“CSGP”) are assumed to “be in compliance with the construction site runoff control requirements of the Municipal Stormwater Permit.” When construction general permits apply, the MS4 Permit should not default to this “hands-off” approach.

We appreciate that the draft permits require a program that includes inspection during construction to verify proper installation and maintenance of required erosion and sediment controls (see S5.C.5.b.vi.c). However, the permit is too narrow when it limits the requirement for a Permittee to inspect all permanent stormwater treatment and flow control BMPs/facilities and catch basins in new residential developments every six months...” This should apply to all new developments. Also, compliance should not be determined by achieving 80% of required inspections annually; this likely does not meet MEP and AKART standards (see S5.C.5.b.vi.f).

The final permits should require both onsite and offsite (e.g., downstream, or downgradient within the stormwater system) inspections upon completion of construction and prior to final approval or occupancy to ensure proper installation of permanent stormwater facilities. Soils can be destabilized, BMPs can fall into disrepair, and newly-constructed site features can leach contamination – all in the short period of time after construction completion. The final permits must recognize that the condition construction sites are left in when

construction officially ends (and the CSGP no longer applies) will not necessarily represent site conditions over time, nor when a site is ultimately occupied and in use. Monitoring the durability of these sites' stormwater control measures should include efforts post-construction, and the final permit should assume that construction areas are stormwater runoff hotspots and require permittees plan for and include in their SWMPs proactive monitoring downstream for potential discharges from a likely source.

The draft permits (Section S5.C.5.b.iv) require permittees to adopt and make effective a local program regarding construction sites by July 1, 2026. This timeframe is too extensive. If this measure is intended to apply only to first-time permittees, the permit should clarify that is the case; all existing permittees should have these programs in place already. Also, Ecology should include a new criterion (Section S5.C.5.b.i - ii) that requires permittees also consider EJ areas (including overburdened communities) in their planning, to ensure community impacts are fully considered in decision-making.

We are disappointed that there are no minimum requirements to how non-secondary permittee staff must be trained to ensure implementation of the program to Control Stormwater Runoff from New Development, Redevelopment, and Construction Sites (see S5.C.5.b.viii). Ecology should include these in the final permits. For example, all staff whose primary job duties are implementing the program to control stormwater runoff from construction sites should be fully trained within the first six months of employment for new staff. Follow-up training should be required as needed and permittees must document and maintain records of the training provided and the staff trained.

Please include a reporting requirement where the permittee must summarize in each Annual Report for the relevant reporting period: any corrective actions taken at construction sites during the previous reporting period; number of site plans reviewed; site inspections conducted by the permittee, including the location and total number of such inspections and result/response; and one or more example of major follow-up action(s) conducted by the permittee, and/or any subsequent enforcement actions. The permittee must maintain records of relevant training provided or obtained, and the staff members trained. The final permits should similarly require permittees to document and report to Ecology sufficient enforcement mechanisms needed to ensure compliance with permit requirements no later than the reporting deadline for the first Annual Report.

Finally, no new construction activities can result in any new discharge outfalls or discharges of un-remediated stormwater to salmon streams, regardless of season. All BMPs which discharge to salmon streams must select projects using practices that have been shown to effectively reduce the pollutants and 6PPD/Q in stormwater discharge such as those detailed in

## **Environmental Justice**

These permits provide Ecology an opportunity to meaningfully address the environmental injustice that accompanies stormwater pollution. Ecology should look for ways throughout the permits to require *actual work* to *actually change* the *status quo* in overburdened communities, not simply inform and educate those communities during the pendency of this permit term. Just as there are incentives to design and implement mixed use development and affordable housing in overburdened areas, there should be incentives to design and implement stormwater controls in these same communities. All people have the right to clean water and a healthy environment, but it will always cost more to address pollution in historically overburdened areas than it will for those along an urban growth area. Ecology must require permittee actions that acknowledge and address the communities most directly impacted by historic, ongoing, and foreseeable stormwater pollution.

Overall, we suggest Ecology includes and incorporates EJ into each and every section of the permit. When choosing basins to focus on for stormwater action plans, or when looking at retrofit programs, EJ areas should be considered as priority investment areas. For new tree canopy programs, EJ areas with historically less shade trees, open space, or green infrastructure installations should be priorities for new plantings.

When considering new or redevelopment projects, equity and EJ should be required considerations for the permittee assessments of off-site mitigation alternatives. And in the development of plans for stormwater management at existing developments (“SMED”), environmental justice areas should be required elements of a SMED plan – not something solely “incentivized” (*only incentivized, somewhat shockingly, at the same level (1.5x points) as the multiplier obtained for finishing a project that was approved in a past permit cycle but never finished*).

In its final permit, Ecology should require permittees to conduct a community vulnerability assessment before determining their SWMP, and regularly update those over time. This type of approach will help identify communities that are most at risk from stormwater-related issues – a finding that can change over time. The final permit should require permittees to prioritize these areas in resilience-building efforts. Ecology should also facilitate an equitable distribution of monitoring resources. Distributing monitoring resources fairly will better aid collection of data on stormwater pollutants in overburdened communities.

Next, Washington State general permits must incorporate all known, available, and reasonable treatments and technologies, the “AKART” standard. We submit that in the permit’s required planning process, and the ultimate implementation and management of a permittee’s stormwater program, prioritizing action in EJ areas is AKART. Across the nation, especially in larger cities and other areas with overburdened communities, MS4 permits require permittees plan for stormwater of retrofit investments in EJ areas, prioritize deployment of structural and non-structural stormwater controls and green infrastructure in EJ areas, and require, generally, *more*. Ecology should require EJ prioritization – again, in both action and engagement – because doing so, across the nation, is standard practice.

In addition to requiring actual control of stormwater in overburdened communities, the permit’s engagement and inclusion requirements should be amended in the following ways. First, include an exception for identified overburdened communities when it comes to the “reasonable charge” permittees may assess for making photocopies of requested records. This is a simple adjustment that removes one barrier to access. Second, insert a reasonable maximum amount that permittees may charge the public for requested records. The public should be able to know exactly how much document production may cost in advance of making a request. Third, explicitly include “no charge” for electronic copies of records. Requiring Permittees to upload records to their website, as noted in an earlier section, would alleviate many of these record-access issues.

Along similar lines, the permit does little to address language barriers. True community engagement is impossible if the community does not understand the issues, process, and goals. Meaningful community engagement leads to innovative solutions that address the social, economic, and environmental aspects of stormwater management. In the draft permit, when implementing the education and outreach program, a Permittee is not required to deliver its selected message in a language other than English, Permittee must only “consider” delivering it in another language. Ecology must require Permittee to work with the community to determine if another language other than English is necessary for effective education and outreach, and then ensure such translations are provided – as a permit requirement.

For decades, including through the past several iterations of these permits, EJ communities have continued to bear disproportionate pollution burdens – and those impacts are getting more and more stark and more and more difficult to overcome. Absent a directive to change course, incentives alone will not suffice. Ecology must increase access to documentation and remove barriers, it must move beyond outreach and education and direct Permittees to prioritize retrofitting based on overburdened communities and in high priority areas. Permittees should be engaging with affected communities about the specific risks that community faces, sharing its steps for mitigation, and collaborating on innovative solutions to better control stormwater runoff.

## Additional Permit Improvements

Several other aspects of the draft permits should be reviewed for improvement, including the aspects discussed below. For each, and for the issues identified above, we again stress that the permits do not describe how Ecology can be sure that the implementation here will be done to the maximum extent practicable, and it doesn't describe what AKART is for MS4 systems. Furthermore, the permit provides ranges of potential action subject entirely to the discretion of the permittee which are not tied to or based on projected water quality outcomes or attainment of receiving water quality standards. For example, this permit would allow for some MS4 areas discharging to impaired receiving waters to see no retrofits installed, no street sweeping, and no new BMPs during the permit term. All permits must include as a requirement that all discharges be controlled to meet water quality standards. Other changes we strongly recommend for the final Phase I and II permits (including sections related to secondary permittees) are:

- a. *Failure to require AKART for discharges to impaired waters and a full accounting of TMDL requirements.*

The stormwater management plan fails to address discharges to impaired waters. Only for waters where there is a total maximum daily load ("TMDL") in place, a subset of impaired waterways, are additional controls required to meet those TMDL goals (see Appendix 2). The fact sheet states, "The stormwater management program required by these Permits is designed to reduce pollutants reaching stormwater and aims to make progress in preventing pollution and cleaning up water bodies impaired in part by stormwater discharges." However, individual permits do not "clean up" waterbodies. The requirement is that permittees conform to the requirements of a TMDL and that they not contribute to conditions that already violate water quality standards. Where a water is listed as impaired but is not subject to a TMDL, the permit must require AKART tailored to ensure discharges authorized by the permit do not contribute to that impaired condition. The final permit should either include a new Appendix<sup>2</sup> or place additional requirements in the permit itself that require enhanced efforts, planning, and stormwater management, mitigation, or reductions to waterways that are impaired but do not have TMDLs in place.

Moreover, section S7 declares that compliance with the permit "shall constitute compliance with those TMDLs" that are not listed in Appendix 2. This raises two issues. First, it would allow permittees to skirt requirements for an unknown and undescribed set of TMDLs. Second, this MS4 permit cannot say that compliance with its terms "shall constitute" compliance

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<sup>2</sup> See e.g., U.S. EPA Region 1's Small MS4 permit Appendix H – requirements for discharges to water quality limited waterways.

with other TMDLs absent a review of each of those other TMDLs and an assessment that such a finding is warranted. The final permit should eliminate assumptions related to TMDLs not listed in Appendix 2, state that permittees must comply with any TMDL requirements even if they are not listed in this permit and declare that MS4 permit compliance does not necessarily equate to or mean compliance with other water quality management programs.

*b. Mapping*

Our organizations thank Ecology for proposing key expansions to the mapping requirements across the three draft permits. We are in full support of Ecology requiring in the final permit that all mapping locations be reported to the agency, and that permittees “submit a map and breakdown of acres managed or unmanaged by stormwater treatment and flow control BMPs/facilities with the Annual Report.” Both requirements, and the expansion of mapping for all permittees regardless of size – will help move the MS4 program forward.

That said, we have a few concerns about the mapping programs that Ecology should consider as it develops a final permit. First, Ecology should clarify a disconnect between the fact sheet and the permit as it states in the fact sheet:

“As stated in previous permit cycles, Ecology proposes the minimum mapping standards in order to know the MS4 system .... Although the requirements are not explicit, Ecology expects that Permittees will also map structures such as catch basins and inlets to support their IDDE activities when they map tributary conveyances. This information would be particularly important for purposes of tracing illicit discharges and preventing harm from spills.” [emphasis added]

These expectations should be explicitly required in the final permit. This information is vital to the agency (it is “particularly important” after all), and thus must be required, not just expected.

Second, the draft permit’s requirements regarding the format of mapping information should be adjusted to provide for better public participation and achievement of water quality goals. For example, the permit allows data to be sent to Ecology in several formats, including ArcGIS, ESRI, or Shapefile. These formats are not easily accessible to the general public. As such, Ecology should consider requiring permittees to host publicly viewable online mapping portals and the agency should maintain a GIS dataset statewide that includes all reported outfalls sent to Ecology by MS4 permittees.

Third, the proposed timing is unacceptable. Permittees are given up until March 31, 2026, to submit locations of all known MS4 outfalls—which is an additional two years for a Permit requirement that has been in place since the previous Permit. Permittees should show evidence of

compliance within six months. Permittees are also given until 2027 to develop a methodology to map and assess – this task does not need three years. Ecology is also providing Permittees with four years to map out beyond the previously mapped area. This is arbitrary and a task that should be done concurrently with the other new mapping requirements.

Fourth, we respectfully request Ecology include EJ (including overburdened) and salmon stream information be included with the new mapping requirement breaking down acres with and without stormwater management. These new maps aren't due until the end of 2027 (which should also be moved up by Ecology to be required sooner), and, as stated by Ecology in the fact sheet, “unmanaged stormwater has likely permanently destroyed stream habitat in some urban areas of Puget Sound,” and obtaining information on managed/unmanaged areas is needed in order “to gather additional information about the area of land that may be in need of additional stormwater controls.” Given the salmon degradation caused by unmanaged stormwater, and the fact that these area maps will be used to inform adaptive management plans, the inclusion of salmon data and EJ information should be essential to these submissions.

*c. SMAP and SMED Program Changes*

Under the draft permit, a critical element of the SWMP is development of “a Stormwater Planning program to inform and assist in the development of policies and strategies as water quality management tools to protect receiving waters.” Through this process, permittees must think long-term, have a team of experts working collaboratively, set Low Impact Development standards, and create a Stormwater Management Action Plan (“SMAP”). The SMAP is designed to, first, tell Ecology how the permittee’s plans for structural stormwater controls during the last permit will inform SMED (see below) decisions being made during this permit term. The SMAP also requires permittees to dig deeper and, by the end of 2027, create a plan for a single new sub-basin or catchment area (or amend a previous area’s plan).

For the final permit, we ask that Ecology broaden this requirement to demand SMAP development for at least three sub-basins or catchment areas: one new or modified area (i.e., what the draft permit currently requires), one area that includes (in whole or significant part) EJ and overburdened communities, and one area that is a priority area for salmon protections (including from 6PPD/Q).<sup>3</sup> Significantly, we do not have the luxury of time, and cannot afford to let today’s permittees – with our mapping, engineering, modeling, and monitoring technology, no less – work through their watershed basins at best one area per permit cycle. Moreover, SMPA implementation must occur within the 2024-2029 Permit cycle.

By way of an example, the City of Tacoma’s SWMP section details their SMAP has not even identified which watersheds to prioritize through this process – and will not until it

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<sup>3</sup> Consistent with the comments submitted by Earthjustice on behalf of Puget Soundkeeper by reference herein.

completes community outreach in 2023 (i.e., this year). King County’s SMAP submission during the current permit term was a summary of their Bear Creek Watershed Plan; one (relatively small) sub-basin among 13 sub-basins with “Basin Stewards” working to develop such plans and a host of other watershed areas not represented by that stewardship program.

With such diversity in implementation, the final permits must detail how Ecology can be certain that AKART and MEP standards will be met, and that there will be progress “in the development of policies and strategies as water quality management tools to protect receiving waters.” Expansion of the SMAP program is warranted, and we suggest that the final permit requires all sub-basins to have a SMAP developed, submitted to the state, and implementation started by the end of the 2024 permit term.

Another critical program in the draft permit is on Stormwater Management for Existing Development (“SMED”). This program is designed “to prevent or reduce impacts to waters of the State caused by discharges from the MS4,” and is focused on “runoff from highways, streets and roads owned or operated by the Permittee” and areas of new development.

First, we support the decision to move non-structural stormwater controls out of the “shall consider” list (see section S5.C.7.a.i.). That said, we strongly suggest Ecology remove work done outside of the actual stormwater system (e.g., floodplain restoration) from the section on projects that a permittee “should consider” (see section S5.C.7.a.ii.). We make this recommendation out of concern for EJ areas and highly impervious areas of stormwater systems. Those areas tend to be in low-lying, high-density, and heavily zoned urban areas where SMED-type retrofits can be difficult to site and expensive to build and maintain. As such, allowing SMED program investments in forests, riparian areas, or other extant habitats may disincentivize investments in the areas and communities with the most need to reduce hardscape and control stormwater pollution.

Second, the final permit should change the fundamental structure of the SMED program’s point system because it does not meet the MEP standard and is not protective of communities, salmon, or water quality. As noted during stakeholder outreach, many permittees are already able to generate exceedingly more than 750 points of projects – calling into question whether setting the permit standard at 750 is AKART, or even MEP. If a point system will continue to be utilized, the Permit should require an increased number of points, to the level needed to meet water quality standards to the MEP and AKART standards.

Ecology provides no rationale for how 750 points will be protective of water quality or meet MEP and AKART standards – either as a standalone question or in concert with the rest of the permit’s requirements. In the Fact Sheet, Ecology simply states that the number of points will be higher than the previous permit, cites public and stakeholder input on the topic, notes that this

is their best professional judgment, and claims – without any analysis, data, review, or discussion, that this point total is MEP and AKART. Indeed, the language in the Fact Sheet touching on the selection of 750 as the minimum point target indicates the decision was one of convenience, not water quality necessity (“Points to be achieved must be both goal-oriented and reasonable.” “This Permit cycle’s minimum point requirements reflect the ongoing nature of the program.”). The Fact Sheet goes on to state:

“As the Structural Stormwater Controls Science Review and Synthesis Project White Paper (2021), produced by the Structural Stormwater Control Technical Advisory Committee, concluded, it is very difficult to demonstrate a measurable improvement to receiving waters from individual retrofit project types included in Appendix 12 of the Permit. However, this study concluded that ‘cumulative effect of multiple projects should result in measurable improvements.’ This study concluded that any project that benefits receiving waters is ‘making a difference’ towards improving receiving water conditions.”

We agree with the conclusion that any project benefitting receiving waters is “making a difference.” We take issue, however, with Ecology’s seeming reliance on an illegal standard; “should result in measurable improvements” is not the same as “reduce the discharge of pollutants to the Maximum Extent Practicable” (see section S4.C). Moreover, Ecology cannot say that “300 complete/maintenance-stage points” is equivalent to the use of “All Known, Available, and Reasonable methods of prevention, control, and Treatment to prevent and control pollution of waters of the State of Washington” (see section S4.D). In sum, improvements are not action to the MEP standard, and 300 points – especially for permittees already submitting more points than that – is not AKART.

Third, any final permit SMED program should be amended to better protect salmon waterways and EJ areas. While Ecology has detailed how the points minimums should be met with respect to design stage projects and completion or maintenance stage projects, it fails to provide a minimum number of points for either stage within or directly benefiting an EJ area or priority salmon area. We suggest requiring such minimums here, to achieve the equity and salmon protection goals discussed throughout these comments.

Finally, we reiterate a concern that point multipliers actually hurt investments in clean water protections and stormwater retrofits by diluting the level of effort that would otherwise be made by a permittee. Ecology should depart from a multiplier-based system of encouraging permittees to focus on certain projects over others (e.g., LID programs over forest cover restoration). Instead, Ecology should simply require more of the preferred projects compared to those projects with lesser or low benefits to stormwater pollution control.

*d. Street Sweeping*

First and foremost, street sweeping is a standard practice and should be implemented on a robust and comprehensive basis in all MS4 areas. Street sweeping is not, however, AKART for 6PPD/Q. Biofiltration is AKART for this issue and Ecology's insistence that street sweeping addresses this issue is inappropriate. These comments rely on and incorporate Soundkeeper's separately submitted comments on this issue.

Next, Ecology should clarify that street sweeping does not inherently include any treatment. Second, street sweeping is a standard practice and industrial and commercial sites and in cities across the planet and permittees should develop a street sweeping plan by 2025. Furthermore, under the permit sections and appendices controlling street wash water and decant fluid from sweeping trucks, polluted water from trucks may be discharged into the MS4 system. There is one "clear" fluid standard identified, which has no basis in law and is meaninglessly unenforceable in terms of water quality standards.<sup>4</sup> Finally, discharge of decant fluid is left to the operators' or permittee's discretion. This is an impermissible legal standard. The final permit should close this sweeper-discharge loophole and require street sweeping waste be entirely removed from the storm sewer system.

*e. Tree Canopy*

We also applaud Ecology for requiring tree canopy mapping for new development (S2.B.iv.) and tree canopy policy implementation supporting Low Impact Development (LID) (S5.C.6.c.ii.) by no later than December 31, 2028.

However, we are concerned about the lack of clarity that current tree canopy data would provide regarding bioretention efficiency. Tree type, local atmosphere, soil, and surrounding landscape are all factors that impact the ability of trees and vegetation to serve as stormwater management tools. While canopies themselves can slow the rate of runoff into gray infrastructure, they do not largely affect the total amount of runoff that needs to be processed. Rather, the majority of runoff reduction from GSI results from infiltration through exposed permeable surfaces. Although the draft permit does require the development of enforceable documents to minimize impervious surfaces (S5.C.6.c.i.), these types of considerations should also be incorporated into mapping processes and stormwater retrofit projects.

Currently, the mapping provisions only require the use of existing tree canopy data which could limit the ability of Ecology to explore and assess the impact of tree canopies and GSI on stormwater management. The use and development of stormwater management models that consider various factors impacting bioretention capacity (e.g., EPA's GIFMod) would help

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<sup>4</sup> Clear fluid does not mean clean fluid. Many toxicants, including 6ppd-quinone, may be present and invisible to the naked eye.

highlight where and how these management methods might be improved. A tree planted in the middle of a sidewalk, surrounded by concrete and asphalt does not have the same impact on stormwater as one planted in a carefully engineered bioretention project.

Without additional data or modeling that estimates the site-specific conditions for canopies, a range defined by the best available studies on bioretention would help demonstrate the differences between tailored GSI and isolated tree planting on stormwater management. As such, details about specific tree canopy conditions should be included in these maps, just as detailed information about other aspects of the permit (e.g., details about outfalls, catch basins, drainage areas, etc.).

Table: Factors Impacting Stormwater Management Performance of Trees:<sup>5</sup>

Table 1.

Major factors influencing the performance of trees as a stormwater control measure. This is not an exhaustive list. The research community should determine which factors must be quantified to reliably model the stormwater benefits expected from a tree. Key references are cited for each topic.

Tree <sup>1</sup>	Atmosphere <sup>2</sup>	Soil <sup>3</sup>	Landscape <sup>4</sup>
Evergreen/deciduous Species	Climate zone	Rooting volume	Surrounding land cover
Phenology (leaf-on period)	Annual precipitation	Water holding capacity	Impervious surfaces
Size / age	Precipitation intensity	Fertility	Watershed position
Health	Precipitation duration	Compaction	Pollution (air, water, soil)
Leaf area index	Precipitation frequency	Drainage	Tree density
Leaf morphology	Time between storm events	Green infrastructure installations (e.g., structural soils)	Open grown vs. overlapping crowns
Branch angle	Temperature	Least limiting water range	Ground cover (e.g., shrubs, turfgrass, bare ground)
Bark texture	Evaporative demand		
Evapotranspiration rate	Wind		
Root structure/depth			Slope/aspect

<sup>1</sup>Asadian & Weiler, 2009; Clapp et al., 2014; Givnish, 2002; Inkläinen et al., 2013; Livesley et al., 2014; McCarthy et al., 2011; Pataki et al., 2011; Scharenbroch et al., 2016; Van Stan et al., 2015; Wullschlegel et al., 2001; Xiao & McPherson, 2002; Xiao & McPherson, 2011; Xiao & McPherson, 2016

<sup>2</sup>Moriwaki & Kanda, 2004; Staelens et al., 2008; Van Stan et al., 2015; Wadzuk et al., 2014; Wang et al., 2011; Xiao & McPherson, 2011; Xiao & McPherson, 2016; Xiao et al., 1998

<sup>3</sup>Bartens et al., 2008, 2009; Bassuk et al., 2005; Day & Dickinson, 2008; Denman et al., 2016; Layman et al., 2016; Scharenbroch et al., 2016

<sup>4</sup>Armson et al., 2013; Hagishima et al., 2007; Inkläinen et al., 2013; Kjølgren & Montague, 1998; Peters et al., 2011; Wang et al., 2001; Wang et al., 2008; Xiao et al., 1998

<sup>5</sup> Berland, A., Shiflett, S. A., Shuster, W. D., Garmestani, A. S., Goddard, H. C., Herrmann, D. L., & Hopton, M. E. (2017). The role of trees in urban stormwater management. *Landscape and urban planning*, 162, 167–177. Table 1. <https://doi.org/10.1016/j.landurbplan.2017.02.017>

*f. Allowable discharges from pools, hot tubs, and spas, and wash water runoff.*

The section on allowable discharges from pools, hot tubs, and spas to the MS4 and receiving waterways must be amended. First, the draft permit states that “Discharges shall be thermally controlled to prevent an increase in temperature of the receiving water. Swimming pool cleaning wastewater and filter backwash shall not be discharged to the MS4.” This should be clarified that wastewater and filter backwash from pools *and* spas or hot tubs shall not be discharged to the MS4. Second, discharges cannot be allowed which affect – beyond water quality criteria – the temperature of the receiving water whether by “increasing or decreasing it”. This section should be amended to reiterate that these allowable discharges are bound by all water quality standards and thermal control is required to prevent “any changes to the temperature of the receiving water.”

Also of concern in the section on conditionally allowed discharges (including for permittees, secondary permittees, and the ports) are the provisions dealing with street and sidewalk wash water, dust control, and building washing. The draft permit states that “street and sidewalk wash water, water used to control dust, and routine external building washdown that does not use detergents” can be discharged, untreated and unmanaged, into the MS4 so long as a few conditions are met. Those conditions are inadequate. Public education and reduction in volume of water used to wash buildings, streets, and sidewalks is not AKART to protect water quality standards from known ubiquitous toxicants. Wash water conservation may be less voluminous, but may then be more concentrated with pollutants like 6PPD/Q. A host of other pollutants can be found in the dust associated with streets and cities – heavy metals, PFAS compounds, PCBs, and more. Ecology has no way of ensuring through this permit that either “condition” will be met or that compliance with the conditions protects water quality. Ecology needs to either apply actual controls to this source of pollution or remove the allowable discharge exemption entirely.

## **Conclusions**

Our organizations hope the final permit includes more requirements equivalent to the level of effort needed to meet, protect, and sustain water quality standards to the maximum extent practicable and using AKART to ensure authorized discharges do not cause or contribute to a violation of water quality standards. We look forward to seeing the next iteration of the Phase I and II MS4 General Permits and continuing to collaborate as agency stakeholders and working alongside the team at the Department of Ecology.

Sincerely,

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