

## COMMENTS

### COMMENT # 1

S4 – Compliance with Standards. Make the following suggested edit:

**S4.F.2.** In the event that Ecology determines, based on a notification provided under S4.F.1. or through any other means [that are based on credible data](#), that a discharge from a municipal separate storm sewer owned or operated by the Permittee ...

Purpose of Comment: The implementation of the S4F should be based on scientifically defensible, credible data using standards similar to those used for (1) determinations of whether a surface water is supporting its designated use, such as the 303(d) and 305(b) assessment processes, (2) establishment of a Total Maximum Daily Load (TMDL) and the associated load allocations and wasteload allocations, and (3) revisions to water quality standards. This is required for these programs by the Water Quality Data Act (WQDA) as codified in RCW 90.48.570 through 90.48.590.

### COMMENT # 2

S5.C.5 – Controlling Runoff from New Development, Redevelopment, and Construction Sites. Make the following suggested edits:

**S5.C.5.b.iii(2), footnote1.** ~~In order to implement the Pollution Control Hearings Board's language in S5.C.5.b.iii,~~ Ecology will, [dependant upon funding, initiate a process assemble a stakeholder committee](#) to define the scope of LID techniques to be considered, [and a technical advisory group to develop](#) criteria for determining the feasibility of LID techniques, and a LID performance standard. When the process is complete, Ecology will incorporate the results and a deadline for implementation of S5.C.5.b.iii(2) into the permit through a permit modification.

Purpose of Comment: This modifying language is found in the accompanying fact sheet, but the fact sheet holds no regulatory power. The footnote, within the permit, should clarify and hold a minimum description of the process proposed.

### COMMENT # 3

Special Condition S8 – Monitoring. Make the following suggested edits:

**S.8.D.2.a** Each stormwater monitoring site shall be sampled according to the following frequency unless good faith efforts with good professional practice by the Permittee do not result in collecting a successful sample for the full number of storms: ~~Sixty seven percent of the forecasted qualifying storms which result in actual qualifying storm events are required to be sampled, up to a maximum of eleven (11) storm events per water year.~~

- i. [Sixty-seven percent of the forecasted qualifying storms, which result in actual qualifying storm events up to a maximum of 14 storm events per water year. Eleven of](#)

the 14 storm events must meet the qualifying storm event criteria. Qualifying storm events are defined in S8.D.2.a.i and ii, below.

- ii. The permittee may collect and report data from up to 3 storm events that were forecasted qualifying storms but which did not meet the qualifying storm event criteria for rainfall depth (0.2-inch minimum). These 3 non-qualifying storms events may be collected and counted as part of the 14 required storm events. Not including the chemical sampling and analysis required by S8.D.2.d., the maximum number of sampled storm events to be analyzed is fourteen (14) per year.
- iii. The permittee shall ensure that storm samples are distributed throughout the year and approximately reflecting the distribution of rainfall between the wet and dry seasons. The goal is to collect 60-80% of the samples during the wet season and 20-40% during the dry season.

~~Qualifying storm event sampling must be distributed throughout the year, approximately reflecting the distribution of rainfall between the wet and dry seasons (with a goal of 60-80% of the samples collected during the wet season and a goal of 20-40% of the samples collected in the dry season). Additionally, the Permittee shall analyze up to a maximum of three (3) samples that are collected as a result of attempts to sample the eleven (11) required storm events and do not meet the rainfall volume storm event criterion but do meet the other storm event and sample criteria.~~

~~Seventy-five percent of the qualifying storms, up to a maximum of 15 storm events per year, shall be sampled. Sampling must be distributed throughout the year, approximately reflecting the distribution of rainfall between the wet and dry seasons (75-85% of the samples collected during the wet season).~~

Purpose of Comment: This language clarifies the intent of the section.

## PROPOSALS

In response to Ecology's request for ideas on reducing the cost of permit compliance without compromising permit standards, King County submits the following proposals. These proposals will result in compliance with the permit at lower cost or in an achievable timeframe while preserving the permit standards.

### PROPOSAL # 1

**S.5.C.2.b.ii.** No later than ~~the end 4 years from the effective~~ date of this permit each Permittee shall have the capacity to map the attributes listed below for all storm sewer outfalls with a 24-inch nominal diameter or larger, or an equivalent cross-sectional area for non-pipe systems upon need or request. For Counties, the mapping capacity shall be available for urban/higher density rural sub-basins. For Cities, the mapping capacity shall be available for the entire City. Attributes mapped shall include: Land use, Tributary conveyances (indicate type, material, and size where known), and associated drainage areas.

**Proposal Intent** – Extend the requirements of this section to the end of the permit and to restate the requirement so that the permit holder is required to have the capability to provide the information contained in the sections listed above.

### PROPOSAL # 2

**S.5.C.7.b.iii.** Starting no later than 24 months after the effective date of this permit, implement an audit/inspection program for sites identified pursuant to S5.C.7.b.ii. above.

- All identified sites with a business address shall be provided, by mail, telephone, or in person, information about activities that may generate pollutants and the source control requirements applicable to those activities. This information may be provided all at one time or spread out over the last three years of the permit term to allow for some tailoring and distribution of the information during site inspections. Businesses may self-certify compliance with the source control requirements at the discretion of the Permittee. The Permittee shall inspect 20% of these sites, including re-visits as part of the total, annually to assure BMP effectiveness and compliance with source control requirements. The Permittee may select which sites to inspect each year and is not required to inspect 100% of sites over a 5-year period. Sites may be prioritized for inspection based on their land use category, potential for pollution generation, proximity to receiving waters, or to address an identified pollution problem within a specific geographic area or sub-basin. As the inventory is refined and increased with the addition of new businesses, the permittee shall be allowed 18 months to add these new businesses to the inspection rotation.

**Proposal Intent** – Some businesses are either in compliance or require a minimum of effort to come into compliance. Many other businesses require a significant amount of staff support and technical assistance to achieve compliance. The current program does not recognize this difference. By allowing second visits to be used to achieve the 20% required by the permit, these efforts to address more complicated sites are credited.

It is anticipated that the inventory of businesses will increase as the Permittee adds sites through researching various business data sets and conducting field surveys. Time is needed to adjust staffing and budgets as these inventories grow. The approach suggested above will allow time for the permittee to add more staff to the inspection program through their budget cycles. These changes do not reduce the level of protection that this section provides. The current interpretation of the section addresses the number of site visits. King County view is that a greater amount of pollution reduction will be achieved focusing on sites that are more complex and out of compliance. Using an increased follow up allowance (second site visits) will support this approach.

### **PROPOSAL #3**

**S5.C.8.b.vi.** Each Permittee shall conduct ongoing screening to detect illicit connections. The program shall include field screening and source tracing; and may also include source control inspections and complaint response. To comply with the requirement, the Permittee may use the methods identified in Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments, Center for Watershed Protection, October 2004; or field screening methods approved by Ecology in a Stormwater Management Program under a prior Phase I municipal stormwater NPDES permit, provided the approved methods include field screening and source tracing.

(1) Each City covered under this permit shall prioritize conveyances and outfalls and complete field screening for at least 60% of the conveyance systems within the Permittee's incorporated area no later than 4 years from the effective date of the permit.

(2) Each County covered under this permit shall prioritize outfalls and conveyances in 15 urban/higher density rural sub-basins for screening and shall complete field screening for ~~at least half of~~ the conveyance systems in these areas no later than 5 years from the effective date of this permit. In addition, Counties shall complete field screening in at least one rural sub-basin no later than 4 years from the effective date of this permit. The County shall develop a priority rating system to determine the highest value sub-basins for this activity.

**Proposal Intent** – This permit task is one of the more expensive tasks of the permit and will yield the lowest marginal improvement in improving stormwater water quality as currently written. Allowing King County to identify sub-basins with a higher likelihood of illicit connection based on criteria such as land use and potential for annexation would be an effective use of this program. The greatest cost to this program is the process of gaining access to private properties. King County must observe constitutional limitations on accessing private property and in some number of instances permission to access portions of a stream may be necessary as entry points may be on private property and lot lines may travel to the center of the stream. Acquiring access permission from all adjacent owners requires significant time and cost expenditures. Furthermore, attaining all permissions cannot be guaranteed. These factors will minimize the effectiveness of this program. The funding needed for this program would be more effectively spent in the source control and mapping programs. Many of the sub-basins

targeted by this task are subject to annexation and a standard similar to the Phase II jurisdictions that will be annexing these areas seems appropriate.

#### **PROPOSAL #4**

**S.5.C.9 b.i.** Maintenance Standards. No later than 18 months after the effective date of this permit, each Permittee shall establish maintenance standards that are as protective or more protective of facility function than those specified in Chapter 4 of Volume V of the 2005 Stormwater Management Manual for Western Washington. For existing facilities which do not have maintenance standards, the Permittee shall develop a maintenance standard.

(1) The purpose of the maintenance standard is to determine if maintenance is required. The maintenance standard is not a measure of the facility's required condition at all times between inspections. Exceeding the maintenance standard between inspections and/or maintenance is not a permit violation.

(2) Unless there are circumstances beyond the Permittee's ~~Permittee's~~ control, when an inspection identifies an ~~exceedence~~ **exceedance** of the maintenance standard, maintenance shall be performed **for elements critical to the function of conveyance or treatment**:

- o Within 1 year for wet pool facilities and retention/detention ponds.
- o Within ~~6 months~~ **1 year** for typical maintenance.
- o Within ~~9 months~~ **1 year** for maintenance requiring re-vegetation, and
- o Within 2 years for maintenance that requires capital construction of less than \$25,000.

**Proposal Intent** – King County has developed maintenance standards for facility elements that include both those critical to facility function and those that are not such as fence repair and vegetation maintenance. These non-critical elements should not be held to the same schedule as elements critical to function.

All stormwater facility maintenance, except that requiring capital construction, should have the same turnaround time as wet pool facilities and retention/detention ponds (one year). King County feels there is no overall benefit achieved in requiring a shorter turnaround time on typical maintenance and re-vegetation maintenance than on the maintenance of wet pool facilities and retention/detention ponds. Doing so creates a *de facto* situation where maintenance tasks are prioritized by turnaround time rather than by their importance to the overall protection provided by stormwater facilities functions. It also adversely affects the scheduling of maintenance activities, resulting in inefficient use of maintenance resources and staff. Changing all maintenance turnaround times to one year, except for maintenance that requires capital construction, would be more cost effective without compromising the overall protection of stormwater water quality.

#### **PROPOSAL #5**

**S5.C.9.b.iv** Maintenance of Catch Basins Owned or Operated by the Permittee

(1) No later than 24 months after the effective date of this permit each Permittee shall begin implementing a program to annually inspect catch basins and inlets owned or operated by the Permittee.

o Inspections may be conducted on a “circuit basis” whereby a sampling of catch basins and inlets within each circuit is inspected to identify maintenance needs. Include in the sampling an inspection of the catch basin immediately upstream of any system outfall. Clean all catch basins within a given circuit at one time if the inspection sampling indicates cleaning is needed to comply with maintenance standards established under S5.C.9.b.i., above and (3) below.

o As an alternative to inspecting catch basins on a “circuit basis,” the Permittee may inspect all catch basins, and clean only catch basins where cleaning is needed to comply with maintenance standards.

(2) The annual catch basin inspection schedule may be changed as appropriate to meet the maintenance standards based on maintenance records of double the length of time of the proposed inspection frequency. In the absence of maintenance records for catch basins, the Permittee may substitute written statements to document a specific, less frequent inspection schedule. Written statements shall be based on actual inspection and maintenance experience and shall be certified in accordance with G19 Certification and Signature.

(3) No later than 5 years from the effective date of this permit, the Permittee shall complete all required maintenance of catch basins and inlets identified during the initial round of annual inspections. Subsequent maintenance needs identified in successive rounds of annual inspections shall be completed according to the schedule outlined in S5.C.9.b.i., above.

**Proposal Intent** – Based on initial inspection results, King County has identified six times the number of catch basins exceeding maintenance standards than were maintained during the previous budget year. Catch basin maintenance programs throughout the region have recognized that there is a significant cost associated with initiating a program such as described above. By prorating the first round of cleaning over a longer period of time, it makes this requirement more attainable. King County sorely needs these requested changes as in the current economic climate, and amidst very large budget shortfalls, the requirements are hugely burdensome from a cost perspective.

## **PROPOSAL #6**

**S.8.F.4.** Permittees must use appropriate sections of Ecology’s guidance for “Evaluation of Emerging Stormwater Treatment Technologies” (available on Ecology’s website) for preparing, implementing, and reporting on the results of the BMP evaluation program.

The statistical goal is to determine mean effluent concentrations and mean percent removals for each BMP type with 90-95% confidence and 75-80% power.

~~Permittees must use USEPA publication number 821-B-02-001, “Urban Stormwater BMP Performance Monitoring,” as additional guidance for preparing the BMP evaluation monitoring, and must collect information pertinent to fulfilling the “National Stormwater BMP Data Base Requirements” in section 3.4.3. of that document.~~

**Proposal Intent** – The collection of data and preparing to report the results to the National Stormwater BMP database is an extra cost that could easily be removed from the permit without reducing the data quality or permit standards. Removing the significant cost associated with this excess spending item would create substantial savings for the County. Formatting collected information into over 30 worksheets, while problematic, also requires information that is not currently being collected and would need an additional survey or analytical level of effort to comply. For example, mapping curb and gutter location density and length in the entire basin in which the BMP is located, is beyond the scope of King County’s BMP effectiveness monitoring program.

### **PROPOSAL #7**

**S8.G.2.c.** Full implementation of the monitoring program shall begin no later than 2 years after the effective date of this permit. [Toxicity testing under S8.D.2.d shall begin no later than 3 years after the effective date of this permit.](#)

**Proposal Intent** – A cost savings would be realized if the initial set-up and installation of required sampling stations are staggered so that the start-up effort to comply with the Permit will be spread out over a longer period. Sampling for S.8.F does not have as long of a monitoring period inherent in the requirements. BMP effectiveness monitoring can be accomplished in a year or two. If S.8.D.2.d were delayed until after the requirement for S.8.F were fulfilled, the staggered schedule would accrue several benefits:

- 1) Staff workload can be better accommodated, reducing the need for hiring additional temporary fieldstaff or consultants. Fewer field staff can be better managed, which will maintain a higher data quality.
- 2) Can use equipment from BMP monitoring for toxicity testing, reducing the need to purchase equipment for a peak demand that may not occur again.
- 3) Can evaluate long-term stormwater monitoring equipment installation over a longer period of time, which could result in fewer malfunctions, false starts, and bad data when collecting the expensive resource intensive toxicity sample.
- 4) Targeting the same storms for both S.8.D.2.d and S.8.F may also have adverse laboratory capacity issues. This has a higher potential to cause sample analysis delays and reduced quality data due to hold time and other QC violations.

### **PROPOSAL #8**

**S8** Limit the maximum number of storms to 18 for BMP characterization (reference to TAPE for requirement), and statistical goal.

**S.8.F.4** Permittees must use appropriate sections of Ecology’s guidance for “Evaluation of Emerging Stormwater Treatment Technologies” (available on Ecology’s website) for preparing, implementing, and reporting on the results of the BMP evaluation program.

~~The statistical goal is to determine mean effluent concentrations and mean percent removals for each BMP type with 90-95% confidence and 75-80% power.~~

~~Percent removal is to be determined for each parameter for which each BMP type. The statistical goal is to measure significance of difference between influent and effluent concentrations with 90-95% confidence (test statistic  $\alpha = 0.1$  to 0.05) and 75-80% power ( $\beta = 0.25$  to 0.2). If a paired test can be applied, then percent removal is calculated for each event, and mean or median percent removal is calculated from event percent removal values. If a non-paired test is applied, then percent removal is calculated from mean or median influent and effluent concentration values from all events. Whether mean or median is used depends on whether the data used for the test are normally distributed or not. Both mean and median influent and effluent values are also to be reported.~~

**Proposal Intent** – These changes are to clarify and limit the required number of samples, and clarify and correct statistical goal language. S.8.F.4 is ambiguous in stating, “*must use appropriate sections.*” The permit should be modified to specify which sections are to be used-

With regard to number of samples, one interpretation of TAPE is that up to 35 samples may be required. We believe the intent in TAPE is to stop monitoring once the stated confidence and power goals are met. A Permittee might want to continue if percent removal isn't adequate with the number of samples collected. The Permittee should not be required to continue if after 12 to 18 events if either the goals are all met, or the Permittee determines one or more of the goals cannot be met. The BMP monitoring requirements should be capped at 18 sample events.

With regard to the statistical goal, the permit language is unclear and invalid from an analytical point of view. Power pertains to statistical hypothesis tests, not to confidence intervals. The statistical test is for difference between influent and effluent, not for percent removal. Because stormwater data may be lognormal or otherwise non-normal, use of non-parametric statistical tests will be more appropriate than parametric tests in many cases. Depending upon the data distributions, medians may be more appropriate than means, yet means are specified in this permit requirement.

## **PROPOSAL #9**

**S.8.D.2.f.ii.** Parameters that are below detection limits after two years of data may be dropped from the analysis. A minimum of one independent sample per year shall be collected.

**Proposed replacement language:** Parameters for which there is a state or federal receiving water quality standard or protective limit may be dropped from monitoring if 0.25 x the standard or limit is not exceeded for at least 75% of the monitoring events during two years, and the 0.5 x the standard or limit is not exceeded during the same period. If there is more than one standard (e.g., state and federal), comparison will be made to the more restrictive standard. This assessment will be for each analyte on a site-by-site basis.

Parameters for which there is no receiving water quality standard or protective limit may be dropped from monitoring if 0.25 x the acceptable risk level is not exceeded for at least 75% of the monitoring events for two years, and 0.5 x the acceptable risk level is not exceeded during the same period. This assessment will be for each analyte on a site-by-site basis.

**Proposal Intent** – The permit language is ambiguous in part; and will cause unnecessary excess monitoring costs for the following reasons:

- *Detection limit* is ambiguous. In this context, does it mean (in order from lowest to highest values) the instrument detection limit, the method detection limit, or the practical quantitation limit (PQL)<sup>1</sup>, which is usually the reporting limit (e.g., in reporting from Ecology's Manchester Environmental Laboratory)?
- Numeric results below the reporting limit, which is usually the PQL, are not usually given by laboratories. Ecology's Manchester Laboratory language is something along the lines of, '*the analyte was not present at the reported value,*' and the reported value is the PQL.
- The reporting limits specified in the permit are very low. Field blanks, laboratory reagent blanks, or samples may become contaminated below, at, or above the specified reporting limit, by mishandling or analytes present in reagents. Values near the low specified reporting limits will not be meaningful from a stormwater management point of view.
- The alternative requirement for a minimum of one sample per year doesn't make sense from a credible science point of view; it could not be considered to be representative, yet it represents cost. '*Dropped from analysis*' should mean exactly that.
- Effluent concentrations need to be low enough that discharge will not cause violation of water quality standards in receiving waters, or in the case of biological assessments, that will not cause concentrations in receiving waters to cause harm to threatened or endangered species. Requiring ongoing monitoring if concentrations are consistently well below these levels is costly and serves no purpose.
- The criteria for exit from monitoring should not be whether substances are present at very low levels; rather, they should be based on some fraction of water quality standards, or when standards are not present, fraction of risk assessment level.

*State water quality standard* would refer to those standards in WAC 173-201a. US EPA lists Current National Recommended Water Quality Criteria<sup>2</sup>, which might provide guidance in some cases where WA criteria do not exist. Biological assessments may provide limits for some pollutants in some receiving waters. For pollutants for which there is no WA or EPA standard, or limit set by a biological assessment, Ecology should provide a risk assessment level below which each parameter is considered to be non-toxic. This would be done via aquatic biota risk assessment data, and where not present, other animal studies or human health criteria.

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<sup>1</sup> “A PQL is determined either through the use of inter-laboratory study data or, in absence of sufficient information, through the use of a multiplier of 5 to 10 times the MDL. EPA has conducted water supply (WS) performance evaluation (PE) studies twice a year for the last twenty years. Data from these studies can be used for PQL determinations. Using graphical or linear regression analysis of the WS data, the Agency sets a PQL at a concentration where at least 75% of the laboratories (generally EPA and State laboratories) could perform within an acceptable level of precision and accuracy.”

<http://www.epa.gov/ogwdw/standard/review/methods.html>

<sup>2</sup> <http://www.epa.gov/waterscience/criteria/wqcriteria.html> and <http://www.epa.gov/waterscience/criteria/>