Attachment 2

City of Tacoma's Comments on the Draft NPDES Phase I Permit (2012-2018)

Appendix 1

General

1. Please consolidate the definitions in Appendix A with the other Definitions and Acronyms in the Permit in order to ensure consistency and make them easier to find.

Section 1. Exemptions

Oil and Gas Field Activities or Operations, Page 1

2. It is unclear why access roads should be exempt in this context, please clarify.
3. It appears that a comma should be added after the word "pipelines" in the first sentence.

Road Maintenance, Page 1

4. This section should apply to all paved areas, such as parking lots, driveways, etc. The title and description should be changed. Consider a title such as "Pavement Maintenance."
5. The placement of what is not exempt within the exemption section of Appendix 1 is confusing. Consider including the items that are not exempt in the definition for new and redevelopment. The current location is misleading.

Underground Utility Projects, Page 2

6. Please clarify what is meant by "similar runoff characteristics" and how this will be determined.

Section 2. Definitions Related to Minimum Requirements

Page 3

7. Erodible or leachable materials: Please revise the definition to include measurable criteria with which to evaluate if a waste or chemical "measurably alters the physical or chemical characteristics of runoff." Otherwise, please verify that the list of examples is inclusive of all materials that should be considered erodible or leachable.
8. Land disturbing activity: The added sentence states, "Stormwater facility maintenance…." It seems that all public works facility maintenance should be included here. In addition, these items should be added to Section 1. Exemptions of Appendix 1.
9. LID Best Management Practices: This definition includes roof downspout controls. However, the current manual defines roof downspout controls to include standard infiltration trenches, dispersion such as splash blocks, and even a piped connection to

the MS4. Please specify which roof downspout controls meet the definition of LID. Because BMPs with underdrains will not provide significant flow control benefit, please clarify whether or not BMPs with underdrains will be considered LID BMPs.

Page 5

10. Pollution-generating pervious surfaces (PGPS): "Typical PGPS include permeable paved roads, driveways and parking lots…" This definition could be misconstrued when identifying the project thresholds, that a project would need ¾ acre of permeable pavement in order to require treatment. Suggest clarifying by stating that the thresholds for hard surfaces apply to permeable pavements. Additionally, consider generalizing the definition to "Typical PGPS include permeable pavement "subject to vehicular use"" rather than including a list which may not be inclusive of all possible examples.
11. Add a definition for "project" as related to the "common plan of development" concept.
12. Rain Garden:
    - The definition specifically requires compost-amended native soils. The definition should allow for rain gardens to use an imported rain garden mix or compost amended soils.

    - Because the term "rain garden" is so commonly used to refer to both engineered and non-engineered rain garden/bioretention facilities, it is suggested that instead of using the terms "rain garden" and "bioretention", the terms "engineered rain garden" and "non-engineered rain garden" be considered.

    - The definition describes a rain garden as "non-engineered" while also being "designed." Designed implies a soils evaluation to size the facility and typically implies some level of engineering. A soils evaluation by a professional should be required for any rain garden if the project triggers any of the minimum requirements and would require a permit for construction.

    - The definition refers to the Rain Garden Handbook for rain garden specifications and construction guidance. The permittee should be allowed to provide equivalent guidance and specifications. Suggest adding language that equivalent guidance can be used for rain garden design.

13. Receiving Waters: Under the definition and throughout the permit, ground water is sometimes one word and sometimes two. Suggest consistent use of one word, "groundwater."
14. Replaced Impervious Surface: the definition is not clear.
    - It appears that a building could be removed except for the foundation, a new building could be built, and the new building would be considered replaced.
    - The impervious surfaces associated with structures should be more clearly defined.
    - "Down to the foundation"...does this include removal of the foundation, or removal of everything except the foundation?

- Is reroofing considered replaced or maintenance? Previous email guidance from Ecology indicated that reroofing would be considered replaced. However, if reroofing projects are considered replaced impervious surfaces, it may make restoration of older buildings infeasible for owners because of the related stormwater requirements.
- For other impervious surfaces where it says "removal down to bare soil or base course", is this the top of the base course or below the base course?
- What is required if a building is removed, but the foundation is left as a parking area. Should this be considered new PGIS, replaced PGIS or simply a change of use?

Page 6

15. Threshold Discharge Area: Provide a definition for natural discharge location and clarify if the downstream path includes manmade conveyances or if it is intended to include only predeveloped conditions.
16. Vehicular Use: The definition of regular vehicular use needs to be further clarified. For example, should car show fields be added to the list of regularly used sites? Please identify quantitative criteria to help define when a maintenance access road or other surface would be considered to be used regularly or irregularly.

Section 3. Applicability of the Minimum Requirements

Page 8

17. Provide a definition for common plan of development.
18. The new redlined paragraph is confusing as written. It is Tacoma's understanding that plats, short plats, and building permits vest an application to the manual requirements in affect at time of a complete permit application. The paragraph should mention building permits and construction permits as well as subdivision and land disturbing permits. Additionally, please revise the third sentence to read:
    - "For projects involving only land disturbing activities (e.g. clearing or grading), the thresholds apply at the time of complete application for the permit allowing or authorizing that activity."

Page 9

19. The removal of the word "native" from the Figures 3.2 and 3.3 leaves the definition of vegetation too vague. Revise to read "native or uncultivated vegetation" since vegetation is very broad. Provide a definition in the permit for the new term "vegetation" as applied here.
20. In Figures 3.2 and 3.3, stating that "all minimum requirements apply" to a project can be misleading, since actually the project applicant must evaluate if minimum requirements #6-#8 apply or not. Consider revising to say, "Comply with all applicable requirements."

Page 10

21. In Figure 3.3, revise the statement in the third box down to read: "Convert ¾ acres or more of vegetation to lawn or landscaped areas."

Page 11

22. Section 3.3: Revise to read: "If runoff from the new or replaced hard surfaces and converted pervious surfaces is not separated from runoff from other surfaces on the project site, the stormwater facilities must be sized for the entire flow that is directed to them." When it is not possible or desirable to isolate drainage from existing surfaces from discharging to the proposed stormwater facility, clarify whether or not runoff from those existing surfaces should be modeled for the existing condition or predeveloped conditions.

Page 12

23. Section 3.4 and throughout Appendix 1, suggest one word for "redevelopment."

Section 4. Minimum Requirements

Page 13

25. In Section 4.1, define and clarify "site-appropriate development principles". The Stormwater Management Program requirements, Stormwater Management Manual for Western Washington and Appendix 1 all reference site-appropriate development principles and LID Principles. In order to maintain consistency between Permittees, it is important that Ecology provide minimum requirements and a framework for outlining site assessment steps under Minimum Requirements #1 in enough detail that plan review staff would be able to easily evaluate whether or not site-appropriate development principles or LID principles have been implemented on a project site "to the extent feasible. Currently, although a definition of LID Principles is provided in the permit definitions, the application of the principles still needs to be clarified. No definition of site-appropriate development principles is currently provided, nor is the application clarified, so both need to be added.
26. In Section 4.1, consider renaming "site-appropriate development principles" to "LID principles" for consistency with Appendix 1 definitions.
27. For sites that are regulated under both Ecology's General Construction Permit and the new and redevelopment requirements under the Municipal Stormwater Permit, please clarify who has the responsibility of ensuring that the SWPPP is accurate and that the BMPs are installed correctly. Does Ecology have overarching responsibility since they administer the Construction NPDES permit, or does the jurisdiction have responsibility since they own the MS4?
28. Under Section 4.2 in the General Requirements, second paragraph, provide a definition or list of criteria to determine if a site has reached "final stabilization."

Page 14

29. Under Seasonal Work Limitations, Item 3. It states, “Activities where there is one hundred percent infiltration of surface water runoff…” Provide sizing guidance for erosion and sediment control devices that will achieve 100% infiltration. For example, is this 100% infiltration of a certain rainfall event or a certain runoff file?

Page 15

30. Item 2.d. “If the sediment is tracked off site, clean the affected roadways…” Consider revising the term “roadways” to be more general. It is possible that sediment can be tracked off site onto an area other than a roadway that, if not cleaned, would cause sediment to enter the storm system. Additionally, these areas should be cleaned immediately instead of the end of each day, as track out can cause major damage within the course of one day.
31. Item 3.b. “Where necessary to comply with 3.a., above, construct stormwater infiltration or detention facilities…” Please add criteria to meet this requirement during construction here or reference another guidance document with this information. As we understand it from Ecology’s previous guidance, ½ of the 2-year to the 10-year event for existing site conditions must be detained during construction activities for those sites required to comply with MR #7.

Page 16

32. Item 4.d. “Direct stormwater runoff from disturbed areas through a sediment pond or other appropriate sediment removal BMP…” A sediment pond may not be the best solution for a site, but as written, it seems to be the preferred option. Consider changing to, “Direct stormwater runoff from disturbed areas through a sediment removal BMP before…”
33. Item 5.a. Remove the list of examples since it may not be inclusive of all applicable BMPs. The applicant should rely on the Stormwater Management Manual to determine appropriate BMPs. The inclusion of specific examples here leads to questions about approval of items that are not included in the list.

Page 17

34. Item 6.a. Remove the list of applicable practices since including them here suggests that those practices are allowed and other practices might not be allowed. Rely on the guidance manuals to outline specific practices.

Page 21

35. Item 12.d. Include CPESC (Certified Professional in Erosion and Sediment Control) as an option for site inspections for sites over one acre.
36. Item 12.c (located after Section 12.d). Should be labeled Section 12.e.

Page 22

37. Item 13. Remove the reference to LID and apply this requirement to all BMPs or, at a minimum, all infiltration BMPs. It is unclear why this section is specific to LID BMPs. All BMPS should be protected during construction. Additionally, limiting the list to just rain gardens, bioretention, and permeable pavement is not inclusive. Other types of BMPs require similar protection such as infiltration trenches, infiltration ponds, the flow paths of dispersion BMPs, etc. This section appears to create an extra effort for LID which may act as a barrier to implementation.

Page 23

38. Section 4.5. Please add Low Impact Development to the section name of the "Onsite Stormwater Management" minimum requirement.

Page 24

Low Impact Development Performance Standard

39. Ensure that WWHM can generate this information before this becomes a requirement.

Mandatory List #1

40. The opening paragraph doesn't seem to clarify what to do if none of the options work. Then should the runoff be collected and conveyed to an MS4?
41. The acronym for the Stormwater Management Manual for Western Washington is noted as SMWW under "Lawn and landscaped areas**"** but then used as SMMWW in this section. Ensure consistency throughout the manual.
42. It should be noted that BMP T5.13 should always be feasible for lawn and landscaped area. If there is a scenario where it is not feasible, provide this scenario.
43. For smaller projects that are only required to comply with Minimum Requirements #1- #5 and Mandatory List #1, we suggest requiring a professional soils analysis in addition to following the design guidelines in the Rain Garden Handbook for Western Washington Homeowners. Without a professional soils analysis for the rain garden design, there will be too much variability in rain garden sizing, and it is more likely that they may be incorrectly sized and fail.
44. Permittees should be able to develop an equivalent manual or BMP for rain gardens in lieu of using the Rain Garden Handbook. Revise to say "or equivalent design procedures".
45. Under "Roofs", the order of precedence indicates that a downspout infiltration system should be chosen over a rain garden, if feasible. In this case, while the infiltration trench will be an engineered facility (although the SWMMWW and most equivalent manuals have a "cookbook" design for applicants to use), it appears that the rain garden is not required to be an engineered facility. We suggest that the rain garden and the infiltration trench be changed to hold equal standing in the order of precedence, and a "cookbook" design for a rain garden should be provided to dispose of the same amount of runoff as the infiltration trench design. The required soils testing should also be equivalent for

both, infiltration trenches and rain gardens. If Ecology has set up the system to just have any level of "infiltration", a similar sizing scenario for infiltration trenches and rain gardens could be established.

46. Under "Roofs," the Rain Garden Handbook does not require that soils be classified or tested by an expert. This will make the potential for error much greater for rain gardens than infiltration systems. A large majority of systems installed are installed by a developer and then sold to the long-term owner responsible for maintenance of the system. This practice could result in many rain gardens being installed that are not large enough because it is to the developer's advantage to make the rain garden small, and the long-term maintenance issues would not be their risk. Because the current order of precedence requires an infiltration trench to be evaluated prior to choosing a rain garden, an expert would have to classify the soils anyway, so it makes sense to use the same classification results to size the rain garden.
47. Under "Other hard surfaces", the permit requires a soils expert to classify the soils to determine if permeable pavement is feasible, but does not require an expert to classify the soils for rain gardens. Please require a soils expert evaluation in both cases.
48. Under "Other hard surfaces", why is permeable pavement the preferred option over other types of infiltration? We suggest requiring infiltration of any type, and this could be conditioned by a minimum requirement for bottom area in proportion to the tributary area, if that is an important criterion.

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Mandatory List #2

49. Roofs, Item 3. "If the short-term native soil infiltration rate is less than 0.3 in/hr, do not use this option unless the roof is classified as pollution-generating impervious surface." This statement is confusing. It reads as though if the rain garden would be used for treatment, then it would be required to have an underdrain. Provide clarifying language or additional explanation. Suggested revision: "If the short-term native soil infiltration rate is less than 0.3 in/hour, this option cannot be used to meet the requirements of MR#5, but a bioretention facility with an underdrain may be used to treat pollution-generating surfaces."
50. Roofs, Item 5. It is unclear why routing runoff below permeable pavement is specifically called out when routing runoff under regular pavement is not precluded under Item 2. Consider revising Item 2 to say that infiltration below pavement must be considered.
51. Roofs, Item 5. The requirement to complete a cost analysis is unclear. More guidance must be given on exactly what elements are to be included in the cost analysis. For instance, is the structural design and construction upgrades that would be required part of the cost analysis? It may be more appropriate and yield better information for Ecology to undertake a study of the costs of green roofs rather than requiring developers, who may or may not have retained experts in green roofs, to develop costs. This should not be part of the Permit.
52. Other Hard Surfaces, Item 3. Same concern as above comment under Roofs, Item 3.

Page 26

53. Section 4.6 Runoff Treatment, Oil Control. Consider revising the oil treatment thresholds. Currently a development such as a small convenience store or a drive-through coffee stand would likely be subject to this requirement, but a large big box store would not due to the large size of the store. The City has permit history with similar cases. The threshold should be revised to take into account the overall pollution generation of a site as well as the ratio of vehicles per building size.

Page 27

54. Section 4.6 Runoff Treatment, Enhanced Treatment. The proposed revision to the first sentence is confusing. The requirement should be fully explained in this section.

Page 28

55. Section 4.6 Runoff Treatment, Basic Treatment. Provide a clear definition and identification of BMPs for pretreatment. Include operational BMPs such as street sweeping, if appropriate.
56. The language of paragraph 2) is unclear. Please clarify.

Page 29

57. Under Treatment Facility Sizing**,** each jurisdiction should be able to choose their own design storm events based upon local data. This should not be specified in the permit or SMMWW, but handled through the manual equivalency review process.
58. Under Additional Requirements**,** provide the reference for the document and include "or an equivalent manual."

Page 31

59. Section 4.7, Thresholds. Please update the second bullet item to be consistent with Figure 3.3 under Section 3.1 (i.e. removal of "native" from vegetation description.) Also, provide a definition of "effective pervious surfaces," as included in the third bullet item.

Page 33

60. Section 4.9, Minimum Requirement #9: Operation and Maintenance. This should apply to all sites that propose any type of stormwater facility including those sites that are only required to comply with Minimum Requirements #1-#5. Please update the requirement flow charts in Figures 3.2 and 3.3 appropriately.

Section 8. Feasibility Criteria for Selected LID BMPs

General

61. The feasibility criteria are design guidelines for various best management practices. Design guidelines should not be specifically included in the permit. Their inclusion does not make it possible to change the feasibility criteria based on lessons learned without a

permit modification. Consider removing the feasibility criteria from the permit and referencing the SWMMM or other equivalent manuals. This will allow LID criteria to adapt with increases in the knowledge base.

62. In general, the feasibility criteria are very broad and open to interpretation. Please provide more guidance and specifics.
63. We suggest including a brief discussion in the beginning of Section 8 restating that the mandatory list of BMPs are considered feasible and shall be designed and constructed per the requirements listed in the technical manuals (LID Guidance Manual and Stormwater Management Manual) except if the feasibility criteria are not met. The discussion should further state that even if the feasibility criteria are not met, the BMPs could be allowed if approved by a permittee.
64. Provide a list of feasibility criteria for each of the mandatory BMPs in the list including roof downspout controls, dispersion and soil quality BMPs. If there is no case in which the BMP will be considered infeasible, state that.
65. If an infeasibility decision is triggered, does this mean that an applicant would not be required to do the "infeasible" item or will not be allowed to do the infeasible item? Please clarify. We suggest that the applicant not be required, but be allowed to do the item.

Page 36 **Section 8. Feasibility Criteria for Selected LID BMPs**

Item I.A.

66. Clarify if the feasibility criteria are meant to apply to all rain gardens or if lined or facilities with underdrains are not required to comply or have a different set of feasibility criteria.
67. "Site cannot be reasonably designed…" This determination should be based on whether or not the design adequately incorporates LID principles per minimum requirement #1. Provide criteria for judging whether or not adequate site planning was performed.
68. Per the criteria, bioretention cannot be used in Landslide Areas, on slopes greater than 15% or within 50 feet of slopes that are greater than 20%. Please add a condition clarifying whether or not it would be allowed, if a geotechnical engineer provides an analysis that infiltration is safe in these areas.
69. The criterion regarding geotechnical recommendations is quite broad. Could there be more specific guidance to ensure that bioretention and rain gardens are not as easily dismissed.
70. Regarding the criterion for separation from seasonal high groundwater, bedrock, impervious layers, please specify if it is acceptable to add fill to increase the amount of separation from these layers. If yes, identify the design parameters.
71. "Where the drainage area is more than any of the above amounts…" For clarity, restate the thresholds rather than referring to the "above amounts".
72. For rain gardens, the Stormwater Management Manual will allow a vertical separation of 3 feet to seasonal high water table but the infiltration BMP requires 5 feet of separation. Make the two requirements consistent or provide clarification as to why one is more conservative than the other.

Page 37, Section 8. Feasibility Criteria for Selected LID BMPs

Item I.A.

73. Lack of useable space could easily be argued at any redevelopment site. Provide guidance on how this is to be evaluated in relation to site planning using LID Principles. For instance, if the developer doesn't install a rain garden because of lack of space but they are providing more parking than is required, would they be required to eliminate parking spaces to make a rain garden feasible? Would a rain garden that infiltrates only a portion of a roof be required as part of the project design, if one that infiltrates the entire roof cannot fit on the site?
74. "Where they are not compatible,...." For clarity, replace "they" with bioretention facilities.
75. "Where the only area available for siting would threaten the safety or reliability of pre-existing underground utilities or pre-existing underground storage tanks." Specify how this would be determined.
76. "Where there is a lack of usable space for rain gardens/bioretention facilities at redevelopment sites." Specify how this would be determined. Specify whether or not a new development will be required to reduce their impervious surface to accommodate the rain garden. Specify whether or not a bioretention facility must be sized for the available space and include an overflow to the MS4.
77. Add a feasibility criterion in the case that there is no safe emergency overflow pathway to the MS4.
78. Include a feasibility criterion for the circumstance of a site where storage of hazardous chemicals or other business activities cause a higher risk of spill to pollute groundwater.

Pages 37-39, Item I. B.

79. In general, are these criteria meant to apply to pavements both with and without underdrain systems? Please clarify.
80. Why limit the permeable pavement in parking lots to parking spaces? This may act as a barrier to LID. For example, in the case of a small parking lot, the project proponent may be driven to design a standard detention facility instead of permeable pavement if the parking spaces could not accept the drive aisle runoff.
81. The criterion regarding geotechnical recommendation is quite broad. Could there be more specific guidance to ensure that permeable pavement is not easily dismissed?
82. "Within 100 feet of a known contaminated site or abandoned landfill." Describe contaminated site. The Asarco Smelter Plume covers a large portion of Puget Sound. Is this statement intended to preclude all areas within the plume from using permeable pavement? Additionally, will complying with this statement require soils testing to identify "known contaminants", and if so, identify the list of contaminants to be evaluated. Finally, there should be an exception included to allow infiltration if EPA reviews and approves the "brownfield" site for stormwater infiltration.

Page 38, Section 8. Feasibility Criteria for Selected LID BMPs

Item I. B.

83. Is the soil suitability criteria required for permeable pavement sections that do not meet the thresholds for treatment? As written, it appears that any permeable pavement section, regardless of size, would have to provide treatment. Is this the intent?
84. Further define what levels of treatment permeable pavement shall meet. It is our understanding that permeable pavement with native soils that meet the site suitability criteria may provide basic and enhanced treatment. However, sites that require oil treatment are not viable sites for permeable pavement. If a site is required to provide enhanced and phosphorus treatment, identify if permeable pavement with appropriate underlying soils will be allowed to meet both needs.
85. Eliminate the following criterion: "Fill soils are used that can become unstable…" This would not necessarily cause infeasibility if a soils professional is required to provide suggestions for how fill soils must be placed when using permeable pavement.
86. Define "regular" and "heavy" in the context of "applications of sand."
87. "Where infiltrating and ponded water below new permeable pavement area would compromise adjacent impervious pavements." Specify how this would be determined.
88. "Where installation… would threaten existing below grade basements" or "shoreline structures such as bulkheads." Specify how this would be determined.
89. "Where permeable pavements do not provide sufficient strength to support heavy loads at industrial facilities, such as ports." Specify how this would be determined.
90. "Installation of permeable pavement would threaten the safety or reliability of pre-existing underground utilities or…storage tanks." Specify how this would be determined.
91. Include a criterion for infeasibility if located on a site where storage of hazardous chemicals or other business activities cause a higher risk of spill to pollute groundwater.

Page 39, Section 8. Feasibility Criteria for Selected LID BMPs

Item I. B.

92. Provide a definition for residential roads that provides the relationship between arterials, collectors, local and residential road classifications.

Page 39, Item I.C.

93. "Roof design has a slope greater than 20%." This seems like a design choice that would be very easy to use to avoid the green roof requirement. Add language requiring the feasibility evaluation to specify the design limitations that would require a slope greater than 20% to allow the roof to function properly. Otherwise the slope would be required to be less than 20%, and a green roof would be considered feasible.
94. "Building cannot technically be designed to accommodate structural load of a vegetated roof." Specify how this would be determined and provide examples of when this condition might occur.

Page 39, Item II. Competing Needs

95. Consider adding the following requirements which may also be identified as competing needs:
    - Groundwater/aquifer protection district and wellhead protection requirements;
    - Critical areas regulations;
    - Local codes that remain barriers to LID after the required code revision process has been completed.