

City of Tacoma

Thank you for the opportunity to provide comments on the August 2019 Draft Stormwater Management Manual for Western Washington. Comments from the City of Tacoma are attached in the excel document: "City of Tacoma Draft2019SWMMWWComments-Final" with a supporting document titled: "Table I-E.2 & I-E.3 Suggested Changes".

Pre-Project (Existing) Land Cover	Post-Project Land Cover	Flow Control Requirements
Forested	New Impervious	Project Site: Provide onsite flow control BMPs to match predeveloped (forested) conditions. Flow Control Improvement Transfer: Not Allowed
Lawn/Landscaped	New Impervious	Project Site: Provide onsite flow control BMPs to match pre-project (lawn/landscaped) conditions. Flow Control Improvement Transfer: Transfer flow control improvements to match pre-project (lawn/landscaped) flow durations to predeveloped (forested) flow durations.

Pre-Project (Existing) Land Cover	Post- Developed-Project Land Cover	Flow Control Requirement(s) to be added as part of the Development Project
0.5 acres Forested	0.5 acres New Impervious	Project Site: Provide onsite flow control BMPs to match post-project (0.5 acres impervious) to pre-project (0.5 Acres Forested) Impervious to Forested conditions. Transfer Site Flow Control Improvement Transfer: No Additional Improvements (transfer not allowed) Not Allowed.
3.3 acres Pasture	3.3 acres New Impervious	Project Site: Provide onsite flow control BMPs to match post-project (3.3 acres impervious) to pre-project (3.3 acres pasture) conditions. Acres Impervious to Forested

		Flow Control Improvement Transfer Site: Transfer flow control improvements to match pre-project (3.3 acres pasture) flow durations to predeveloped (3.3 acres forested) flow durations. 3.3 Acres Pasture to Forest
1.0 acre Lawn/Landscape	1.0 acre New Impervious	Project site: Provide onsite flow control BMPs to match post-project (1.0 acres impervious) to pre-project (1.0 acres lawn/landscape) conditions. 1.0-acre Impervious to lawn/landscape Flow Control Improvement Transfer site: Transfer flow control improvements to match pre-project (1.0 acre lawn/landscape) flow durations to predeveloped (1.0 acres forested) flow durations. 1.0-acre lawn/landscape to forested
0.2 Effective Impervious	0.2 Replaced Impervious	Project site: No Additional Improvements Not Allowed. Flow Control Improvement Transfer site: Transfer flow control improvements to match pre-project (0.2 acre impervious) flow durations to predeveloped (0.2 acres forested) flow durations. 0.2-acre Impervious to forested

Comments on the Draft 2019 SWMMWW		
Draft 2019 SWMMWW Section (select from drop down)	Comment	Comment Made By
(General Comment)	The City of Tacoma requests that all comments be addressed individually by Ecology. In the last Permit cycle, comments were not individually addressed so it was unclear why Ecology did or did not make specific changes.	City of Tacoma
Executive Summary	The third sentence does not appear to be a complete sentence. Revise	City of Tacoma
Executive Summary	How to Find Corrections, Updates, and Additional Information: Since the SWMMWW and Equivalent Manuals are specifically named in the Permit it is unclear how changes can be made to those documents without making changes to the Permit. The City agrees that changes should be allowed for both Ecology and other jurisdictions on an as needed basis but it is unclear how this affects Permit language. Consider removing the dates of the equivalent SWMM and SWMMWW from the Permit.	City of Tacoma
Executive Summary of Volume I	The language under Appendix I-A is a little misleading as waterbodies in that list may need to provide flow control - consider changing "without requiring" to "without requiring Flow Control if all restrictions in Section I-3.4.7 are met."	City of Tacoma
(General Comment)	Each bolded section of the SWMMWW body and appendix should have a number for ease of reference.	City of Tacoma
(General Comment)	Throughout the document ensure consistent and accurate use of the words project, project site, and site as these are defined differently. As the definitions are written, it is not obvious how to apply the minimum requirements to a project that has construction proposed both on parcels and within the right-of-way.	City of Tacoma

I-1.5 Types of Best Management Practices (BMPs) for Stormwater Management	It is stated, "If it is found that, after the implementation of BMPs advocated in this manual, beneficial uses are still threatened or impaired, then additional controls may be required." This statement appears to say that the SWMMWW is not AKART and using this presumptive approach may not be sufficient. This statement appears to contradict the purpose of the presumptive approach and is in conflict with other statements within the SWMMWW - such as the statement under Manual Content (page 45) and the Section I-1.6. Remove this statement.	City of Tacoma
I-2.14 Underground Injection Control (UIC) Program	I-2.14 "Preventing ground water contamination by regulating the discharge of fluids from UIC wells; and" should read "Preventing groundwater contamination by regulating the discharge of fluids into UIC wells;" as written in Chapter 173-218WAC.	City of Tacoma
I-2.2 AKART	This section is confusing. It seems to imply that AKART is only associated with the UIC rules. Is the intent only to discuss AKART in respect to UIC in this section - if so, rename the section header.	City of Tacoma
I-2.3 The Action Agenda for Puget Sound	The Action Agenda is not a regulatory document but it is included in Section 2 as a regulatory document, which could be confusing. Consider placing this in a separate section or remove from the SWMMWW. On Page 69, academic is misspelled.	City of Tacoma
I-2.6 Industrial Stormwater Permits	Under How Do the Industrial Stormwater Permits Relate to this Manual, it states: "Industrial facilities with new development or redevelopment must evaluate whether Flow Control BMPs are necessary." Does this mean that industrial new and redevelopment projects do not have to evaluate Runoff Treatment or LID BMPs?	City of Tacoma
I-2.6 Industrial Stormwater Permits	What is the responsibility of the Permittee for reviewing SWPPPs when new development, redevelopment occurs at a site that has an Industrial Stormwater Permit? Consider adding language to clarify the Phase I Permittees responsibility.	City of Tacoma
I-2.7 Construction Stormwater General Permit	What is the responsibility of the Permittee for reviewing SWPPPs when new development, redevelopment occurs at a site that has an Construction Stormwater Permit? Consider adding language to clarify the Phase I Permittees responsibility.	City of Tacoma

I-2.14 Underground Injection Control (UIC) Program	Consider adding verbiage here, and in section I-4, to advise a designer to reference the local jurisdiction's Ecology-approved SWMM, if one exists for design guidance for infiltration BMPs and Source Control BMPs.	City of Tacoma
I-3.2 Exemptions	Under Pavement Maintenance - Define resurfacing, base course, bituminous surface treatment and chip seal. Include in the language the upgrading from gravel to pervious pavement, etc.	City of Tacoma
I-3.2 Exemptions	Page 95: Pavement Maintenance - This section lacks clarification as to whether pavement maintenance activities are exempt as an element of a project, or only if pavement maintenance is exempt only if done as a stand-alone project and not an element of a project or triggered as a threshold requirement of another project. Provide additional clarifying language.	City of Tacoma
I-3.2 Exemptions	Under Underground Utility Projects - Define underground utility projects.	City of Tacoma
I-3.2 Exemptions	Consider making voluntary cleanup projects as described in WAC 173-340-400 exempt from the Minimum Requirements.	City of Tacoma
I-3 Minimum Requirements for New Development and Redevelopment	Consider adding language about what surface type artificial lawn should be considered. Currently, projects that propose replacing a natural lawn area with an artificial lawn area would trigger only the land disturbance thresholds and therefore would never need to provide flow control or water quality though the change would likely contribute different pollutants to the downstream system. Additionally, there is no guidance about the installation of underdrains (in lawn/landscaped area or artificial lawn areas) and how the increase in flowrates should be managed. Consider adding guidance.	City of Tacoma
I-3 Minimum Requirements for New Development and Redevelopment	Consider adding a "change of use" threshold to the SWMM. Currently if a building is razed to leave behind a parking lot the thresholds for water quality would not be met even though there is essentially a new pollution generating hard surfaces created.	City of Tacoma
I-3 Minimum Requirements for New Development and Redevelopment	Consider adding language in the SWMM about the use of reclaimed asphalt pavement as a gravel type surface. Research shows that asphalt grindings can leach PAHs and heavy metals in stormwater runoff.	City of Tacoma
I-3 Minimum Requirements for New Development and Redevelopment	Provide a definition for every term contained in the MRs to avoid confusion and inconsistency amongst jurisdictions: terms include: aquatic life use, basin, bituminous surface treatment, chip seal, connection, industrial site, landscaped area, lawn area, new hard surface, new impervious surfaces, removed impervious surface, road related project, retrofit, significant, significant source.	City of Tacoma

I-3 Minimum Requirements for New Development and Redevelopment	Consider adding additional language or separate guidance documents for the term project. The current definition does not talk about vesting or piece-mealing to avoid stormwater mitigation requirements.	City of Tacoma
I-3.4 Minimum Requirements (MRs)	Add guidance on rail projects and surfaces – what is considered to be a pollution generating, etc.	City of Tacoma
I-3.3 Applicability of the Minimum Requirements	Page 96: Step no. 4 refers to determination in Step no. 1. Appears intent was to refer to determination in Step no. 2.	City of Tacoma
I-3.3 Applicability of the Minimum Requirements	Page 96: Step no. 4, second paragraph creates confusion instead of intended clarification. Consider revising to note MRs #1-5 & #9 consider the entire project to determine thresholds; and MRs #6-8 consider individual TDAs to determine thresholds.	City of Tacoma
I-3.3 Applicability of the Minimum Requirements	Page 97: In the Permit language box, change "development" to "new development".	City of Tacoma
I-3.3 Applicability of the Minimum Requirements	Page 97: Minimum Requirement apply to projects. A project is defined as any proposed action to alter or develop a site. Site is defined as the area defined by the legal boundaries of a parcel or parcels of land that are subject to new development or redevelopment. For road projects, the length of the project site and the right-of-way boundaries define the site. There is no definition for road projects (should this refer to road-related projects?). It is unclear how the MRs apply to projects that have components both within the ROW and on parcels. Consider reviewing the definition of project, site, and project site to see how they relate to the MRs. The City recommends using the definitions currently within the City of Tacoma July 2016 SWMM.	City of Tacoma
I-3.3 Applicability of the Minimum Requirements	Page 97: The thresholds are based upon the time of application for subdivision, plat, short plat, building permit, or other construction permit. Subdivision, short plat, building permit, and construction permit are not defined. The definition of plat appears to encompass the definitions of subdivision and short plat. Consider revising language for clarity. It appears the intent to set vesting requirements for when the MRs should apply to a project. Consider changing plat, short plat, and subdivision to land use actions whose ultimate goal includes new development or redevelopment.	City of Tacoma
I-3.3 Applicability of the Minimum Requirements	Redevelopment Flow Chart - Define road related project.	City of Tacoma

I-3.3 Applicability of the Minimum Requirements	New Development/Redevelopment Thresholds. The way the language is written, for new development and redevelopment projects, you only ever have to comply with the MRs for the land disturbing activities if the lesser thresholds are met as the language for land disturbances is left out of the MR#1-9 section. This is likely not the intent. Revise language.	City of Tacoma
I-3.3 Applicability of the Minimum Requirements	Define new hard surface, lawn and landscaped areas.	City of Tacoma
I-3.3 Applicability of the Minimum Requirements	Page 101: It is unclear why there is a distinction of where equivalent areas may be applied to meet the MRs. Provide justification. Define public road projects. The end goal is protection of the receiving waters, it is unclear why projects located on parcels that are privately funded should not also be offered the opportunity to provide an equivalent area outside their parcel boundaries.	City of Tacoma
I-3.3 Applicability of the Minimum Requirements	It is unclear why only redevelopment projects may utilize regional facilities. Provide justification.	City of Tacoma
I-3.3 Applicability of the Minimum Requirements	Page 103: It is stated that local governments can utilize a fee in lieu of program for MR#6 and MR#7. On Page 105: It is stated, that local governments may use regional facilities as an alternative method to meet MR#5, #6, #7, #8. It is unclear which MRs can be mitigated through regional facilities. It is unclear how a MR#5 facility can be a regional facility because these facilities are meant to be small and distributed unless the regional facility can accommodate the LID Performance Criteria. Revise language for consistency and clarity.	City of Tacoma
I-3.4.1 MR1: Preparation of Stormwater Site Plans	Define site appropriate development principles.	City of Tacoma
I-3.4.2 MR2: Construction Stormwater Pollution Prevention Plan (SWPPP)	Define site development plan.	City of Tacoma
I-3.4.2 MR2: Construction Stormwater Pollution Prevention Plan (SWPPP)	Under Element #1, define duff layer, native top soil, and natural vegetation. In the urban environment, there is likely no duff layer, native top soil or native vegetation. The intent of this section should be to only clear what is necessary to clear. Consider adding some language or guidance for the urban environment.	City of Tacoma
I-3.4.2 MR2: Construction Stormwater Pollution Prevention Plan (SWPPP)	Under element #3, define development sites or change to new development and redevelopment project sites.	City of Tacoma
I-3.4.2 MR2: Construction Stormwater Pollution Prevention Plan (SWPPP)	Page 110: It states that there is no discharge flow limit to flow control exempt waterbodies. Is this only the case if the restrictions per Minimum Requirement #7 are met or in general for construction site runoff? Clarify language.	City of Tacoma
I-3.4.2 MR2: Construction Stormwater Pollution Prevention Plan (SWPPP)	Element #12 - It is unclear if the requirement for CESCL only applies to projects that disturb greater than one acre and have a Construction Stormwater General Permit or all projects that disturb one acre or more.	City of Tacoma

I-3.4.4 MR4: Preservation of Natural Drainage Systems and Outfalls	MR#4 states that discharges from the project site shall occur at the natural location. The natural location is then defined as location of channels, swales, and other non-manmade conveyance systems as defined by the first documented contours existing for the subject property. Define property. Additionally, most projects are of the size that there may not have been channels, swales, or conveyances on the particular project site at any time. Provide additional language or guidance for those sites that have no defined conveyance systems in old photos or maps, where old photos or maps are not available, or in the urban environment where stormwater systems were installed prior to modern stormwater requirements.	City of Tacoma
I-3.4.5 MR5: On-Site Stormwater Management	Ecology should consider adding guidance or creating additional documentation about MR#5 and its applicability to the Asarco Smelter Plume. The Asarco Smelter Plume is far reaching, affecting many jurisdictions, and there is no clear guidance on how to apply LID in this known contaminated site. This could be an appropriate in the infeasibility section.	City of Tacoma
I-3.4.5 MR5: On-Site Stormwater Management	When using the LID Performance Standard - when is BMP T5.13 deemed to be infeasible. Can you utilize the flow credits within the BMP to help achieve the LID Performance Standard and consider them part of the Flow Control BMPs or are they meant to be separate and distinct?	City of Tacoma
I-3.4.5 MR5: On-Site Stormwater Management	The List Approach: As written it does not say that the applicant is required to document for each BMP in the list why it was infeasible, only if the entire list is infeasible. Is this the intent? Consider revising language.	City of Tacoma
I-3.4.5 MR5: On-Site Stormwater Management	Under List #3 why is Full Dispersion not considered as a option for the roofs or other hard surfaces?	City of Tacoma
I-3.4.6 MR6: Runoff Treatment	Are the following considered to be pollution generating surfaces: dog runs, deck areas adjacent to swimming pools that drain to the stormwater system?	City of Tacoma
I-3.4.6 MR6: Runoff Treatment	Page 139: It is stated: "A limitation to the use of regional Runoff Treatment BMPs is that the conveyances used to transport the stormwater to the Regional BMP must not include waters of the state that have existing or attainable beneficial uses other than drainage." Remove this sentence and put into Appendix 1-D and clarify the intent. As written, this appears to imply that the water quality facility must be placed upstream from all waters of the state (including ditches). Should this say that the project that is utilizing the regional treatment cannot use a conveyance that includes waters of the state?	City of Tacoma

I-3.4.7 MR7: Flow Control	The list of Flow Control Exempt Waterbodies has been revised to include the addition of marine waterbodies. This will now require an hydraulic analysis of the jurisdiction's conveyance system (sometimes for miles) to ensure it have sufficient hydraulic capacity to convey discharges. Sufficient hydraulic capacity is not defined. This addition allows Ecology to regulate jurisdictions conveyance system sizes - which may not be directly correlated to the ability of the receiving water to handle increased flowrates. This change in language will require additional flow control in many places where it may not be appropriate to protect receiving waters. The objective of Minimum Requirement #7 is specific to stream channel erosion rates not marine environments. Remove marine waterbodies from the list.	City of Tacoma
I-3.4.7 MR7: Flow Control	Page 141" Postproject" should be two words.	City of Tacoma
I-3.4.7 MR7: Flow Control	Page 141: Does the jurisdiction get to choose how to apply MR#7 in terms of the pre-project land cover or the land cover that existed at the time when flow control requirements were adopted?	City of Tacoma
I-3.4.9 MR9: Operation and Maintenance	Page 151: Define Runoff Treatment BMPs. The definition of Flow Control BMPs does not specifically state that these BMPs must be designed to meet MR#7 so it is unclear if MR#9 applies to Onsite Stormwater Management BMPs which could be considered to be Flow Control BMPs per the definition. The Objectives section goes on to state the objective of ensuring Stormwater Management BMPs are properly maintained. Stormwater Management BMPs is not specifically defined. The Supplemental Guidelines section then goes on to use the term stormwater control BMPs which is also undefined. Ensure consistency in language to ensure the intent of the MR is meant and jurisdictions understand how to implement the requirement.	City of Tacoma
I-4.1 Introduction To Subsurface Infiltration (Underground Injection Control Wells)	Define municipal stormwater runoff. It is unclear if this is meant to include stormwater runoff from private parcels as well as public.	City of Tacoma
I-4.2 How UIC Wells are Regulated	The creation of a SWMP is required by the NPDES Phase I Permit which does not include the UIC program and the SWMMWW is not a regulatory document; because of this it is unclear how the jurisdiction can be required to include UIC requirements within their SWMP. Revise language.	City of Tacoma
I-4.2 How UIC Wells are Regulated	What is the role of the Permittee in ensuring UIC wells are properly designed and registered? Provide guidance.	City of Tacoma

Appendix I-C: Guidelines For Wetlands When Managing Stormwater	The new wetlands guidance requires skills beyond which the typical plan review staff possess. Will Ecology provide in-depth training to plan review staff to ensure compliance with MR#8?	City of Tacoma
I-C.5 Hydroperiod Protection Guidelines for Wetlands	The upscaling may artificially direct more impervious surface runoff to the wetland than is actually discharging in the existing condition which may cause hydrologic changes that may affect the wetland negatively. Ecology should perform analysis of actual wetlands in relation to the upscaling to verify if the upscaling will appropriately protect the wetland.	City of Tacoma
I-C.5 Hydroperiod Protection Guidelines for Wetlands	Page 216: Under Step Veg-1.2 - is the Field Mean Monthly the same as the Monitored Mean Monthly?	City of Tacoma
I-C.5 Hydroperiod Protection Guidelines for Wetlands	Page 217: Under Step Veg-2.1: Should Field Monthly Mean WLF say Annual Mean WLF? Should the Annual Mean be the same as the monthly mean (15 cm)?	City of Tacoma
I-D.1 Introduction to Regional Facilities	Page 231 appears to state that regional facilities can only be utilized for meeting MR#6 or MR#7 although text within the new development and redevelopment sections state that Minimum Requirements can be met for equivalent areas - which could be a regional facility. Clarify the difference between equivalent areas and the use of regional facilities and in-basin or out-of-basin transfers. Additionally, the Executive Summary (page 43), language in Section I-3.3, and language later in Section I-D.4 states that regional facilities can be used to meet MR 5, 6, 7, or 8.	City of Tacoma
I-D.1 Introduction to Regional Facilities	page 231. The Language "for projects located within the area contributing to the regional facility" contradicts with language in the New Development Section that areas may drain to the same receiving waterbody.	City of Tacoma
I-D.1 Introduction to Regional Facilities	Define regional facilities.	City of Tacoma
I-D.3 Regional Facility Timing	This section appears to state that regional facilities must be sized for the entire drainage basin ("that will fully meet the stormwater requirements for that area."). That does not appear to be the intent of this appendix. Revise language.	City of Tacoma
I-D.4 Using Regional Facilities to Meet Minimum Requirements	The concept of similar pollution characteristics is interesting because the pollution characteristics are taken into account when determining the type of treatment required so this concept does not make sense. Revise language.	City of Tacoma
I-D.5 Sizing Regional Facilities	Why is expansion of existing regional facilities only limited to MR#7?	City of Tacoma

I-D.6 Regional Facility Area Transfers	Under In-Basin Area Transfers define "point". The language about the facility discharging to a specific point contradicts with language in the New Development Section that areas may drain to the same receiving waterbody. It is unclear if the intent is to protect the receiving waterbody as a whole or just a single point within the receiving waterbody. The intent again is unclear with the concept of TDAs.	City of Tacoma
I-D.6 Regional Facility Area Transfers	It is stated that in-basin transfer programs do not require prior approval from Ecology. This appears to contradict the language under Regional Facilities as Part of a Larger Plan that might require Ecology approval.	City of Tacoma
I-D.6 Regional Facility Area Transfers	Define equivalent facilities. It appears that Ecology is trying to make a distinction between equivalent facilities and regional facilities but is not specifically defining either and language within the Minimum Requirements does not relate to both facility types.	City of Tacoma
I-D.6 Regional Facility Area Transfers	It is unclear if the facility types list under "Types of Regional and Equivalent Facilities for Area Transfers" is intended to be inclusive and if so why only include the listed types of flow control?	City of Tacoma
I-D.6 Regional Facility Area Transfers	Page 250 - This section includes information that must be submitted with the Annual Report. Any requirement for submittal in the Annual Report should be contained within the Permit itself and be consistent with a Permit requirement. The requirement can not be contained within the SWMMWW. The Permit must include the definition for a regional facility as well to ensure this "requirement" is appropriately applied.	City of Tacoma

I-D.6 Regional Facility Area Transfers	<p>Page 250 - Why are the tracking tables made publically available through Ecology's PARIS database? If they are part of the Annual report, they are already available. There are numerous annual report attachments that are not separated into sections for the Paris database. New development and redevelopment projects that have facilities to meet MR aren't made publically available on the PARIS database. If a regional facility is used to meet MRs for new development and redevelopment why is it different? Remove language from SWMMWW.</p>	City of Tacoma
Appendix I-E: Stormwater Control Transfer Program	<p>Define watershed as used in the context of this document. It appears in the context of this document that watershed is defined as the contributing basin to a single receiving waterbody and could include several outfalls and discharge locations.</p>	City of Tacoma
I-E.1 Introduction to the Stormwater Control Transfer Program	<p>This guidance is specific to Minimum Requirement #7 - Flow Control. Is this meant to imply that Ecology will not approve Out of Basin Transfers for onsite stormwater management BMPs or water quality treatment BMPs? The City of Tacoma believes there are benefits to including water quality as part of this program.</p>	City of Tacoma
I-E.2 Stormwater Control Transfer Program Principles, Elements, and Guidelines	<p>Pg. 257: Item #6 states, "The Permittee shall provide annual reports to Ecology documenting flow control capacity used and available in offsite facilities associated with this program." What is Ecology going to do with this information? The Permittee will have this information available, it is unclear why the information needs to be supplied to Ecology in an annual report.</p>	City of Tacoma
I-E.2 Stormwater Control Transfer Program Principles, Elements, and Guidelines	<p>Page 257: bullet #7, remove statement "These funds will not be used for any capital investment outside of this program" and replace with "fee-in-lieu" funds shall be administered in accordance with 35.92 RCW</p>	City of Tacoma

I-E.2 Stormwater Control Transfer Program Principles, Elements, and Guidelines	Page 258: 6. Item #6 states, “Where regional facilities in a high priority watershed will serve to provide capacity credits for purchase, it should be designed for future build-out of the area draining to it, whenever possible, so that it can fully meet the needs of the drainage area.” In urban settings it is unlikely that a regional facility can be designed for future build-out. The addition of this language may discourage the design of regional facilities. The City recommends removing this sentence.	City of Tacoma
I-E.2 Stormwater Control Transfer Program Principles, Elements, and Guidelines	Table I-E.2 is confusing and should be removed or thoroughly clarified. Include definitions for project site and transfer site. It is recommended to describe pre-project as “pre-project (existing) land cover. If this table remains, see attached document: "Table I-E.2 & I-E.3 Suggested Changes" attached with comments document.	City of Tacoma
I-E.3 Establishing a Watershed Prioritization for Stormwater Control Transfer Programs	Page 260: The sentence states, “As a first step..., a Permittee must articulate a clear prioritization goal/focus...” It appears that Ecology has already stated (page 255) the goal of the program to be to “Reduce the duration and frequency of high stream flows...” Remove sentence.	City of Tacoma
I-E.3 Establishing a Watershed Prioritization for Stormwater Control Transfer Programs	Page 262: Under Step 4, provide additional guidance on what “actively seek input” means, for example, what is the obligation, who are the contacts, how long do Permittees have to wait for response. As written, this could be interpreted differently amongst jurisdictions.	City of Tacoma
I-E.3 Establishing a Watershed Prioritization for Stormwater Control Transfer Programs	Table I-E.3 Link is missing for "WDFW is currently working on a high resolution land cover change product, available at:	City of Tacoma

I-E.4 Effectiveness Monitoring Plans for Stormwater Control Transfer Programs	Page 277: The NOTE is confusing. Does the note mean that if the project were historic prairie prior to settlement that the project would also not be able to participate in the program? If this is the case, the language should be rewritten as follows: "Projects that convert a forested land cover or historic prairie to any other..."	City of Tacoma
I-E.4 Effectiveness Monitoring Plans for Stormwater Control Transfer Programs	Tables I-E.4 and I-E.5, rearrange tables so all content within a table is on a single page.	City of Tacoma
I-E.4 Effectiveness Monitoring Plans for Stormwater Control Transfer Programs	Table I-E.4: It is recommended to include a diagram to show a scenario. See attached document: "Table I-E.2 & I-E.4 Suggested Changes" for suggestions on how to improve the table for clarity.	City of Tacoma
I-E.5 Stormwater Facility Transfer Capacity Credits and Tracking	Table I-E.5: Define the "debit" concept. It does not appear that the Notes would apply in every scenario, please clarify. In the table, consider using the same terminology as used throughout the document text.	City of Tacoma
II-2.3 Who is Responsible for the Construction SWPPP?	Add distinct language here for when a Professional Engineer is required.	City of Tacoma
II-2.4 Preparing Construction SWPPPs	The layout as a Step Process was a better way to guide applicants to prepare a SWPPP. Consider changing the title of Site Specific Considerations for Construction SWPPP Preparation to "Step 1 – Research Site Conditions" and changing Construction SWPPP Documentation Requirements to "Step 2: Prepare the SWPPP."	City of Tacoma
II-2 Construction Stormwater Pollution Prevention Plans (Construction SWPPPs)	Include the 13 elements of a SWPPP in Volume 2 as well as Volume 1.	City of Tacoma
II-2.4 Preparing Construction SWPPPs	The checklist language should match the construction SWPPP narrative language exactly. Consider revising so language matches exactly.	City of Tacoma
BMP C124: Sodding	Consider adding language up front about BMP T513 and MR#5 requirements. In urban areas there isn't really an opportunity for temporary sodding – the majority is permanent seeding that will typically require compliance with BMP T513.	City of Tacoma
BMP C125: Topsoiling / Composting	It is unclear if utilization of BMP T5.13 is required at all sites regardless of if MR#5 has been triggered based upon the following language: "Note that this BMP is functionally the same as BMP T5.13: Post Construction Soil Quality and Depth which is required for all disturbed areas that will be developed as lawn or landscaped areas at the completed project site." Add additional clarifying language here and potentially to MR #5 as needed based upon intent.	City of Tacoma

BMP C126: Polyacrylamide (PAM) for Soil Erosion Protection	The language under the Conditions of Use section is misleading when compared to the language under the Design and Installation Specifications. Consider removing “In areas that drain to a sediment pond” from the following sentence: In areas that drain to a sediment pond, PAM can be applied to base soil under the following conditions. Alternatively, remove the entire section and combine it with the design and installation section as some language is similar.	City of Tacoma
BMP C126: Polyacrylamide (PAM) for Soil Erosion Protection	Remove the language about check dams from the second bullet. This sentence assumes that all areas less than 5 acres have channels in which to place check dams. Based upon the addition of the check dam language, it is unclear if the use of PAM is appropriate for areas less than 5 acres that go through any of the allowed sediment control BMPs (like catch basin inserts). Revise language.	City of Tacoma
BMP C160: Certified Erosion and Sediment Control Lead	Recommend revising this BMP to be a more generic Erosion and Sediment Control Lead then state when certification is required. It is always a good idea to have one designated person in charge of erosion and sediment control and in specific situations ensure this person has been appropriately certified. Additionally, consider if it is appropriate to include information related to sampling and the CESCL program within this BMP since those items may change at different times than this document. Consider referencing program website and the construction general permit and remove a lot of language from this BMP. o Revise the second sentence under purpose to: The designated person shall be responsible for ensuring compliance with all local, state, and federal erosion and sediment control and water quality requirements. o Revise the first portion of Conditions of Use to: Projects required to obtain an NPDES Construction Stormwater Permit are required to be a certified professional: either a Certified Erosion and Sediment Control (CESCL) or Certified Professional in Erosion and Sediment Control (CPESC).	City of Tacoma
BMP C209: Outlet Protection	It is unclear if the first bullet under design installation and specifications is specific to culverts. Revise if the outlet protection length is meant to apply to all outlets not just culverts. The language also assumes that all discharges are entering a channel.	City of Tacoma
BMP C236: Vegetative Filtration	In the purpose, the new language suggests that vegetative filtration can only be used if the stormwater runoff first passes through a sediment pond. If this is the intent, add this bullet to the conditions of use or design criteria section.	City of Tacoma

BMP C240: Sediment Trap	Consider combining BMP C240 and BMP C241 into one BMP that describes sizing based upon the contributing area.	City of Tacoma
BMP C241: Sediment Pond (Temporary)	It is unclear if a sediment pond is required to be installed for all sites that have a contributing area greater than 3 acres or if a combination of other BMPs can be used on these larger sites.	City of Tacoma
BMP C241: Sediment Pond (Temporary)	Consider adding additional language as to how to size baker tanks and pumps for baker tanks to this section. Baker tanks are more likely to be used in urban areas.	City of Tacoma
III-1.1 Choosing Your Source Control BMPs	Define commercial properties and industrial properties.	City of Tacoma
III-1.1 Choosing Your Source Control BMPs	Under Additional Guidance Specific to Phase I and Phase II Municipal Stormwater Permit Permittees, it is stated that BMPs identified as mandatory must be included in equivalent manuals. The language within Volume IV changed between the old SWMMWW but Appendix 10 of the Permit does not require these changes to be implemented to be equivalent. Consider revising the language in the SWMMWW to be consistent with the Permit.	City of Tacoma
III-1.2 Choosing Your Runoff Treatment BMPs	There is a typo in the Runoff Treatment BMP Selection Flow Chart.	City of Tacoma
III-1.2 Choosing Your Runoff Treatment BMPs	Pretreatment - It is specifically stated that infiltration BMPs must be preceded by a pretreatment BMP. Practically, a pretreatment facility does not make sense for all facilities that infiltrate and provide treatment. Consider revising the language to exclude permeable pavement and bioretention.	City of Tacoma
III-1.2 Choosing Your Runoff Treatment BMPs	Should permeable pavement be listed as a pretreatment method since it is specifically the native soils or a sand layer that provide the treatment?	City of Tacoma
III-1.2 Choosing Your Runoff Treatment BMPs	Consider revising the oil control thresholds in the SWMM. Currently, a large building with multiple car trips per day (such as a retail building) will not trigger oil control whereas a smaller building with multiple car trips per day (such as a convenience store) will trigger oil control.	City of Tacoma
III-1.2 Choosing Your Runoff Treatment BMPs	Should enhanced treatment be more broadly utilized (i.e. for marine discharges) given the available science on saltwater fish and other aquatic life?	City of Tacoma
III-1.3 Choosing Your Flow Control BMPs	It is unclear why pretreatment is required for infiltration facilities designed for flow control only. These facilities may not receive stormwater from a pollution generating area. Make pretreatment optional.	City of Tacoma
III-1.3 Choosing Your Flow Control BMPs	Onsite stormwater management BMPs may also be used to meet the flow control requirements. Include those BMPs in the section.	City of Tacoma

III-3.1 Introduction to Stormwater Site Plans	It is stated that the purpose of the existing site analysis is for low impact development site design. This is part of the reason for the existing site analysis but not the entire reason. The site must be analyzed for existing utilities, slopes, structures, and any other existing features that may affect the project design. Consider revising language to be more inclusive of the intent.	City of Tacoma
III-3.2 Preparing a Stormwater Site Plan	Page 539, it states to provide written justification, including soil report citation, for infeasibility. There are many infeasibility criteria for LID BMPs that are not based upon the soil type on the site, in these instances a soils report is not necessary for the project.	City of Tacoma
III-3.2 Preparing a Stormwater Site Plan	Page 542: There are words missing from the first sentence under Step 6.	City of Tacoma
S406 BMPs for Deicing and Anti-Icing Operations for Streets / Highways	Consider revisiting the language about the use of urea and sodium chloride in the SWMM. Currently the Pacific Northwest Snowfighters has a Qualified Product List that is a common site used by municipal street workers. Consider including reference to this website.	City of Tacoma
S453 BMPs for Formation of a Pollution Prevention Team	It does not make sense for all members of a SWPPP team to be available on the site every day. For example, a Professional Engineer may have been responsible for providing sizing information for a sediment pond and would therefore be part of the team but that person is not the day to day operator. Revise language to state at least one member of the team should be on site every day.	City of Tacoma
S455 BMPs for Spill Prevention and Cleanup	There is a typo under the Description of Pollutant Sources section - heath not health; and under Spill Prevention: "ground clothes" should read "ground cloths".	City of Tacoma
S435 BMPs for Pesticides and an Integrated Pest Management Program	It appears that this BMP could apply to any parcel that contains vegetation and require that those sites develop an IPM. Is the Permittee responsible to review the IPM to ensure they meet the requirements of the BMP? It seems more appropriate that IPM be a optional portion of the BMP except for very specific sites.	City of Tacoma
S450 BMPs for Irrigation	The applicable BMPs state to never water at rates that exceed the infiltration rate of the soil. This statement would require a soils investigation to ensure this sentence is met. Consider revising language.	City of Tacoma
S455 BMPs for Spill Prevention and Cleanup	The bullet that begins: "Drains to treatment facilities..." is confusing. Is this bullet meant to apply to any catch basin on a site or just catch basins that are located under the fueling canopy? The stormwater system could not properly function is a typical drain was constantly closed and required opening at various points in a storm event. Revise language for clarity. Additionally, it is unclear why basic treatment is specifically noted as the applicable treatment type.	City of Tacoma

S422 BMPs for Railroad Yards	It appears to state that enhanced treatment is required regardless of discharge location. Is this the intent?	City of Tacoma
S424 BMPs for Roof / Building Drains at Manufacturing and Commercial Buildings	The language in this BMP appears to state that enhanced treatment is required regardless of discharge location. Is this the intent?	City of Tacoma
S440 BMPs for Pet Waste	The STORM regional work group has developed a regional campaign regarding appropriate means for disposing of pet waste. This campaign did not include burying or composting pet waste. Burying and composting pet waste seem to very specific methods applicable to only limited areas and circumstances. Remove Bury It and Compost It.	City of Tacoma
S440 BMPs for Pet Waste	It appears that this BMP may be requiring the installation of pet waste stations at all multi-family housing complexes. Is this the intent? Define multi-family housing complex.	City of Tacoma
S440 BMPs for Pet Waste	It states that when planning recreation site or multi-family housing complexes to provide biodegradable disposal bags. Who has the responsibility of providing these bags? The requirement of biodegradable bags may encourage citizens to toss their bags on the ground where it can decompose - which is not contrary to the public education messaging of throwing it away in the garbage. Items like this should not go under the Applicable section.	City of Tacoma
S440 BMPs for Pet Waste	Under the Applicable BMPs it states to bathe pets indoors - remove or move to the optional section.	City of Tacoma
S442 BMPs for Labeling Storm Drain Inlets On Your Property	Ensure consistent language - storm drain or storm drain inlet? Define storm drain inlet? Storm drain is defined in the SWMMWW and is not the same as a storm drain inlet.	City of Tacoma
S452 BMPs for Goose Waste	How many geese is enough geese to require deterrent management practices and to what extent do these practices help with ensuring waterways are clean? Since deterrent methods are contained within the applicable section it is unclear the ramifications if geese are continually present at a given site. Is it really Ecology's intent for Permittee's to manage wildlife? Consider revising BMP or remove.	City of Tacoma
V-1.3.2 Treatment Liners	What level of treatment does the treatment liner provide? The treatment liner should be added as a treatment type under Volume III - Choosing BMPs.	City of Tacoma
BMP T5.11: Concentrated Flow Dispersion	Define vegetated flowpath.	City of Tacoma
V-4.1 Introduction to Roof Downspout BMPs	How to Select of Roof Downspout BMPs - remove of.	City of Tacoma
BMP T5.10A: Downspout Full Infiltration	Define permeable soil.	City of Tacoma

BMP T5.10B: Downspout Dispersion Systems	It is unclear why BMPs with vegetated flowpaths between 25-50 feet would model as 50% landscaped/50% impervious while the option of using the lateral flow method can be used for both the 25-50 and 50+ flowpath lengths.	City of Tacoma
V-5.4 Determining the Design Infiltration Rate of the Native Soils	Under the Treatment Prior to Infiltration BMPs it appears that pretreatment may be optional: "A pretreatment BMP...SHOULD..." This may contradict with earlier language within the Choosing BMPs section that appears to require pretreatment BMPs. Revise language as appropriate. Pretreatment should only be required based upon specific site conditions.	City of Tacoma
V-5.4 Determining the Design Infiltration Rate of the Native Soils	Page 842. There is a typo under the second bullet of Infiltration Test.	City of Tacoma
V-5.4 Determining the Design Infiltration Rate of the Native Soils	Option 3: Soil Grain Size Analysis is the only test that is not time consuming but is deemed as not appropriate for soils that have been consolidated by glacial advance which affects a large portion of Western Washington. Ecology should consider allowing the use of the soil grain size analysis for all soil types provided appropriate safety factors are used to account for the testing method. The City highly encourages Ecology to develop more space and time friendly testing methods for estimating the initial Ksat as the methods provided do not promote the use of LID because they are costly and time consuming.	City of Tacoma
V-5.4 Determining the Design Infiltration Rate of the Native Soils	If multiple LID facilities (such as individual roof runoff infiltration trenches) are being used to meet MR#7 do the methods provided in this section have to be applied or can the analysis included within the smaller BMPs (a soil type analysis) be utilized for the design of those smaller facilities.	City of Tacoma
V-5.5 Site Characterization Criteria for Infiltration	Under subsurface characterization it states to conduct continuous sampling to no less than 10 feet which may conflict with the depths stated in the initial saturated hydraulic conductivity options. Regardless, it is confusing how this characterization differs from what can be obtained from the information determined from the Determining the Design Infiltration Rate section. Consider adding additional clarifying language here for how these explorations differ from or compliment the saturated hydraulic conductivity explorations.	City of Tacoma
V-5.5 Site Characterization Criteria for Infiltration	Under subsurface characterization it appears that the minimum number of test pits/holes based on facility type is specifically related to the soil grain size analysis method testing (Option 3). Is that the intent or do the minimum number of testing locations apply to all of the characterizations?	City of Tacoma

V-5.5 Site Characterization Criteria for Infiltration	This is not a complete sentence so the intent is unclear: "Ground water monitoring wells (or driven well points if expected shallow depth to ground water) installed to locate the ground water table and establish its gradient, direction of flow, and seasonal variations, considering both confined and unconfined aquifers." It is unclear when and if ground water monitoring is ever required or just always recommended for larger contributing areas. Provide clear language as to when items in this section are required.	City of Tacoma
BMP T5.15: Permeable Pavements	Page 862: The second bullet from the end - does not appear to be a complete sentence or the sentence does not appear to make sense. Revise. It is unclear from the language if the applicant is required to review both infeasibility criteria of this bullet and install a 6" layer of sand in order to meet the infeasibility criteria or if they can choose to do that if they want. It appears the intent of this bullet is to guide applicants to a solution for using permeable pavement when certain infeasibility criteria exist on the site. Do not put solutions within the infeasibility criteria - a reference note or similar could be used to lead the reader to a section of solutions.	City of Tacoma
BMP T5.15: Permeable Pavements	Under the Field Testing Requirements because of the way the bullets are written, it appears that permeable pavements are not allowed to use the grain size method of determining the infiltration rate for the soil underneath the pavements. Is this the intent? Also, define residential developments.	City of Tacoma
BMP T5.15: Permeable Pavements	Runoff Model Representation - It appears that for grades greater than 2% it is not recommended to use the permeable pavement element. It is unclear, in WWHM, what element is preferred. Additionally, modeling guidance provided by Ecology has suggested to leave the pavement thickness out of the total thickness when using the permeable pavement element - is this still the standard thought?	City of Tacoma
BMP T7.30: Bioretention	Under the infeasibility criteria, it is unclear why a licensed professional is needed to show there is lack of usable space or show that there is not a safe overflow pathway. Consider moving these bullets to the next section down.	City of Tacoma
BMP T7.30: Bioretention	Consider updating the bioretention specifications. As written, the language is cumbersome and many applicants are saying they are not able to find a soil mix that fits exactly within every parameter provided. Is it necessary to include all parameters in the text or can they be consolidated? Also, it is unclear if every aspect is vital to bioretention function. Consider using WSDOT specifications instead of creating new specifications.	City of Tacoma

V-7 Biofiltration BMPs	Review and update the biofiltration sizing section as needed. Currently, King County, Ecology, City of Tacoma, and WSDOT have different sizing “instructions” for biofiltration sizing. Tacoma recommends utilizing the WSDOT sizing table because it is straightforward and easily reviewable.	City of Tacoma
V-11.1 Introduction to Miscellaneous LID BMPs	It is unclear why the BMPs in this chapter can not be used individually to meet the flow control goals - the "flow credits" are presumably scientifically based so why couldn't the use of the BMPs be sufficient if used widely?	City of Tacoma
BMP T5.16: Tree Retention and Tree Planting	Page 1072 BMP T5.16 Tree Retention and Tree Planting - Tree Credit tables V.11-1 and V.11-2 - Existing credit values appear to be undervaluing the actual stormwater management functions of trees and is too low to successfully incentivize more than a handful of developers to utilize the tree credits in new and redevelopment in Tacoma. Suggest increasing credit value and/or providing alternative WWHM tree modeling element that is more reflective of additional tree functions beyond interception such as evapotranspiration. Utilize outcomes from research project currently underway "Promoting Stormwater Benefits from Urban Canopy Cover in Puget Sound."	City of Tacoma
V-10 Manufactured Treatment Devices as BMPs	It is assumed that emerging technologies that receive a use level designation are incorporated into the SWMM and the Permit but the language within the use level designations is not always consistent with Permit language. For example, TAPE approved facilities, have monthly inspection requirements but the Permit has yearly inspection requirements. Add clarifying language to the emerging technologies section.	City of Tacoma
Glossary	Erosion and sediment control facilities could work through filtration or other means - the definition provided appears to state that these sorts of facilities only work via settling. Consider revising.	City of Tacoma
Glossary	Is a duplex considered a multifamily property? What about a triplex? Provide the minimum number of units to be considered multi-family. Typical land use definitions consider multi-family to be 4 units or more.	City of Tacoma
Glossary	Consider adding structure construction as an example of a new impervious surface under the definition of new impervious surface. As written, the definition is specific to road type construction.	City of Tacoma