2024 Western Washington SWMMWW (S5.C.5) Ad Hoc Committee

See attached White Paper produced by the 2024 Western Washington Ad Hoc Stormwater Management Manual for Western Washington (SWMMWW) Ad Hoc Committee.

2024-2029 NPDES Stormwater General Permit Reissuance Ad Hoc Committee – New Development, Redevelopment, and Construction, Stormwater Management Manual (SWMM)

Background

Catalyzed by the 2018 Ad Hoc Process, the Washington State Department of Ecology (Ecology) requested an Ad Hoc Process for the 2024 Permit Reissuances. The Ad Hoc Process is meant to provide Ecology with a series of white papers that provide suggestions on Permit changes.

The SWMM Ad Hoc Committee was made up of the following committee members:

Name	**Jurisdiction**
Deanna Seaman	Port of Tacoma
Mieke Hoppin	City of Tacoma
Shawn Christensen	Skagit County
Shannon Peterson	Thurston County
Cindy Cullen	City of Everett
Bill Lief	Snohomish County
Cory Olson	Snohomish County
Jane Dewell	Port of Seattle
Andy Wargo	Skagit County
Mark Wilgus	King County
Scott McQuary	City of Redmond
Jackie Caldwell	City of Camas
Timmie Maturan-Lee	Washington Military Department
Kevin Evans	City of Renton
Alex Nguyen	WSDOT
Olivia Torres Stagner	WSDOT
Garrett Starks	WSDOT

The SWMM Ad Hoc Committee participated in a series of 5 meetings with follow-up email communication to develop this White Paper. The SWMM Ad Hoc Committee discussed the following 12 Issue Statements. The Committee as a whole may not have agreed on a specific issue or solution. To show the Committee's agreements or interest, attached to this White Paper are anonymous results from a poll where the poll participants were asked to provide their agreement with the items as written below. The poll is ranked from Strongly Agree to Strongly Disagree. Participants were given the option to anonymously write comments within the poll as well. Those are also attached for reference.

Issue #1: Current Best Management Practice (BMP) Options: Design, Constructability, Maintainability

The 1992 SWMM for Puget Sound Basin (The Technical Manual) set the general design standards for many BMPs that still exist in the SWMM. It is our understanding that the design standards in the SWMM were developed based upon typical engineering

standards from the 1970s and 1980s, information from the International BMP Database, information from other jurisdictions across the nation, and Ecology staff knowledge and assumptions. Ecology has updated BMPs in the SWMM throughout the years – in most instances to add clarifying language or tighten specifications. There are concerns that the BMP selections did not fully consider constructability and maintainability and did not rely on feedback from field personnel in a comprehensive and systematic manner.

Further, the current manual drives designers and owners to select the least expensive BMP option, not necessarily the BMP most appropriate for the project. What may be inexpensive to design and install may not be maintainable in the future by the user(s) and thus may not function to control flows and pollutants. The way the regulations currently lead the design output does not always lead to a system that is constructible or maintainable.

Ecology has not done a comprehensive review of BMPs in the SWMM with exception of the Low Impact Development (LID) Practices when a separate LID Committee was created to evaluate LID practices in 2007.

Suggestion to Address Issue #1

The Committee suggests that a comprehensive review of design standards, constructability, maintainability, and cost be completed by a 3rd Party (aka a SWMM Assessment). This assessment should include:

- A review of other jurisdictions' BMP Design Standards across the country focusing on areas with similar rainfall distributions to Western Washington.
- A series of meetings with both Permittee staff and private contractors to discuss constructability and maintainability of BMPs.
- A cost analysis of all BMPs including cost to construct and cost to maintain.

The results from the SWMM Assessment would be used as guidance for updating BMP design standards contained in the SWMM and could be used to create a matrix comparing the effectiveness, costs, constructability, and maintainability of various BMPs.

BMP options in the SWMM should be robust, workable, and not drive developers to choose the cheapest option or be overly driven by regulations to force choosing BMPs that may not be easily constructible or maintainable.

This Committee suggests that a committee be created to review and approve the Request for Proposal for the Outside Assessment Project and that a committee be created to review the comprehensive assessment and provide suggestions based upon the report. The committee should, at minimum, be made of a mix of Phase I, Phase II jurisdictions (including Operation and Maintenance staff), and members of the development community including project engineers and construction staff.

Issue #2: Additional BMP Guidance Needed

Jurisdictions face questions from development staff (both internal and external) on subjects not contained in the SWMM but related to new and redevelopment stormwater mitigation. Some examples include:

- Many schools and parks that undergo redevelopment upgrade from natural fields to turf fields. The manual should provide guidance on modeling artificial turf and evaluating artificial turf per the Minimum Requirement thresholds.
- Temporary sediment tanks are a common TESC BMP used but Ecology has not provided design guidance. The manual should provide design guidance for temporary sediment tanks.
- It is ideal for projects to attempt to utilize existing stormwater features on a site when they are available to minimize site disturbance and utilize existing facilities that are already budgeted for inspection and maintenance. The Manual should provide guidance to appropriately model usable capacity within existing flow control and/or stormwater treatment BMPs constructed using previously approved standards.

Suggestion to Address Issue #2

Ecology creates a web-based location where jurisdictions can suggest subjects that need additional guidance, describe the best way to receive that guidance (how to document, language in the SWMM, etc.), and level of need. Based upon the need, Ecology creates guidance (not additional requirements) that further clarifies Ecology intent regarding a range of subjects that jurisdictions commonly need further clarification.

It is this Committee's understanding that at times Ecology provides guidance to jurisdictions in terms of both manual intent and "how to guidance". It is suggested that any guidance Ecology provides be made into formal intent or how to guidance and be made readily available on Ecology's website. It may not be necessary to include this guidance in the SWMM itself.

Issue #3: Minimum Requirement #8 – Wetland Protection

There are concerns that as written, flow control standards may not be appropriately installed because MR#8 takes precedence over MR#7. For example, if a wetland is already altered due to existing development, should MR #7 take precedence with a project?

Wetland protection standards may not protect wetlands depending on proximity of project to the wetland.

Do incremental flow control standards placed on small projects actually protect wetlands given the overall wetland watershed size? For example, if the project is only 5% of the total contributing basin to the wetland does the project really affect the wetland?

Suggestion to Address Issue #3

Ecology should conduct a comprehensive analysis of several wetlands of varying size to see if small project mitigation relative to overall wetland watershed size affects wetland function over time.

Create limits as to when MR#8 applies in terms of distance from project to wetland.

Allow alternative modeling schemes such as a comparison to a theoretical predeveloped condition. If there are multiple projects impacting the same wetland, allow for a combined effect and shared mitigation apportioned by %flow of each project to the wetland.

Issue #4 – Terms and Definitions

The terms and definitions contained in the SWMM conflict with terms and conditions in other permits, including the Phase I, Phase 2, and the Industrial Stormwater General Permit

Examples:

- Outfall is used in many instances in the SWMM to refer to discharge locations – but not specifically to discharge into receiving waters.
- The use of the terms public and private are confusing. Are these based on the stormwater system or entity or another standard?

Suggestion to Address Issue #4

Complete a comprehensive search of all terms used within the Permit to ensure their meaning is consistent in the SWMM or that terms are appropriately defined within each context. Ensure consistency in all terms throughout the SWMM (ex. Stormwater, discharge, stormwater discharge, etc.) and throughout the various Ecology issued Permits as appropriate. Ensure consistency with Fact Sheets, Guidance documents, and FAQs. This eliminates misinterpretation and cherry picking the definition that fits the need of the user rather than the actual regulatory / Ecology intent.

Issue #5: Climate Impacts

Should Ecology consider future climate impacts and require designers to analyze and incorporate climate impacts or is current BMP design sufficient?

Suggestion to Address Issue #5

Ecology should continue to support the study of defensible methods for predicting future rainfall increases and sea level rise due to climate impacts and what impacts those increases are likely to cause in the future to constructed and natural systems. Ecology should support a study to determine how impacts might be addressed via regulations, capital projects, and/or land use/zoning changes. Any new regulations should carefully consider the timeline of projected impacts, the design life of various BMPs, and how to manage aging infrastructure currently in the built environment. New regulations should not be developed or considered until sound science regarding climate impacts is developed and agreed upon at a national level. For communities

that are already mostly built, new regulations on new development will not have a large impact on mitigating impacts of rainfall increases or sea level rise.

One option to support the study of defensible methods might be for Ecology to model various scenarios based on completed climate action plan scenarios developed in Pierce, King, Snohomish, and Clark counties and see if BMP design changes significantly enough given different hydrologic information.

Ecology should consider updating historical storm records used in WWHM on a regular and defined basis – such as every Permit term.

Issue #6: The LID List Approach

The LID List Approach (versus the LID Performance Standard) is a commonly used approach by many developers because in most cases a Professional Engineer is not needed. There are concerns that the list hierarchy does not appropriately consider facility function, constructability, and maintenance and may provide preference to facilities that do not provide greater hydrologic benefits. The hierarchical approach results in higher cost BMPs that are not as easy to maintain (ex. Rain gardens/permeable pavement vs infiltration trenches) and that in the long run will hydrologically perform worse given maintainability and constructability issues than lower ranked BMPs that are easier to install and maintain and are less often replaced by homeowners.

Suggestion to Address Issue #6

Reconsider the LID List Approach hierarchy by adding in additional factors such as inspection, constructability and maintainability considering factors such as evaluation over time (ex. Are specialized consultants or tests needed to ensure function?).

Conduct real world analyses of performance of MR #5 BMPs over time. There are many real-world scenarios of preferred facilities failing over short periods of time (especially permeable pavement) due to constructability issues.

Issue #7: SWMM BMPs and Facilities Covered Under other NPDES Permits

New development, redevelopment, and construction site projects located on sites that already fall under separate NPDES Permits – such as the Industrial Stormwater General Permit (ISGP) or individual permits should be allowed greater flexibility in BMP choice and design.

Suggestion to Address Issue #7

Incorporate appropriate language in various Permits to require greater coordination amongst the various Permits.

Ecology should develop a comprehensive guidance document regarding BMP selection on sites that have existing site specific BMPs installed and designed to treat specific contaminants of concern for the site and how new and redevelopment projects may be allowed to utilize those BMPs. This may require the TAPE program to more rapidly consider approved technologies for different permits. An example of this is Chitosan

Enhanced Sand Filtration; this technology is general use level designation (GULD) for the Construction stormwater general permit but requires specific Ecology approval for use on a site with an ISGP.

Update TAPE designations to allow use of proven technologies on any permit addressing the pollutant for which the technology was approved.

Issue #8: SWMM Usability and Plain Talk

The SWMM is written as a technical engineering manual which makes sense for many BMPs but may not be appropriate for others. In particular, the source control BMPs are not usable for their audience. The SWMM needs to be accessible for one-time users and non-engineers.

Suggestion to Address Issue #8

Make source control BMPs available as individual handouts. Transcreate all source control BMPs for the most common communities in Western Washington, and plain talk all for usability.

Create more companion documents such as Tip Sheets, Activity Sheets, Calculators, case studies etc. to make the SWMM an easier to use document. These likely do not need to be created from scratch but seeing what other jurisdictions have available and adapting for widespread use.

Issue #9: SWMM Equivalency Process

The 2007-2012, 2012-2018, and 2019-2024 Permits included provisions that require approval of an equivalent manual by Ecology.

It does not appear that Ecology ever formalized the process in which Ecology determines a Manual to be equivalent. Because of this, the equivalency process is different for each jurisdiction dependent upon the Ecology staff who complete the equivalency process. This difference in process was very apparent during the 2020 Equivalency Process.

Suggestion to Address Issue #9

Have an independent council review the Permit and Permit history to see if there are any legal requirements for the equivalency process. The PCHB did require that Ecology include a public comment period for the public to provide comment on proposed equivalent manuals, but it is unclear if that also warrants Ecology's review and approval of these manuals.

Have the independent council create an equivalency review procedure document that clearly shows Ecology and Permittee responsibility and ensures that reviews are equitable amongst jurisdictions.

Issue #10: Requirement to inspect residential developments every 6 Months until 90% of lots are constructed is an onerous tracking process.

All other inspection requirements in the Permit are based upon one year inspection goals except for this requirement. Having a different inspection goal requires separate tracking systems, which is onerous. If active construction is occurring on a site, applicants are required to have sites inspected at certain intervals appropriate for the project.

Suggestion to Address Issue #10

Remove this requirement as the inspections are occurring under the new development, redevelopment, and construction site inspections. Those required inspections are not based upon specific timeframes but based upon how construction may evolve over a project and are more relevant to real-world conditions than an arbitrary 6-month inspection.

Item #11: Clarification of Current Items within the SWMM

In many instances throughout the SWMM certain terms and concepts are not well defined leading to confusion amongst those designing projects and those reviewing projects. The committee understands that there is built in ambiguity in the SWMM to allow jurisdictions to decide on certain definitions and standards but there is concern that certain jurisdictions have staff and time to appropriately define and interpret terms and concepts while others do not.

Examples include:

- BMP T5.10A – Roof Downspout Infiltration. Is this BMP intended only for residential development? Does commercial/industrial development have to consider this BMP? If the requirement is that this BMP applies to commercial/industrial redevelopment – this may lead to the scenario that commercial/industrial sites are now subject to UIC Requirements – is that the intent?
- Redevelopment Thresholds. There is no clear definition for commercial and industrial. Would schools be considered commercial? There is no clear definition for road-related projects. There is no clear methodology for calculating proposed and existing improvement values.
- Applicability of the Minimum Requirements: The concepts of project, project site, and site are often confused, and application of the Minimum Requirements are directly affected by these definitions. Ecology uses the term project generically in some instances but in other instances the term is meant to refer to the defined term in the glossary. Ambiguity in the intent means that different jurisdictions will apply MRs differently. For example, some jurisdictions consider work within the ROW to be a separate project from work on an individual property even though the work is directly related so there would be two separate projects with different thresholds while other jurisdictions might tie the work together because it is associated.

Suggestion to Address Item #11:

Ecology develops a series of interpretation document that accompanies the SWMM to show Ecology's intent when developing language. Ecology should request from jurisdictions the most effective implementation tool (how to document, interpretation document, language within the SWMM, etc.) This could be similar to the Fact Sheet Ecology issues with each permit. These interpretation documents should include examples and help guide jurisdictions in developing their interpretation of the SWMM.

Item #12: Errata

The committee noted several errata they would like to point out.

- BMP S409: BMPs for Fueling at Dedicated Stations appears to have an incorrect UFC reference.
- Page 276: Table outline not complete. Additionally, this table appears to be WSDOT 9-03.9(2) so consider just referencing as was done with WSDOT 9-03.9(1) above.
- Page 229: Should state 6 mil not 0.06 millimeters. A mil in thickness is not the same as a millimeter.
- Page 795 – "Underdrain Pipe" – change title to keep with section.
- Page 797 – Typo: Orifice and Other Flow Control sStructures.
- Page 780: There are two commas in the infeasibility criteria introduction – second sentence.
- Page 791: Place a space between % and for.
- Page 808: Under Applications and Limitations – 2nd paragraph "od" should be "of".
- Page 847: Under the 4th bullet, "mixt" should read "mix".
- Page 880: The second paragraph under Design Criteria there should be a space between water and to.
- Page 907: There should be a space between treatment and wetlands in the first sentence.
- Ensure consistency amongst the use of groundwater and ground water. Use groundwater.

Suggestion to Address Item #12:

Update SWMM to address errata. Create a process to easily track and show errata within the SWMM.

Survey Monkey Results

Item #1 - Current BMP Options: Design, Constructability, Maintainability

Answer Choices	Responses (%)	Responses (#)
Strongly Agree	71.43	5
Agree	28.57	2
Neither Agree nor Disagree	0.00	0
Disagree	0.00	0
Strongly Disagree	0.00	0
Total	100	7

Comments on Item #1:

1. I support the general idea of an audit of standards here, but I feel some the examples and suggestions listed already have "answers". There is a lot of information on costs to build and maintain LID BMPs--the question is should and will Ecology change their LID BMP selection hierarchy to consider these factors instead of absolute flow control/infiltration performance as done currently. The question about WWHM error bars is a typical "developer" question: for flow control, designers meeting duration standards are already allowed to exceed portions of the predeveloped conditions curve for 50% of the length as long as the excursion is not more than 10% and not exceeded at lower threshold. There is also an exemption and adjustment process that can be used for unique situations--I don't like including this example. Re: Biofiltration swales--a better question is if they are actually effective and maintainable--however they're designed using flow rates (from SBUH/WWHM) because the pollutant removal mechanism is particle settling--thence tied to residence time/flow rate/length. I like the focus on ensuring updated and current designs are constructible, maintainable, and that their effectiveness and prioritization (in the LID list, particularly) considers long term effectiveness with cost and maintainability a factor in that determination.

2. Ecology should also consider the costs for the construction and maintenance of BMPs. Ideally, a matrix would be provided comparing the effectiveness, costs, constructability, and maintainability for each BMP.

3. Ease of inspection might fall under maintainability, perhaps? Clarity on what triggers which types of maintenance requirements for specific BMPs would be helpful for inspectors tasked with determining, with regional consistency, what is required of facility operators to address deficiencies?

Item #2: Additional BMP Guidance Needed

Answer Choices	Responses (%)	Responses (#)
Strongly Agree	28.57	2
Agree	57.14	4
Neither Agree nor Disagree	0.00	0
Disagree	0.00	0
Strongly Disagree	14.29	1
Total	100	7

Comments on Item #2:

1. In my opinion, it is not good practice to ask Ecology, or anyone else, for that matter, for "guidance" for things we can answer and decide ourselves. Ecology guidance on each of the included examples could mean new requirements that may not work or achieve their intended purposes for individual jurisdictions. None of these items should be included in the white paper, IMO.

2. On board with the 1st two topics, but the concept of utilizing existing stormwater conveyance infrastructure on redevelopment projects could be problematic, if I understand the topic correctly. This redevelopment is usually the opportunity to employ BMPs that are more protective than what was utilized originally.

3. Ecology might want to consider asking municipalities what should be guidance/how to documents versus language within the SWMM, i.e. what is best for the audience.

Item #3: Minimum Requirement #8: Wetlands Protection

Answer Choices	Responses (%)	Responses (#)
Strongly Agree	14.29	1
Agree	57.14	4
Neither Agree nor Disagree	28.57	2
Disagree	0.00	0
Strongly Disagree	0	0
Total	100	7

Comments on Item #3:

1. I don't like the suggestion to address issue #3 ,e.g. modeling flows to wetlands aiming for theoretical predeveloped condition-- it may result in wetlands starved of water. These decisions pitting "flow control" vs "wetland protection" should be made on a site by site basis that considers wetland health, existing downstream problems between site and wetland, etc. I'm not sure what is being suggested re "allowing" for cumulative impact analysis--if I I'm understanding it correctly, it seems to put more on the developer w/too many unknowns re: redevelopment trends on other sites/parcels. The only item I like on this issue list is asking Ecology to discover and establish a threshold ratio (developed area of site compared to size of total basin to a wetland) below which wetland hydrology protection analyses is NOT required because it is shown to be negligible or always falls w/in wetland protection hydrology guideline performance standards.

2. Consider allowing the hydroperiod model to use the predevelopment runoff characteristics for the analysis rather than existing conditions. For Method 1, consider implementing different standards for UGA/non-UGA or Development/Redevelopment projects. Smaller projects may not have a large impact on a wetland or have access to the entire wetland for field data collection.

3. More examples of how this information is coming in from plan review may be helpful to really understand the issues.

Item #4: Terms and Definitions

Answer Choices	Responses (%)	Responses (#)
Strongly Agree	71.43	5
Agree	14.29	1
Neither Agree nor Disagree	0.00	0
Disagree	14.29	1
Strongly Disagree	0.00	0
Total	100	7

Comments on Item #4:

1. As long as each regulatory document is internally consistent, this is not a problem worth solving, in my opinion. If we amend this item to be more specific to looking at internal consistency, I would support.

2. Terms and definitions should be consistent across regulatory documents.

3. Language uniformity is critical to minimizing points of conflict between regulated, regulators, and third parties.

Item #5: Climate Impacts

Answer Choices	Responses (%)	Responses (#)
Strongly Agree	28.57	2
Agree	28.57	2
Neither Agree nor Disagree	42.86	3
Disagree	0.00	0
Strongly Disagree	0.00	0
Total	100	7

Comments on Item #5:

1. Asking for Ecology to support the ongoing studies happening regionally is acceptable. I would delete the "any new regs.." sentence. We'd prefer that Ecology not insert new regulations re: flow control/climate change until sufficient study has occurred. It is unlikely that the potentially deleterious impacts of climate change caused increased precipitation can be solved on the back of regulations applied to new development alone--there is too much developed (and undeveloped!) land out there that will be subject to higher precipitation that the new regs "won't touch". Facility lifespans vs timing of climate impacts is also a consideration. Is the LID mantra of "infiltrate everything you can" going to be effective with higher precip rates and saturated winter soils? Would larger detention systems be a better winter "play"? Inquiring minds want to know. Best approach is to study what may occur on the ground and then devise a strategy to mitigate those potential effects in a sensible and cost effective manner--the jury is out on whether and how much 'make all new ponds bigger' will be the/part of a solution.

2. If this is done in a way that is sensible, not pie in the sky. Further, for installed assets with long remaining lifespan yet insufficient capacity for microburst storms and sea level rise, there needs to be a push to require capacity get built.

3. Concern that this may lead to a bigger is better scenario which may not take into account factors such as housing needs, etc.

Item #6: The LID List Approach

Answer Choices	Responses (%)	Responses (#)
Strongly Agree	71.43	5
Agree	14.29	1
Neither Agree nor Disagree	14.29	1
Disagree	0.00	0
Strongly Disagree	0.00	0
Total	100	7

Comment on Item #6:

1. Another potential factor to consider for a selection list could be how complicated it is to evaluate the BMP performance over time. Is the BMP fairly straight forward for municipal inspectors to evaluate condition, or does it require specialized consultants or tests to determine any maintenance requirements?

Item #7: SWMM BMPs and Facilities Covered Under other NPDES Permits

Answer Choices	Responses (%)	Responses (#)
Strongly Agree	28.57	2
Agree	57.14	4
Neither Agree nor Disagree	14.29	1
Disagree	0.00	0
Strongly Disagree	0.00	0
Total	100	7

Comments on Item #7:

1. Need to amend the comment to "not require" as long as flow control and water quality treatment are addressed under the separate permits.

Item #8: SWMM Usability and Plain Talk

Answer Choices	Responses (%)	Responses (#)
Strongly Agree	28.57	2
Agree	42.86	3
Neither Agree nor Disagree	28.57	2
Disagree	0.00	0
Strongly Disagree	0.00	0
Total	100	7

Comment on Item #8:

1. The SWMM should be made more accessible for one-time users and non-engineers.

Item #9: SWMM Equivalency Process

Answer Choices	Responses (%)	Responses (#)
Strongly Agree	28.57	2
Agree	28.57	2
Neither Agree nor Disagree	42.86	3
Disagree	0.00	0
Strongly Disagree	0.00	0
Total	100	7

Comments on Item #9:

1. I do agree on the issue of getting more clarity and equity across jurisdictions from Ecology 'equivalency' reviewers--as long as what is equal remains reasonable and flexible.

Item #10: Requirement to inspect residential developments every 6 months until 90% of lots are constructed is an onerous tracking process

Answer Choices	Responses (%)	Responses (#)
Strongly Agree	14.29	1
Agree	14.29	1
Neither Agree nor Disagree	71.43	5
Disagree	0.00	0
Strongly Disagree	0.00	0
Total	100	7

Comments on Item #10:

1. It is possible that inspection emphasis changes throughout a residential development projects different phases. Early on there is great emphasis on TESC. After utilities and roads are complete there can be a lack of emphasis on stormwater pollution prevention on the part of those inspecting houses as they tend to be focused on the many aspects of making sure that accomplished per building code. In addition, if a plat is having houses completed over the course of several years for whatever reason, then the TESC BMPs can be neglected and end up failing if not regularly inspected. Perhaps Ecology can develop and quick and simple tracking process that meets the intent but is less onerous to maintain. Maybe there are current examples that other jurisdictions have developed that is simple and efficient?

Item #11 - Clarification of Current Items within the SWMM.

Answer Choices	Responses (%)	Responses (#)
Strongly Agree	14.29	1
Agree	42.86	3
Neither Agree nor Disagree	42.86	3
Disagree	0.00	0
Strongly Disagree	0.00	0
Total	100	7

Comments on Item #11:

1. Again, it would be appropriate to reach out to end user to see if interpretation/how to guidance is most appropriate in SWMM or as separate documents.

Item #12: Errata

Answer Choices	Responses (%)	Responses (#)
Strongly Agree	28.57	2
Agree	42.86	3
Neither Agree nor Disagree	28.57	2
Disagree	0.00	0
Strongly Disagree	0.00	0
Total	100	7

Comments on Item #12:

1. The priority should be to address outdated references in BMPs that impact design requirements.