Consolidated VADEQ Comments
on Street Cleaning Expert Panel Report

The following comments were received from Bill Keeling and Jamie Bauer of VADEQ by the February 19 deadline established by the WTWG chair. The comments in blue font represent the combined response of the panel coordinator and the Scenario Builder team.

As indicated on the last WTWG call my understanding of the BMP Protocol allows the WTWG to review and comment on not only the SB and reporting appendix but the entire report and its recommendations. Therefore, please consider the following not in any specific order:

1. We understood that CBP was trying to move away from the use of the "Simple" Method for crediting BMPs within CBP modeling systems because this is a site scale screening tool. Though this tool may be useful on small scale site specific projects it utilizes different assumptions on loadings than the regional application of the CBP WSM.

    The technical rationale for adapting the WinSLAMM model to estimate end-of-pipe sediment loads is documented in Section 5.0 and 5.1 of the Expert Panel report. The model allowed for a large range of street cleaning scenarios to be simulated so that the panel could offer a wider range of street cleaning options for Bay communities.

    More documentation on the model can be found in Tetra Tech, Inc. (2015) and references contained therein. The WinSLAMM model is in no way related to the Simple Method which has been used to calculate pollutant loads for small urban watersheds (Schueler, 1987).

2. Explicit reductions from an implicitly simulated set of sources requires caution. Like other BMPs that have used tools like the Simple Method or other protocols to calculate or estimate loadings or loadings reductions derived outside of the CBP modeling environment explicitly we could end up with more reductions calculated and reported than available in a given land river segment. Since streets are only a portion of the available loading sources simulated and catch basins potentially integrate multiple land uses VA recommends a cap be put on the reductions allowed. For example regardless of any mass loading reported reduced the reductions will be capped at 30% of the available nutrient and sediment loadings for any given land river segment.

    Given that street cleaning achieves a relatively low nutrient removal rates (zero to 10%), it is not likely that these reductions will exceed the nutrient load generated by impervious cover. However, we do not object to setting a maximum load

reduction cap for any urban BMP. Matt Johnston has drafted some standard language in the Scenario Builder appendix to establish reduction caps.

3. It seems inconsistent to allow mass loadings reductions from catchment clean outs but eliminate that from street sweeping. Please refer to the communication Jaime Bauer provided regarding retaining mass loadings reporting for street sweeping BMPs (see below).

As previously indicated Virginia has concerns that the mass load approach for street sweeping will no longer be creditable after 2017, especially when the report endorses credit on a mass loading basis for storm drain clean out. We believe that there is merit to having permittees measure what is actually being collected and receive reduction credit for some percentage of nutrient and sediment that are removed. Virginia DEQ is committed to providing our MS4 permittees and other localities the opportunity to receive credit for real reductions. As such, without removal of the sunset clause we potentially create further disconnect between what is creditable towards permit compliance and what is creditable in the model.

We request that the following areas of the report be revised such that the mass loading is allowed and the sunset clause removed from the report:

☐ Page 7- 1st paragraph

☐ Page 46 (6.3 - Second bullet)

☐ Page 69 - A6

☐ Page 77 Response to Comment No. 10

Additionally, we recommend that a crediting methodology for mass loading be provided in the report similar to that in Section 6.4 that addresses storm drain clean outs.

Response: The panel was very emphatic about the need to sunset the mass loading method. Their rationale is clearly outlined in Response to Comment # 10 in Appendix G (Page 77).

A few additional points are offered below on why the panel rejected the mass loading method. First, the panel concluded that using two methods to report the same BMP has caused considerable confusion for local and state governments on how to consistently track and report it (i.e., acres or pounds). This is clearly evident in Table 3 of the report which shows the widely different street sweeping numbers submitted from year to year in most Bay states. Individual states have frequently switched back and forth on the methods used to credit the practice. In particular, VA mass loading numbers have ranged from 218,677 lbs to 75 million pounds in just a few years. The full table has been excerpted below.

Table 3. Summary of Street Cleaning Implementation, 2009-2014, as reported and credited in annual progress runs (acres and lbs)

YEAR	DC	DE	PA	WV	VA
2009	1 ac			218,000 lbs	632 ac
2010	1,631 ac			227,000 lbs	
2011	1,540 ac		619 ac		75,385,792 lbs
2012	1,539 ac		413 ac		
2013	1,526 ac	79,541 lbs	3,240,489 lbs	190,000 lbs	218,677 lbs
2014	1,531 ac	413,367 lbs	3,367,040 lbs	700,000 lbs	426,671 lbs

Second, street and storm drain cleaning are two distinct BMP types which need to be treated separately and deserve their own unique crediting protocol. Each practice addresses different types of solids with their own unique nutrient and carbon content, particle size distribution, mobility and delivery conditions.

Third, most communities have had great difficulty in meeting all the qualifying conditions to earn the removal credits under the old mass hopper credit approach (e.g., use of advanced technology, biweekly or more frequent sweeping, etc.). The panel found numerous instances where communities were significant over-claiming the sediment and nutrient load reductions either because they did not fully understand the qualifying conditions, or felt that VADEQ had exempted them from the sweeping frequency requirements in their most recent guidance for MS4s (May 18,2015 VA DEQ Memo on TMDL Action Plan Guidance, p. 5 and also Appendix V.G in same document).

Lastly, the Panel felt that the use of the qualifying lanes method, based on the WinSLAMM modeling, was the most scientifically defensible method to define sediment and nutrient reduction associated with street cleaning. Given that VADEQ has not provided any scientific support to justify retaining the mass hopper credit, the panel sees no reason to change its recommendations.

4. It was not exactly clear how the default nutrient enrichment ratios were derived. For clarity is the panel recommending a 7% or 0.07% TP enrichment for street solids (12% or 0.12% for COM) and similarly for TN is it 20% or 0.20%?

Thanks for catching the fact that there was no text in report referring to Table 18 which simply repeats the mid-point of the data for nutrient enrichment of street solids (see Table 10, Section 4.4., page 23). To avoid confusion, the Table will be deleted from the report, since the nutrient enrichment ratios are now directly hard-wired into the nutrient removal rates shown in Table 17. The user does not need to do any additional calculations relating to nutrient enrichment ratios.

To answer your question directly, the lower number is the appropriate nutrient enrichment ratio for streets solids (i.e., 0.07% for TP and 0.20% for TN).

5. The report indicated a calibrated model (WinSLAMM) was used and 960 different scenarios were run. Yet 65% or 624 of those scenarios resulted in zero or no benefit from the street sweeping scenario. So the recommended 11 BMPs were derived from the 336 scenarios that actually indicated some level of reduction. So it is not really 960 scenarios but 336 that were actually used for the presented BMP efficiencies. Is it possible the modeling was indicating much like the dearth of available literature that street sweeping really cannot be shown to produce detectible loadings reductions? What would the average reduction efficiencies be if those 624 null values were included in the efficiencies derivation? This seems much like ignoring studies that indicate a negative loading reduction by a BMP and only looking at the studies that show a positive reduction result.

   The expert panel elected to only show non-zero sediment reduction for various street cleaning practices. They reasoned that communities would not be interested in any street cleaning options that would earn them zero credit.

   Nearly all of the zero sediment reduction model runs were for mechanical broom sweepers for cleaning frequencies of monthly or less, which is why Table 17 has so few entries for mechanical broom sweeping technology.

   Folks who want to further investigate the sediment reduction rates for all 960 options can find them in the Tetra Tech (2015) report and accompanying scenario output spreadsheet.

6. It is the panel's recommendation to use the SCP-3 BMP as the default if a reporting jurisdiction has no other information on which to report. This assumes approximately 25 passes per year with efficiencies of 2% TN, 5% TP, and 11% TSS or on the higher end of the potential reductions from the 11 proposed street sweeping methods or BMPs. States usually report using defaults when they have insufficient information to specify with certainty a known and higher reduction BMP. Suggest if all a state is getting from a locality is street sweeping X lane miles or Y tons (mass) swept that the least effective panel recommended BMP be utilized as the default or SCP-11 BMP. This would create an incentive for a locality to provide the state reporting agency more information such as number of times the lane miles were swept using a specific or advanced sweeping technology and thereby getting the additional reductions. In a verification world it would seem prudent to allow minimum credit for minimal or default reporting verses assuming a higher level of reductions attributed to higher levels of effort and or advanced technologies that cannot be supported by the available reporting.

   The reporting default recommendation was made by the Scenario Builder team as part of Technical Appendix E for review and approval by the Watershed Technical Work Group in January 2016. The panel completely defers to the WTWG on choosing an appropriate default value. Matt Johnston has drafted language in the revised Scenario Builder Appendix to reflect your recommendation that a more conservative default value be defined for the practice.