

Date: April 21, 2016

To: Lucinda Power
U.S. EPA Chesapeake Bay Program

From: Tom Schueler
Expert Panel Coordinator

Re: Feedback on SCP-12 Proposal from the Street Cleaning Expert Panel

At the March 28, WQGIT meeting, several states requested that the expert panel provide feedback on the VADEQ proposal to create an alternative SCP-12 option (see Appendix A). To that end, I posed the following question to the entire panel:

Does the SCP-12 proposal have enough scientific merit to warrant adding it as an alternative street cleaning crediting option in your expert panel report?

The overall votes were as follows:

Yes:	2
Yes, but...	3
No:	5

As expected, the SCP-12 proposal has rekindled a long running technical debate among the panel about the mass loading credit. More detailed responses supporting their individual responses are provided below, although I have removed the names of each panelist.

Individual Responses

No. My response to the proposed alternative practice is "No". I have always held the position, and I believe the panel generally agrees, that measurement of what is contained within a sweeper hopper does not accurately represent what remains on the street. This residual street dirt is what becomes available for washoff and thus poses the most risk for Chesapeake Bay. It is true the contents of a hopper are technically what was removed from a street; however, we have little understanding of how much of this material would make it to a storm drain during a rain event. The WinSLAMM model accounts for this by including delivery functions based on storm characteristics. Furthermore, the proposed practice reads very similar to the previous panel's recommendation of using a "mass loading" calculation. The current panel rejected that approach based on the most recent available research.

Panelist 1

No. I do not believe this method should be incorporated as an approved approach. The catch basin clean out and street sweeping are indeed two separate BMPs and as such the nutrients and sediments should be accounted for separately. The panel spent many hours discussing these issues. For the street sweeping BMP the modeling approach accounted for as best as possible the effects of fate and transport. Analysis of the mass approach equation seems to show that it is extremely non-conservative and does not appropriate the results of the modeling approach.

Panelist 2

No. I do not recommend adopting SCP-12. The SCP-12 and WinSLAMM based crediting methods would be like comparing apples and oranges. It is a hard sell b/c the literature and expert panel recognizes the deficiencies in the sampling methods and study designs out there to capture the leaf litter contribution. I do not believe all nutrients captured through leaf litter by street sweepers should be credited. Therefore, to what degree do we discount this nutrient load? I think it would be nothing more than arm waving with a long list of assumptions at this point. The SCP-12 protocol is also similar to the inlet cleaning credit method. However, providing an alternative crediting method takes us back to 'shopping around' for the best credit for the same practice. The verification process does recommend that jurisdictions analyze a sample from street sweeping material. However, what is lacking in the report is what the CBP will do with this information that is collected. The intent of this recommendation for verification from the Panel was to build a database to better characterize the content of street sweeping material. Roger Bannerman recently communicated they are updating WinSLAMM to account for leaf litter.

Panelist 3

No. I vote NO. I hope I got my vote in under the wire. It's still April 15th!

Panelist 4

No. Short answer - no. - I do not believe this proposal (as currently written) has enough scientific merit to warrant adding it as an alternative street cleaning crediting option in the annual report.

Long answer - I think this proposal has some merit, but does not contain enough detail as is. I also do not think it is in line with the current panel recommendations. I am not against having this added as an alternative approach, but with the caveat that is a concession to accommodate potential policy issues with the current recommendations. I also think it needs more details (or at least some guidance in an appendix) on frequency of sampling and methodology. I have always been for collecting more data on this issue, so I want to support this effort, but I just feel like this one falls into the "day late and a dollar short" category.

Panelist 5

Yes, I think this additional option would benefit municipalities who are willing to go the extra mile with doing lab analysis. Especially since particle size distribution is addressed, I feel very comfortable with giving credit using this method.

Panelist 6

Yes. I agree that this proposal has enough merit to add it as an alternative. The qualifying conditions match what is being required for inlet cleaning, where the same type of credit based on load reduction is allowable. The requirement to analyze the collected material is good and should give us more info to go on to determine if some of the defaults we've been using are accurate.

Panelist 7

Yes, but the foot note is a little vague and leaves a lot of leeway to local jurisdictions for interpretation.

Panelist 8

Yes, but. I do think that SCP #12 has merit, so long as the jurisdiction has provided documentation of the SOP and verification that the number of samples analyzed is adequate to characterize the material removed. I would not expect that this method could be reported without that documentation.

Panelist 9

Yes, but that the additional details may need to be added regarding sampling frequency and method. A lot of stakeholders seem to still be calling for this method, despite the findings of the draft panel report. I believe the particle size restrictions will limit how valuable it truly is in many situations, but any opportunity to collect more data is useful.

Panelist 10

Other Technical Issues, Raised by the Panel

As far as the 30% cap, I don't see a rationale for it in the documentation. Is it an arbitrary number? A quick back-of-the-envelope comparison with SHA data shows that their inlet cleaning practice picks up a little under 2% of the load statewide for TN, 10% for TP, and 5% for TSS. This is for loads from both regulated pervious and impervious land use. However, 30% is approached in one County, where inlet cleaning is reducing TP and TSS by 27% and 26% respectively, so this could become an issue.

When I was looking at PCB TMDLs I was trying to figure out which particle sizes we could account for based on the fact that we have good modeling for TSS loads and BMP removal, and almost nothing on coarser sediment. I am by no means a soils expert, but my quick lit review indicated that TSS was made up of the silt and clay fraction, which

appears to go up to 62 microns, not 75. Maybe you could get some feedback on this from one of the scientists on the panel?

Appendix A

SCP – 12: Laboratory Analysis of Street Solids Mass

Collected material will be weighed and a statistically valid sample of the collected material sent to a laboratory to measure the:

- Dry weight of the wet material
- Particle size distribution of the material
- Average carbon, nitrogen and phosphorus content of the material

The results of the lab analysis would then be applied to the mass of the material collected to derive the reportable reductions:

- TSS mass = dry weight mass of fine fraction (≤ 75 microns) based on the lab analysis of particle size distribution
- TN mass = dry weight mass of nitrogen based on the lab analysis of nitrogen content
- TP mass = dry weight mass of phosphorus based on the lab analysis of phosphorus content

Credit under the SCP-12 practice would be capped annually at 30% of the impervious urban N, P and TSS in the LRSEG where the practice is reported.

*Qualifying conditions*¹

- (1) The loads must be tracked and verified using a field protocol to measure the mass or volume of solids collected. The locality must demonstrate that they have instituted a standard operating procedure (SOP) to keep track of the mass of the sediments and/or organic matter that are removed and a sampling method for laboratory analysis that is representative of mass collected
- (2) Material must be properly disposed so that it cannot migrate back into the watershed.

¹ During the WQGIT meeting, the proponents of SCM -12 indicated that there would be no qualifying conditions pertaining to either sweeper technology or cleaning frequency. When asked about how many hopper samples would be needed every year to earn the credit, the proposing agency indicated that it would be some subset of hopper loads, based on a "valid statistical design"

