Thanks for your comments. I wanted to clarify several issues and concerns that you raised in your e-mails relating to the two expert panel reports.

1. Background on the BMP Restoration Approach (VA).

The BMP restoration approach was advanced by a panelist from tidewater Virginia (LJ, Hansen) who noted that they had many decades old wet ponds whose performance could be boosted through major sediment cleanouts. Many of these ponds were never reported to the state, although some were.

The retrofit panel was initially concerned, as you are, that crediting incremental nutrient removal for major sediment cleanouts would be inconsistent with the model, and also susceptible to "gaming". However, the expert panel was swayed by the fact that the current CBP-approved removal rates for ponds and wetlands (see Table A-5 in Appendix A of the memo) had already been steeply discounted from actual monitored rates to account for poor design and maintenance in the real world. To put this into perspective, the CBP-approved rates are roughly half of those used in the new Virginia stormwater regulations (see Table A-4 in Appendix A).

Consequently, the panel felt that the new adjustor curve method could be used to derive incremental removal rates associated with this retrofit strategy, that would not be inconsistent with the model. The panel reasoned that the documented increase in stormwater treatment volume would achieve nutrient reductions in the real world, based on their review of the available science.

The panel also established several important qualifying conditions to ensure this retrofit strategy would not be abused, or associated with ongoing urban BMP maintenance. The additional qualifying condition that you proposed will provide further assurance.

In the end, the panel wanted to provide localities a broad range of retrofit options so that they could find the most cost-effective opportunities to achieve desired nutrient reductions. The panel also reasoned that the modest removal rates offered for the BMP restoration credit (9 to 14% for N and P respectively in the design example) would limit the use of this strategy to the few situations where it would produce real water quality improvements (given the considerable expense associated with pond dredging).

Both panels generally agreed that the old urban BMP removal rates (Table A-5) were outdated, and that going forward, the adjustor rate curve approach was preferable for dealing with stormwater retrofits and new LID practices.

I have modified the design example for BMP restoration to reflect your latest comments, as follows:

A wet pond was installed in Bay City in 1980, which captured 0.5 inches of runoff from the impervious cover of its contributing watershed. Bay City reported the pond to Bay State and it was included in CBWM input deck. Over time, however, the storage capacity of the wet pond was seriously diminished due to sedimentation and growth of invasive plants. The maintenance crew noted that 60% of the pond's storage capacity had been lost, resulting in an actual capacity of a mere 0.2 inches of runoff treatment.

Bay City DPW conducted a major dredging effort to clean out the sediments and replanted the pond with native species. As a result of the pond restoration, 0.3 inches of storage were recovered, increasing the total storage in the pond to its original design volume of 0.5 inches of runoff depth captured. Bay County employed the retrofit removal adjustor curves for ST practices to determine the incremental pollutant removal rates associated with the pond restoration, as follows:

	TP	TN	TSS
Restored Rate (0.5)	40%	25%	48%
Existing Rate (0.2)	26%	16%	33%
Incremental Removal Rate	14%	9%	15%

2. The CBWM Unit Load Baseline Issue (VA and PA)

Table C-1 in the retrofit memo (D-1 in the performance standards memo) has created a great deal of confusion, given the variability of pervious and impervious loads as simulated by the CBWM at the river-segment level and the state average level.

Both panel and the CBPO modeling team agreed that the removal rates derived from the adjustor curves would be applied to the actual load simulated for the CBWM river segment in which the drainage area of the BMP resides, regardless of whether it is a retrofit or a BMP system designed under new state performance standards.

Therefore, the unit load tables in the Appendices are not used in the BMP reduction calculations at all. They were included for a simple practical reason. Localities need some kind of baseline load to evaluate which of the many retrofit options in their community will achieve the greatest nutrient mass reductions for their stormwater retrofit investment…or to estimate the magnitude of the redevelopment stormwater credit over time. The panel was very clear that this baseline is only used for local WIP planning and tracking.

The unit loads for urban land may well change when Version 6 of the CBWM eventually hits the streets. All of the expert panels and the USWG are currently making recommendations to the CBPO modeling team to improve the quality of the urban land situation.

The panels approach of using a geographically and project-specific removal rate for each retrofit or development site will enable us to adjust aggregate nutrient reduction by urban BMPs, regardless of whether unit loads go up or down in the future.

3. Procedures for Local Reporting, Tracking and Verification (VA).

Both panels were extremely cognizant of the importance of these issues, and especially the need to recognize the nuances of how each state administers its stormwater programs, and to reduce the administrative burden on localities. The panels had representation from every state stormwater agency(as well as localities that would be affected), and spent more than half of their deliberations going over these recommendations in mind-numbing detail. In addition, the USWG devoted portions of four meetings over the last year to debate on reporting and verification issues.

What is contained in the memos represent the consensus that the panels finally agreed to, and that the stormwater agencies on the USWG subsequently approved. Re-opening this hard won consensus is simply not on the table at this point. (although the issue of non-MS4 verification was not satisfactorily resolved and is currently being worked on by a work group of the USWG).

4. Redoing the Legacy BMPs (VA)

Both Panels were clear that their recommendations applied to new BMPs or retrofits going forward, and that localities would not need to redo nutrient removal rates for urban BMPs that they have submitted up to this point.

The USWG and/or the Verification committee may encourage states to clean up their historical databases, and verify the existence/performance of these BMPs as part of their inspection and verification process, but these decisions are for another day, and not part of the panel recommendations.

5. Inadequate Review Time (VA).

While I am sympathetic that both memos are long and complex, and take a long time to review, they have been available to the USWG since April and the WWTG since May. CSN has met twice with the WTWG, and gone back to the USWG and expert panels to address these concerns. The proposed resolution to the WTWG concerns were provided to WTWG in the 7/2/2012 memo.

The CBP and sector experts have put a very high priority on expediting the expert panel process for the simple and important reasons that local and state governments are demanding to know what the BMP "rules of the road" are so they can make intelligent decisions on what combination of BMPs they will implement in the future.

Five additional urban BMP panels have been launched in the last few months to provide better BMP data, each of which takes an enormous amount of time to facilitate to consensus and then navigate through USWG/WTWG/WQGIT.

6. Groundwater Nitrate Issue (PA)

We solicited comment from the expert panels and the states after the June 11 USWG which went over the two nitrogen discount for the adjustor curves, and these responses were included in the July 2 memo as an attachment. EPA , three states and HRPDC supported the compromise approach to make only one discount factor, with PA dissenting that neither discount should be taken.

I would offer to PA that even with the discount, the N removal rates for both retrofits and new stormwater BMPs will be higher than they were in the past using the old CBP-approved rates in Table A-5. When they are applied to PA higher unit loads for urban lands (TableC-1/D-1), they will result in greater mass load reduction than is available for any other Bay state. Consequently, I don't think the relatively minor change in the N curve would have a great deal of impact on PA load reduction.