

**Date:** March 2, 2022  
**From:** David Wood and Tom Schueler  
Chesapeake Stormwater Network  
**To:** Urban Stormwater Work Group  
**Re:** Formation of Scoping Team for Urban Nutrient Management Data

### **Feedback Requested**

1. The USWG will be asked to affirm that urban nutrient management is a high priority for the workgroup, and that it should be part of our workplan in 2022.
2. The USWG will be asked to provide a “thumbs-up” or “thumbs-down” on this proposed approach. Feedback on specific scope details can be provided via email to David and Norm by March 31<sup>st</sup>.
3. Members who are interested in participating on the proposed ad-hoc team should volunteer, and/or recommend a possible expert whom we should reach out to, by March 31<sup>st</sup>.

### **Background**

The Urban Nutrient Management expert panel report was first approved nearly 10 years ago, in 2013. In the years since, the Chesapeake Bay Program has updated their model from Phase 5.3.2 to Phase 6, adopted a new BMP verification framework, and made multiple adjustments to how nutrients are applied in the urban sector. With each of these changes, crediting urban nutrient management remained a challenge due to a number of factors, including:

- *High Variability in Urban Nutrient Application Rates:* In June 2016, the USWG agreed to a method for the Phase 6 model to vary urban nutrient application rates by jurisdiction, over time. The method used AAPFCO fertilizer sales data for 1985-2012 and calculated a 3-year rolling average. The method assumed non-farm fertilizer mass was equal to the difference between farm mass and the total mass. Non-farm fertilizer mass was then distributed across the turfgrass acres for each year in each jurisdiction. The resulting year-to-year variability in application rates are difficult to explain, and the workgroup is currently considering a new method that removes outliers prior to calculating the 3-year rolling average.
- *Lapsing Credit for State-wide Fertilizer Legislation:* State-wide P-reduction credit for fertilizer legislation expired in 2016. The intention was to replace the credit with improved, state-reported estimates of P fertilizer applications to pervious land. These data have largely not materialized, either due to lack of availability, or difficulties in tracking and reporting. Using the current method

that relies on AAPFCO non-farm fertilizer data, any impacts from state fertilizer legislation have been difficult to detect.

- *Differentiation of Fertilized and Non-fertilized Land:* The current urban nutrient application rate assumes 50% of all urban turfgrass acres is fertilized, then distributes the loading rate evenly across all turfgrass acres in the watershed. This method theoretically eases tracking and reporting burdens related to fertilizer application, but has the effect of likely overestimating nutrient loads from urban land uses on un-fertilized properties, while complicating crediting opportunities for those landowners.
- *Tracking, Reporting and Verification of UNM Plans:* Individual UNM plans have not been widely reported by the states. There remain real-world challenges with UNM delivery, and since the expert panel report was finalized, the Bay Program has adopted the Basin-wide Verification Framework. Back in 2013, the panel could not agree on what elements of UNM could actually be inspected during an on-site visit, nor a numeric threshold for the intensity of sub-sampling to provide acceptable verification data.

### **Proposed Data Evaluation Team**

Following the discussion at the January 2022 USWG meeting, the workgroup decided that due to the large potential scope of revisiting UNM, the effort should be phased to address the highest priorities, first. The conclusion was that the continuing lack of data in multiple areas, seems to be the biggest hurdle. Therefore, a small, ad-hoc team will be formed to search out new data and determine if there is enough to address the most critical issues with the dated UNM expert panel report, and if a new panel is needed.

The focus of the effort is to inform better methods for crediting state fertilizer legislation, determine whether data exists to support a credit for non-fertilized urban lands, and investigate ways to better streamline tracking, reporting and verification.

<b>Approach</b>	Ad-hoc scoping team to review new research and data sources on non-farm fertilizer sales, application, and verification.
<b>Team</b>	6-8 participants, to be determined. CSN to coordinate, with intern support.
<b>Timing</b>	4-6 month effort beginning roughly in August, 2022.
<b>Funding</b>	Available via CSN's role as USWG coordinator.
<b>Product</b>	Memo to USWG detailing findings from new research and data availability. Memo will recommend a path forward for the UNM panel report and urban nutrient application rates based on the results.

### **Overview of Key Scoping Questions**

- Crediting State Fertilizer Legislation
  - Can we re-approach fertilizer industry to learn anything new about sales and trends in relation to state fertilizer laws?

- Are there other data sources that can inform urban nutrient application rates? Specifically, are there any new sources of state-generated data, as the expert panel originally hoped?
- Crediting Non-fertilized Urban Land
  - At what scale are fertilizer sales and use data available? Is there any way to better segment sales data, or a new method for distributing loads across urban land uses that would allow crediting on non-fertilized acres?
  - Are there streamlined methods of tracking and reporting that would allow this type of credit without undue burden on the local and state agencies?
- Streamlined Tracking, Reporting and Verification
  - Aside from industry data, has other research been conducted by academia, NGOs, or regulators, on compliance with state fertilizer laws?
  - Do any of the above entities have data on long-term compliance with individual UNM plans?
  - What citizen science data are available?
- Phase 7 Watershed Model\*
  - What improvements in both urban nutrient application and physical process simulation can we recommend for Phase 7

\*Note that if this task is part of the scope, it may need to begin on an earlier timeframe.