Maryland Department of the Environment request for expert feedback on Impervious Disconnection Expert Panel's protocol methods

The Chesapeake Bay Program's (CBP) Urban Stormwater Work Group (USWG) convened an expert panel to evaluate the nutrient and sediment removal, and runoff reduction benefits associated with disconnecting existing impervious cover runoff from stormwater drainage systems. The expert panel's draft report includes a protocol for estimating runoff reduction and pollutant removal associated with directing impervious area runoff to areas of modified (e.g., compost amended) soils. This protocol includes methods for assessing the benefit of impervious area disconnection and soil amendments by estimating changes in the hydraulic properties (e.g., bulk density, saturated hydraulic conductivity or k_{sat}, water holding capacity) of the amended soils and relating these changes to a runoff curve number (RCN) based on the Natural Resources Conservation Service (NRCS) RCN Method.

The use of soil decompaction and soil amendments to reduce runoff has been well documented in literature. However, discrepancies in soil amendment type, amount, depth of incorporation, impervious area being disconnected, quantity and timing of monitored storm events (or rainfall simulation), and differences in reported metrics between published sources, prevented the expert panel from simply using an average (or median) of study results. As a result, the method developed uses a standard of one inch of rainfall and the RCN method for a conservative and reproducible approach for estimating runoff reduction benefits in a large number of situations. The expert panel chose to use the RCN method (over more rigorous rainfall runoff models) because of its prevalence in State stormwater manuals. For example, in the 2000 Maryland Stormwater Design Manual (MDE, 2000 & 2009), the RCN method and a variation of the Small Storm Hydrology Method (Claytor & Schueler, 1996 and Pitt, 2003) are used to better capture rainfall-runoff relationships over the full range of storm events.

The expert panel recognized that the RCN method is limited in capturing differences in rainfall intensity. The RCN method is also limited in the ability to accurately predict runoff amounts for smaller, more frequent storm events like one inch of rainfall. However, the expert panel initially decided that the popularity, practitioner familiarity, and overlap with standard stormwater procedures outweighed these limitations.

In response to concerns voiced by the Maryland Department of the Environment (MDE), the USWG is asked to await additional independent review of the draft "Recommendations of the Expert Panel to Define Removal Rates for Disconnecting Existing Impervious Area Runoff from Stormwater Drainage Systems" before considering the report for approval under the BMP Protocol. As part of this review, any additional thoughts or recommendations on the use of the RCN method in the manner described in the report are greatly appreciated. Thank you in advance for your cooperation and contribution.