

Keynote Speaker

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Abstract Summary:

There is a shift taking place from peak and flow through based designs to designs that feature the removal of runoff volume from a site. Evidence of this shift in thinking is making its way into visible places. For example, the recent and influential National Research Council Stormwater Study states that efforts to reduce stormwater volume will automatically achieve reductions in pollutant loadings and that flow itself is responsible for erosion and sedimentation that adversely impacts surface water quality. The 2007 Energy Independence and Security Act deals with redevelopment or new development on Federal facilities stating they must seek to maintain predevelopment hydrology with respect to temperature, flow rate, volume and flow duration. EPA's Combined Sewer Overflow (CSO) Control Policy "Presumptive" Approach has a volume elimination option which has led to, among other things, a Green Infrastructure emphasis.

This talk discusses volume based hydrology (VBH) and covers:

- (1) A set of drivers that are influencing the shift and the different ways these drivers impact VBH at different flow levels - infiltration, pollution, channel protection (including ecology), near bank flooding and floodplain management;
- (2) The way the VBH will shift our design of BMPs and some of the complications that may come about with this shift;
- (3) Current thinking at the regulatory level and how this will impact VBH, and some of the pitfalls with a set infiltration depth;
- (4) Results from a set of hourly rainfall continuous simulation analyses performed to develop design guidance for volume-based LID/Green Infrastructure treatment controls and to assess both the 95% rule and the one-inch rule popular in the literature and in various places.