Is Your Road a BMP?

Roadways consist of paved surfaces, graded side slopes, drainage conveyance systems, managed rights-of-way, and other features that are designed primarily for the safe accommodation of vehicle traffic. With the exception of the stormwater management system, conventional design of most roadway features is intended to meet purposes independent of compliance with the stormwater management objectives of peak rate control, water quality treatment, and groundwater recharge. However, even though these roadway elements may serve other purposes, they can often be designed to integrate stormwater management function.

This was the subject of the presentation entitled "Is Your Road a BMP?" delivered by David Nyman, P.E., Senior Engineer at CEI, at the April 29, 2014 NEIWPCC Annual Nonpoint Source Conference in Newport, RI. The presentation explored considering "the roadway as the BMP," and as a design strategy to cost-effectively integrate stormwater management features into roadway performance. The objective is to capitalize on multi-functional roadway design elements, so that the roadway itself contributes to the management of runoff to meet applicable stormwater management standards.

The presentation included consideration of the pavement as a BMP, the embankment as a BMP, the stormwater conveyance system as a BMP, and roadway landscape treatment as a BMP. Examples included: providing road types ranging from limited access highways to urban streets with specialized pavements (pervious pavement and open graded friction course), runoff disconnection practices, vegetated filter strips, augmented embankment filters, stormwater conveyance system enhancements, and mature tree canopy integrated into roadway design.

Integrating stormwater functionality into the otherwise conventional roadway cross section can effectively provide for:

- Reduction of runoff that otherwise requires handling and treatment;
- Pretreatment, treatment, and infiltration (under suitable conditions) of runoff that would otherwise require installation of additional BMPs to meet stormwater management objectives; and
- Reduction of maintenance needs, by integration of stormwater management features into other roadway elements that are already routinely managed by maintenance personnel.

This presentation was intended to encourage designers and regulators to consider how each element of the roadway cross section contributes to runoff and also how it will (or could, if modified) contribute to meeting stormwater management objectives.

To see Mr. Nyman's full presentation, click here, or contact him at 800-725-2550 or dnyman@ceiengineers.com.