From:	Mark Buehrer
To:	ECY RE WW SW Manual Comments
Cc:	Wulkan, Bruce (PSP); "Curtis Hinman"; Colleen Mitchell
Subject:	New Section 3.4: Site Procedures for Bioretention & PP
Date:	Friday, February 03, 2012 5:13:05 PM
Attachments:	image003.png

In my opinion, the proposed procedure for field investigation for infiltration capacity is extremely poor for most real-world site conditions. Too many test holes, and too big of test holes will be very costly.

Many sites in the Puget Sound area have fairly uniform soil conditions, some have almost identical soil conditions throughout the entire site. Digging and testing dozens of holes on a site, getting nearly identical information in each hole, would be viewed as using very poor engineering judgment. The Engineer-of-Record on the project should have the ability to use their education and experience to determine the necessary number of holes to provide adequate design parameters.

The size of the test holes can be much smaller than proposed and still provide good information. We have used "modified perc. test holes" on many projects over the past decade. These modified test holes (6" diameter) allowed for easy and reasonable amount of holes to be explored. This allowed for easy digging, little land disturbance (they could be dug by hand, no excavator was required), small amount of water needed, and cost way less than the very large test holes proposed.

Fewer holes can be used to provide adequate site evaluations (particularly on sites that have uniform soil conditions). The very high cost of numerous and large test holes does not necessarily even provide better design data than smaller holes. Since safety factors are also applied to any field test results, and if any engineer is also allowed to use their education and experience to evaluate site conditions, then I think the site can be properly designed for LID features.

For us engineers that work for private clients, it is hard to explain why we would propose to do something on a project that appears to be very unreasonable…

.....
Mark S. Buehrer, PE, Director
2020 ENGINEERING
www.2020engineering.com
Wellspring Building
814 Dupont Street
Bellingham, WA 98225
Ph: (360) 671-2020, Ext. 103

"To provide simple economic solutions to complex environmental issues...to meet future needs."