Comments on the Draft 2019 SWMMWW		
Draft 2019 SWMMWW Section (select from drop down)	**Comment**	**Comment Made By**
V-5.4 Determining the Design Infiltration Rate of the Native Soils	Are the presoak times for large vs. small PITs intended to be different (5 hours min. vs. 6 hours min.)? If not, suggest making the min. required presoaking time consistent between the two test types. Also, can the required presoak head be the same for large and small PITs? (A head of 6-12" is currently stated for large PITs, while at least 12" is stated for small PITs.) Also, consider if the constant head water level for the small PIT should reflect the proposed ponded depth above the PIT test depth (as is indicated for the large PIT), or if it should always be 6-12" above test pit bottom.	Paul Van Horne, Shannon & Wilson, Inc.
V-5.4 Determining the Design Infiltration Rate of the Native Soils	For large and small PITs, consider describing use of early-time falling head PIT data as an alternative to constant head data in determination of infiltration rate, and provide example of calculation, particularly since constant head data are more sensitive to inaccuracies in measuremnt of flow rates and test pit dimensions. (In our experience, late-time falling head data may be partially influenced by settling of fines in the test pit floor, so earlier time falling head data are preferable.) It may not be necessary to require complete drainage of the test pit during the falling head portion of the test; the falling head rate measured prior to the completion of drainage may provide a value for infiltration rate. If a test pit drains so slowly that infiltration is obviously not feasible, full drainage would not be necessary in order to terminate the test.	Paul Van Horne, Shannon & Wilson, Inc.
V-5.4 Determining the Design Infiltration Rate of the Native Soils	If a site has been filled, the title "Determining…Native Soils" implies that infiltration would not be allowed on the site unless the fill soils were removed down to the native soil contact. I understand from conversations with Ecology that infiltration into fill is not necessarily precluded, depending on if it contains significant debris or contaminants. Suggest this be clarified consistent with current policy.	Paul Van Horne, Shannon & Wilson, Inc.
V-5.4 Determining the Design Infiltration Rate of the Native Soils	For large and small PITs, test depth should perhaps be targeted at defining the infiltration rate of the most restrictive soil layer within the required vertical setback below the proposed facility. For example, if a silt layer is present within 3 feet of a proposed bioretention facility subgrade level or within 1 foot of a proposed permeable pavement subgrade, perform the PIT by excavating a test pit about 6 to 12 inches into the silt layer. (It is helpful to advance an exploration nearby to a proposed PIT to evaluate overall subsurface conditions, prior to performing a PIT.)	Paul Van Horne, Shannon & Wilson, Inc.
V-5.4 Determining the Design Infiltration Rate of the Native Soils	Also applies to V-5.5, Subsurface Characterizaton. Consider providing examples of grain size-based methods for estimating infiltration rates for glacially consolidated soils, e.g., if the infiltration rate of multiple layers below a proposed facility must be characterized in order to evaluate mounding potential. If the Massman equation is not appropriate for overridden soils, suggest other methods. For Ksat Determination Option 3, if bioretention is proposed in glacially consolidated soils, how would one perform an analysis of each defined layer below the	Paul Van Horne, Shannon & Wilson, Inc.
V-5.4 Determining the Design Infiltration Rate of the Native Soils	For large and small PITs, a tarp partially covering the bottom and side of a test pit can be an effective alternative to using a splash plate. Also, in low permeability soils, a rotameter/flow meter is often not able to accurately measure low flow rates; suggest also/alternatively providing a means to measure inflow rate using the timed filling of a graduated bucket.	Paul Van Horne, Shannon & Wilson, Inc.
V-5.6 Site Suitability Criteria (SSC)	SSC-1 states a min. 100 foot setback from drinking water wells and public water supply springs. V-5.5 Site Characterizaton Criteria for Infiltration calls out identifying water supply wells within 500 feet. Should these distances be consistent? If 100 feet is the setback, perhaps just require that wells within 100 feet be identified. Since not all wells are in the state database, perhaps include a caveat that field reconnaissance may be required to identify some wells (knocking on doors).	Paul Van Horne, Shannon & Wilson, Inc.
BMP T5.15: Permeable Pavements	Under Determining the Native Soil Infiltration Rates, are fill soils precluded under permeable pavement infiltration sites? Also, are grain size-based infiltration rates allowed if not glacially overridden? (Grain size-based estimation is specifically called out in BMP T7.30 for bioretention.)	Paul Van Horne, Shannon & Wilson, Inc.
BMP T7.30: Bioretention	Are fill soils precluded under bioretention facilities?	Paul Van Horne, Shannon & Wilson, Inc.

BMP T7.50: Drywells	What is the definition of "impermeable soil layer"? Would deeper types of drywells be appropriate to include, e.g., those drilled by auger or air rotary, sometimes to over 100 feet deep? Perhaps as "Type 3" drywells?	Paul Van Horne, Shannon & Wilson, Inc.