

## WWA Stormwater Manual Modification Comments

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| III    |         | 2.2  | <b>Use of the WWHM in SW WA</b> - Clark County has serious concerns with the inability of the WWHM to simulate predevelopment conditions in areas of SW WA.   |
| III    |         |      | <b>Background</b> - The WWHM should be suitable for modeling predevelopment conditions at all Western Washington areas subject to NPDES municipal permits. Currently, the WWHM is capable of modeling three hydrogeologic/soil conditions associated with Ice Age deposits found throughout the Puget Sound Region: 1) Outwash (Ice Age alluvial sand and gravel deposits characterized as Hydrologic Soil Groups A and B); 2) Till (Ice Age glacial deposits characterized as Hydrologic Soil Group C;) and 3) Wetlands or saturated areas (characterized as “muck” soils such as organic rich, peaty soils) |
|        |         |      | The WWHM is not AKART because it does not accurately simulate predevelopment conditions in areas of Western Washington lacking the glacial deposits found in the Puget Sound. In particular, in Clark County, where there are hydrogeologic/soil settings where sites are underlain by: 1) fine-grained Ice Age sediment that is not as permeable as outwash but are more permeable than till; and 2) deeply weathered continental sediment covered by clay soils (Hydrologic Soil Group D) that are less permeable than till soils   |
|        |         |      | Ecology should at the very least add the ability to simulate sites where D soils and low permeability geologic units are present. This can be done with Clear Creek Solutions' calibrated HSPF model data from Gee Creek watershed in Clark County using the professional expertise of Ecology's WWHM developer. Ecology should also evaluate including a fine grained soil with runoff rates between the WWHM till and outwash options.  |
| V      |         | 7-19 | <b>Under drains in bioretention facilities</b> - Bioretention facility designers should be allowed to use elevated underdrains where soils approach the 0.3 inch/hr. infeasibility criteria and still meet MR #5. Allowing elevated underdrains will promote the use of bioretention in marginally feasible areas and provide infiltration. If elevated underdrains are not allowed, it is likely conservative designers will forgo the use of bioretention. Unconservative designers will more likely design bioretention facilities to meet MR #5 and be less concerned about a higher risk of failure.     |

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| V |  |  | <p><b>Permeable Pavement Testing</b> - The maintenance standards use an infiltration rate of 10 inches per hour as the standard for cleaning a clogged surface. The standard of 10 inches per hour seems very high as a trigger for expensive corrective maintenance. The one-hour 100-year rainfall depth in the Vancouver area is about 1.2 inches and the 24-hour 100-year event is a little over 4 inches of rainfall. Considering this, the 10 inch per hour standard seems very high if the test measures something approaching the actual infiltration rate during a rain storm. Two inches per hour seems like a reasonable rate because most storms are less than the 2-year event of about 2 inches in 24 hours.</p> |
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