



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

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February 16, 2007

Ken Stone
Washington State Department of Transportation
6639 Capitol Blvd. South
Tumwater, WA 98504-7332

RE: Highway Runoff Manual Consistency Review

Dear Mr. Stone,

The Department of Ecology (Ecology) has completed our review of the revisions to the Highway Runoff Manual (HRM). The purpose of this review was to ensure that equivalency has been established between the updates in the HRM with guidance from the February 2005 Stormwater Management Manual for Western Washington (SMMWW) and the September 2004 Stormwater Management Manual for Eastern Washington (SMMEW).

Upon resolution of the discrepancies discussed in the enclosure, Washington State's Department of Transportation's (WSDOT's) Highway Runoff Manual will be equivalent approach to the SMMWW and SMMEW. WSDOT can then use the updated HRM to comply with Ecology permits and 401 certifications.

Ecology is submitting review comments to WSDOT to accommodate WSDOT's need to initiate corrective action on these issues. However, we are still determining the equivalency of the HRM to the WMMEW manual in regard to redevelopment projects. Ecology will contact WSDOT formally as soon as we have reached a decision regarding this matter.

In addition to specific HRM technical issues, Ecology has some concerns about the review process for post publication updates. WSDOT must obtain Ecology's approval of changes to the HRM associated with post-publication updates prior to WSDOT's formal announcement of the post-publication updates. The review process allows Ecology to determine whether HRM updates meet or exceed the Ecology manual guidance.



If you have further questions and/or concerns please contact Bill Hashim at (360) 407-6467. Thank you for your time and cooperation.

Sincerely,

A handwritten signature in cursive script that reads "Nancy L. Winters".

Nancy L. Winters, Manager
Program Development Services
Water Quality Program

Enclosure

Cc: Ed O'Brien
Eric Luengo
Kathleen Emmett
Bill Hashim

HRM Review Comments

The following eleven items will require further HRM revisions to achieve equivalency with Ecology's stormwater management manuals:

1. **Flow Control Requirement:** The Western Washington Design Criteria on page 3-25 needs revision to indicate that for design of flow control facilities, the design engineer must assume that the pre-developed land was forested regardless of the existing land cover condition. If there is reasonable, historic information that indicates that the site was prairie prior to settlement, WSDOT may assume a pre-developed land cover condition of "pasture." WSDOT also needs to change the instructions within the definitions for "new impervious surface" and "replaced impervious surface" in regard to hydrologic analysis will need to be changed to be consistent with the above.
2. **Application of Enhanced Treatment:** The HRM does not direct use of Enhanced Treatment options in as many situations as the Ecology manuals. WSDOT must revise the HRM to apply Enhanced Treatment in the situations identified in the SMMWW, and "Metals Treatment" in the situations identified in the SMMEW.
3. **Oil Control Requirement:** The HRM does not cite all of the situations that SMMEW cites as needing an oil control BMP. The SMMEW indicates oil control BMPs are necessary for "high use sites" and "high ADT roadways and parking areas" as those terms are defined on pages 2-19 and 2-20 of the SMMEW. For projects in eastern Washington, the HRM must expand its list of "applications" in Table 3-1, and the sites listed as needing oil control devices in Section 5-3.5. Note that the SMMEW makes a distinction between the types of oil removal technologies that are applicable to "High ADT" and "High Use Sites." "High ADT" sites can use absorptive surface BMPs such as swales, various media filters, or catch basin inserts designed for oil absorption. WSDOT's compost amended vegetated filter strips (CAVFS) would also be considered an oil control BMP.
4. **Page 3-11:** In the last line, add "and PGPS" (in that particular threshold discharge area).
5. The list of flow control-exempt waterbodies includes at least two waters not on Ecology's list: Burg Slough and the White Salmon River. WSDOT needs to explain why these rivers appear on their list. (Note: Ecology approves WSDOT's inclusion of the Sammamish River because we intend to add the Sammamish to its list.
6. **Table 3-7, page 3-25:** The statement under the "Criteria" column for infiltration facilities is unclear. It states: "Size facility to infiltrate the entire volume of the 25-year storm with an overflow, and check the 100-year peak flow for property

damage, or infiltrate 100% of the storm runoff volume.” If the intent is to infiltrate the volume of the 25-year storm, then the phrase “with and overflow” should be eliminated. If the intent is to use infiltration but allow overflows that do not exceed the 25-year peak flow, then the statement could be clarified to read: “Size the facility to infiltrate sufficient runoff volumes that the overflow does not exceed the 25-year peak flow requirement. Check the 100-year peak flow to estimate the potential for downstream property damage, or infiltrate 100% of the 100-year runoff volume.” If WSDOT changes Table 3-7, WSDOT should also change Figure 4-5 to be consistent.

7. Page 5-38: Design Method, Step 1: WSDOT needs to clarify that the designer is to use the “on-line” flow rate indicated by the Western Washington Hydrology Model (WWHM) or MGS Flood.
8. Oil Control BMPs: WSDOT has eliminated oil/water separators and linear sand filters as standard oil control BMP options. This reduces available options and may present problems for sites which may not be able to use oil control booms (which are only usable with wetpools), or bioinfiltration ponds. For instance, prior to entering an underground injection facility, runoff from Eastern Washington roads with greater than 30,000 average daily traffic must apply oil control. In an urban area where space is an issue, WSDOT may not be able to use wetpools and bioinfiltration ponds leaving media filters or catch basin inserts as the only options.
9. Ecology Embankment: The text on page 5-70 directs designers to contact the Hydraulics Office for instructions concerning modeling of infiltration losses. Please provide us with a copy of the instructions that the Hydraulic Office will provide so that we can review them against guidance we provided to WSDOT on this subject.
10. For purposes of determining the extent to which stormwater requirements apply to replaced impervious surfaces in Western Washington, the definition of existing impervious surfaces should be those impervious surfaces that existed as of a certain date. New impervious surfaces are those impervious surfaces that cover an area that was classified as pervious prior to that date, or that represent an upgraded surface in accordance with Section 3-2.1 of the HRM. The date WSDOT chose should either be the most recent publication date of an Ecology manual or the date of an approved HRM manual. Ecology will supply a discussion memo by mid-March explaining the reason for this change.
11. Flow control threshold - conversion of native vegetated landscape to pasture: This condition must include the following threshold: “...or convert 2.5 acres or more of native vegetation to pasture in a threshold discharge area.”