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# Memorandum

Subject: Recommendations for Application of 2012 Ecology Manual to Non-Permit Areas

Date: March 17, 2015

To: Skagit County

From: Patrick Weber, P.E., Brown and Caldwell

## Background

This memorandum describes a recommended approach for applying the requirements of the 2012 *Stormwater Management Manual for Western Washington* (2012 Ecology Manual, or Manual) to areas within Skagit County. The memorandum was completed under a Personal Services Agreement between Skagit County (County) and Brown and Caldwell (BC) dated March 2, 2015, and represents the culmination of work for Task 3 of that Agreement.

The County is a Permittee under the Western Washington Phase II Municipal Stormwater Permit (Permit) issued by the Department of Ecology. Under the terms of the Permit (most recently modified January 16, 2015), the County is required to adopt the 2012 Ecology Manual or an approved equivalent stormwater manual by December 31, 2016. The technical specifications contained in the Manual are to be applied in areas covered by the Permit. Unincorporated Skagit County includes areas that have been identified by Ecology as covered by the Permit (Permit areas), and areas that are not covered (non-Permit areas). Several municipalities within the County are also independent Permittees having areas covered by the Permit.

While not required to do so, the County is considering applying the 2012 Ecology Manual to non-Permit areas in order to meet a range of County objectives for Manual Implementation that are described below. The County has requested assistance in identifying which Manual requirements should be applied in part, in full, or modified for non-Permit areas. The following sections of this memorandum outline the County's Manual implementation objectives and draft BC recommendations for applying the Manual requirements to the non-Permit areas.

The County should review and confirm the suitability of these recommendations prior to implementation.

## Manual Implementation Objectives

The following objectives were identified by County staff to guide the selection of applicable 2012 Ecology Manual requirements for the non-Permit areas:

- Provide clear direction on stormwater management requirements and guidance for both Permit and non-Permit areas, enhancing ease of use and predictability for Code and Manual users
- Control impacts from development-related stormwater runoff to adjacent properties
- Reduce costs to drainage utility ratepayers for new public stormwater facilities over time (manage stormwater on site to mitigate development impacts rather than developing new public facilities)
- Manage stormwater using current best practices and techniques (i.e., where stormwater management is needed, apply the 2012 Ecology Manual)
- Manage stormwater with equity and consistency among landowners (e.g., avoid applying different requirements "across the street")

- Allow the option of applying low-impact development (LID) techniques in lower-density, non-Permit areas (where feasible) without mandating LID installation
- Limit the impact of stormwater regulations on small, rural, single-family residences; farms; and rural landowners

### **Approach to Developing Recommendations**

BC used the following approach to develop recommendations:

- Adopt a tiered approach to applying requirements in non-Permit areas
- Base the tiers on land use intensity (e.g., high, medium, low)
- Set a large project threshold above which all 2012 Ecology Manual requirements apply
- Confirm an exemption from the requirements for agricultural and forestry practices (not including development of impervious surfaces)
- Propose applicable Manual requirements for each tier based on the nine Minimum Requirements (MRs) described in the Permit and the Manual.

### **Land Use Intensity Categories**

BC has assumed three broad categories of land use intensity in non-Permit areas, and used a tiered approach to apply 2012 Ecology Manual requirements to those categories (see Table 1). The County can subsequently define each category (e.g., high, medium, low) based on specific impervious surface area thresholds or zoning categories in order to relate the land use categories to specific parcels. Table 1 describes proposed land use intensity categories.

<b>Table 1. Land Use Intensity Categories for Non-Permit Areas</b>			
<b>Land use intensity<sup>a</sup></b>	<b>Description</b>	<b>Approach to Manual requirements</b>	<b>Revised thresholds</b>
High	<p>Areas similar to Permit areas, generally including:</p> <ul style="list-style-type: none"> <li>• Non-Permit Areas adjacent to Permit areas</li> <li>• Industrial/commercial/urban residential areas</li> </ul>	Match the Manual requirements for Permit areas.	Use the standard 2012 Ecology Manual thresholds (Figures 2.4.1 and 2.4.2 in Manual)
Medium	<p>Medium-intensity land use (more dense rural areas), generally including:</p> <ul style="list-style-type: none"> <li>• Single-family residential more dense than 1 unit per acre (or County preference)</li> </ul>	Relax thresholds or reduce requirements for some MRs.	<p>Raise the Manual thresholds by a factor of two for all MRs except for MR 2 (Construction SWPPP):</p> <ul style="list-style-type: none"> <li>• Retain MR 2 threshold: land disturbance greater than or equal to 7,000 ft<sup>2</sup></li> <li>• Raise MR 1–5 threshold: new plus replaced hard surface greater than or equal to 4,000 ft<sup>2</sup></li> <li>• Raise MR 1–9 threshold: new plus replaced hard surface greater than or equal to 10,000 ft<sup>2</sup>, or 1.5 acres of vegetation to lawn conversion, or 5 acres vegetation to pasture conversion</li> </ul>
Low	<p>Low-intensity land use (likely the large majority of non-Permit areas), generally including:</p> <ul style="list-style-type: none"> <li>• Single-family residential less dense than 1 unit per acre (or County preference)</li> <li>• Other rural or low density land uses</li> </ul>	Require MR 1 (stormwater site plans), MR 2 (construction SWPPPs), MR 4 (preserve natural drainage), and MR 8 (wetlands protection) where development activities exceed revised thresholds. Make other MRs optional.	
Large projects	Large projects with significant site disturbance or hard surface creation, regardless of land use intensity category	Apply all MRs.	<p>Apply all MRs to projects exceeding the following thresholds:</p> <ul style="list-style-type: none"> <li>• Raise MR 1–9 threshold: new plus replaced hard surface greater than or equal to 20,000 ft<sup>2</sup>, or 1.5 acres of vegetation to lawn conversion, or 5 acres vegetation to pasture conversion</li> </ul>

a. The Permit identifies specific practices that are exempt from the MRs (see below); the County may choose to add additional practices to the list for non-Permit areas. Practices identified as exempt are excluded from the Manual requirements, and are also excluded from the land use intensity categories identified in this table.

Appendix 1 of the Permit identifies the following practices as exempt from the MRs (see Appendix 1 for details, including exceptions):

- Forest practices (except for Class IV general forest practices)
- Commercial agriculture
- Oil and gas field activities or operations
- Pavement maintenance
- Underground utility projects

The County may choose to add additional practices (e.g., Class IV general forest practices, additional agricultural practices) to the exempt list for non-Permit areas.

### Recommended Requirements in Non-Permit Areas

Recommendations for application of the 2012 Ecology Manual were developed to adhere as much as possible to the County’s identified objectives. Table 2 summarizes the recommended approach to apply the MRs, using the land use intensity categories described in Table 1. Table 2 also describes potential benefits and impacts associated with application of the requirements.

Table 2. 2012 Ecology Manual: Recommended Requirements in Non-Permit Areas				
2012 Ecology Manual Minimum Requirements	Land Use Intensity	Recommendation	Benefits	Impacts/Costs
MR 1 Stormwater Site Plan	All	Required <sup>a</sup>	<ul style="list-style-type: none"> <li>• Manage stormwater with equity and consistency</li> <li>• Manage stormwater using current best practices</li> </ul>	<ul style="list-style-type: none"> <li>• County permit applicants would incur additional costs for preparing plan submittals to get a construction permit</li> <li>• Increased inspection effort during construction</li> </ul>
MR 2 Construction SWPPP	All	Required <sup>a</sup>	<ul style="list-style-type: none"> <li>• Manage stormwater with equity and consistency</li> <li>• Manage stormwater using current best practices</li> </ul>	<ul style="list-style-type: none"> <li>• County permit applicants would incur additional costs for preparing plan submittals to get a construction permit</li> <li>• Increased inspection effort during construction</li> </ul>
MR 3 Source Control	High	Required <sup>a</sup>	<ul style="list-style-type: none"> <li>• Mitigate potential for stormwater pollution</li> <li>• Manage stormwater using current best practices</li> </ul>	<ul style="list-style-type: none"> <li>• County permit applicants would incur additional costs for preparing plan submittals to get a construction permit</li> <li>• Increased inspection effort during construction</li> <li>• Will increase long-term maintenance/inspection/enforcement efforts</li> </ul>
	Medium	Required <sup>a</sup> ; relax thresholds <sup>b</sup>	<ul style="list-style-type: none"> <li>• Mitigate potential for stormwater pollution</li> <li>• Manage stormwater using current best practices</li> </ul>	<ul style="list-style-type: none"> <li>• County permit applicants would incur additional costs for preparing plan submittals to get a construction permit</li> <li>• May increase inspection effort during construction</li> <li>• Will increase long-term maintenance/inspection/enforcement efforts</li> </ul>
	Low	Optional	<ul style="list-style-type: none"> <li>• Limit the impact of stormwater regulations on small, rural, single-family residences; farms; and rural landowners</li> </ul>	<ul style="list-style-type: none"> <li>• County permit applicants may incur additional costs for preparing plan submittals to get a construction permit</li> <li>• May increase long-term maintenance/inspection/enforcement efforts</li> </ul>
MR 4 Preserve Natural Drainage	All	Required <sup>a</sup>	<ul style="list-style-type: none"> <li>• Manage stormwater with equity and consistency</li> <li>• Manage stormwater using current best practices</li> </ul>	<ul style="list-style-type: none"> <li>• County permit applicants would incur additional costs for preparing plan submittals to get a construction permit</li> <li>• Areas of site development could be reduced</li> </ul>

Table 2. 2012 Ecology Manual: Recommended Requirements in Non-Permit Areas				
2012 Ecology Manual Minimum Requirements	Land Use Intensity	Recommendation	Benefits	Impacts/Costs
MR 5 Onsite Stormwater Management	High	Required <sup>a</sup> where feasible	<ul style="list-style-type: none"> <li>Reduce costs to drainage utility ratepayers for public facilities by requiring high-density property owners to manage stormwater on site</li> <li>Manage stormwater using current best practices</li> </ul>	<ul style="list-style-type: none"> <li>County permit applicants would incur additional costs for preparing plan submittals to get a construction permit</li> <li>Areas of site development could be reduced</li> <li>LID could perhaps reduce onsite stormwater facility costs</li> <li>Increased inspection effort during construction</li> <li>Will increase long-term maintenance/inspection/enforcement efforts</li> </ul>
	Medium	Required <sup>a</sup> where feasible, relax thresholds <sup>b</sup> ; reduced onsite analysis requirements	<ul style="list-style-type: none"> <li>Reduce costs to drainage utility ratepayers for public facilities by requiring medium-density property owners to manage stormwater on site</li> <li>Limit the impact of stormwater regulations on small, rural, single-family residences; farms; and rural landowners</li> <li>Manage stormwater using current best practices</li> </ul>	<ul style="list-style-type: none"> <li>County permit applicants would incur additional costs for preparing plan submittals to get a construction permit</li> <li>Areas of site development could be reduced</li> <li>LID could perhaps reduce onsite stormwater facility costs</li> <li>May increase inspection effort during construction</li> <li>Will increase long-term maintenance/inspection/enforcement efforts</li> </ul>
	Low	Optional (where feasible)	<ul style="list-style-type: none"> <li>In lower density areas, allow the option of applying LID techniques (where feasible) without mandating LID installation</li> <li>Limit the impact of stormwater regulations on small, rural, single-family residences; farms; and rural landowners</li> </ul>	<ul style="list-style-type: none"> <li>LID could perhaps reduce onsite stormwater facility costs</li> <li>May increase long-term maintenance/inspection/enforcement efforts</li> </ul>
MR 6 Treatment	High	Required <sup>a</sup>	<ul style="list-style-type: none"> <li>Reduce costs to drainage utility ratepayers for public facilities by requiring high-density property owners to treat stormwater on site</li> <li>Manage stormwater using current best practices</li> </ul>	<ul style="list-style-type: none"> <li>County permit applicants would incur additional costs for preparing plan submittals to get a construction permit</li> <li>Areas of site development could be reduced</li> <li>LID could perhaps reduce onsite stormwater facility costs</li> <li>Increased inspection effort during construction</li> <li>Will increase long-term maintenance/inspection/enforcement efforts</li> </ul>

Table 2. 2012 Ecology Manual: Recommended Requirements in Non-Permit Areas				
2012 Ecology Manual Minimum Requirements	Land Use Intensity	Recommendation	Benefits	Impacts/Costs
MR 7 Flow Control	Medium	Required <sup>a</sup> ; relax thresholds <sup>b</sup>	<ul style="list-style-type: none"> <li>Reduce costs to drainage utility ratepayers for public facilities by requiring medium-density property owners to treat stormwater on site</li> <li>Limit the impact of stormwater regulations on small, rural, single-family residences; farms; and rural landowners</li> <li>Manage stormwater using current best practices</li> </ul>	<ul style="list-style-type: none"> <li>County permit applicants would incur additional costs for preparing plan submittals to get a construction permit</li> <li>Areas of site development could be reduced</li> <li>LID could perhaps reduce onsite stormwater facility costs</li> <li>May increase inspection effort during construction</li> <li>May increase long-term maintenance/inspection/enforcement efforts</li> </ul>
	Low	Optional	<ul style="list-style-type: none"> <li>In lower density areas, allow the option of applying LID techniques (where feasible) without mandating LID installation</li> <li>Limit the impact of stormwater regulations on small, rural, single-family residences; farms; and rural landowners</li> </ul>	<ul style="list-style-type: none"> <li>LID could perhaps reduce onsite stormwater facility costs</li> <li>May increase long-term maintenance/inspection/enforcement efforts</li> </ul>
	High	Required <sup>a</sup>	<ul style="list-style-type: none"> <li>Reduce costs to drainage utility ratepayers for public facilities by requiring high-density property owners to manage stormwater on site</li> <li>Manage stormwater using current best practices</li> </ul>	<ul style="list-style-type: none"> <li>County permit applicants would incur additional costs for preparing plan submittals to get a construction permit</li> <li>Areas of site development could be reduced</li> <li>LID could perhaps reduce onsite stormwater facility costs</li> <li>Increased inspection effort during construction</li> <li>Will increase long-term maintenance/inspection/enforcement efforts</li> </ul>
	Medium	Required <sup>a</sup> ; relax thresholds <sup>b</sup>	<ul style="list-style-type: none"> <li>Reduce costs to drainage utility ratepayers for public facilities by requiring medium-density property owners to manage stormwater on site</li> <li>Limit the impact of stormwater regulations on small, rural, single-family residences; farms; and rural landowners</li> <li>Manage stormwater using current best practices</li> </ul>	<ul style="list-style-type: none"> <li>County permit applicants would incur additional costs for preparing plan submittals to get a construction permit</li> <li>Areas of site development could be reduced</li> <li>LID could perhaps reduce onsite stormwater facility costs</li> <li>Will increase inspection effort during construction</li> <li>Will increase long-term maintenance/inspection/enforcement efforts</li> </ul>
	Low	Optional	<ul style="list-style-type: none"> <li>In lower density areas, allow the option of applying LID techniques (where feasible) without mandating LID installation</li> <li>Limit the impact of stormwater regulations on small, rural, single-family residences; farms; and rural landowners</li> </ul>	<ul style="list-style-type: none"> <li>LID could perhaps reduce onsite stormwater facility costs</li> <li>May increase long-term maintenance/inspection/enforcement efforts</li> </ul>

Table 2. 2012 Ecology Manual: Recommended Requirements in Non-Permit Areas				
2012 Ecology Manual Minimum Requirements	Land Use Intensity	Recommendation	Benefits	Impacts/Costs
MR 8 Wetlands Protection	All	Required <sup>a</sup>	<ul style="list-style-type: none"> <li>Manage stormwater using current best practices</li> </ul>	<ul style="list-style-type: none"> <li>County permit applicants would incur additional costs for preparing plan submittals to get a construction permit</li> <li>Areas of site development could be reduced</li> </ul>
MR 9 O&M	High	Required <sup>a</sup>	<ul style="list-style-type: none"> <li>Control impacts from development-related stormwater runoff to adjacent properties</li> <li>Manage stormwater using current best practices</li> </ul>	<ul style="list-style-type: none"> <li>County permit applicants would incur additional costs for preparing plan submittals to get a construction permit</li> <li>Will increase long-term maintenance/inspection/enforcement efforts</li> </ul>
	Medium	Required <sup>a</sup> ; relax thresholds <sup>b</sup>	<ul style="list-style-type: none"> <li>Control impacts from development-related stormwater runoff to adjacent properties</li> <li>Manage stormwater using current best practices</li> </ul>	<ul style="list-style-type: none"> <li>County permit applicants would incur additional costs for preparing plan submittals to get a construction permit</li> <li>Will increase long-term maintenance/inspection/enforcement efforts</li> </ul>
	Low	Required if facility installed	<ul style="list-style-type: none"> <li>Control impacts from development-related stormwater runoff to adjacent properties</li> <li>Manage stormwater using current best practices</li> </ul>	<ul style="list-style-type: none"> <li>County permit applicants would incur additional costs for preparing plan submittals to get a construction permit</li> <li>May increase long-term maintenance/inspection/enforcement efforts</li> </ul>

a. Required only when development area thresholds are triggered.

b. See Table 1 for threshold recommendations.

## Further Efforts

As part of current efforts or sometime in the future, the County may wish to further develop requirements, exemptions, or guidance in the following areas:

- Reduced onsite analysis requirements (e.g., geotechnical assessment requirements)
- Specific best management practice (BMP) exemptions for certain land uses (e.g., wheel washing, construction entrances)
- Self-certification for post-construction private facility inspections
- Reduced inspection frequency for post-construction private facility inspections
- LID infeasibility assessments; identify and map areas where LID would be infeasible, potentially including:
  - Steep slopes
  - Landslide hazard zones
  - Aquifer protection areas
  - Wetlands
  - Critical areas
  - Shoreline areas
  - Low-permeability soil areas
  - Unsuitable soil areas
  - High-groundwater areas
  - Portions of focus areas such as Bayview and South Fidalgo Island
  - Other areas where LID techniques would be inappropriate or result in unacceptable consequences