



COUNTY COMMISSIONERS  
Cathy Wolfe  
District One  
Sandra Romero  
District Two  
Karen Valenzuela  
District Three

**DEPARTMENT OF RESOURCE STEWARDSHIP  
WATER RESOURCES DIVISION**

*Creating Solutions for Our Future*

Cliff Moore  
Director

**2012 Errata to the  
2009 Thurston County Drainage Design and Erosion Control Manual  
August 2012**

**Introduction**

The Thurston County Drainage Design and Erosion Control Manual (DDECM) establishes requirements and provides guidance for managing the quantity and quality of stormwater produced by development and redevelopment in Thurston County. The DDECM is administered by the Manager of the Water Resources Division of the Department of Resource Stewardship. The Administrator updates the DDECM between major revisions to correct obvious errors in the Manual, to incorporate policy changes that affect Manual content and to update reference material that has changed since the Manual's adoption. The Drainage Manual Administrator uses Policies, Administrator Memoranda, and Errata to implement changes to the Manual as follows:

- A. Policies: Policies are generally substantive changes in how the Drainage Manual shall be applied in specific circumstances that may have a significant impact on manual users. There are currently three formal policies in effect for the 2009 DDECM. Policies are formally adopted and approved by the Director of the Resource Stewardship Department of Thurston County after consulting with the Department Heads of the various County Departments.
- B. Administrator Memoranda: The Drainage Manual Administrator issues Administrator Memoranda to implement new requirements, provide clarification or interpretation of Manual provisions and adopted Policies, or implement recommendations of adopted Basin Plans.
- C. Errata: Errata are specific text changes to the Drainage Manual to correct errors or omissions, provide clarification, or to revise Manual text to be consistent with reference documents (i.e. 2005 Ecology Stormwater Management Manual for Western Washington). Errata are processed for approval similar to Policies.

**Contents**

This document includes three sections as follows:

1. **SECTION A: Thurston County Adopted Policies Affecting 2009 DDECM** – (1 Page) -- A list of and description of current policies that have been adopted and approved by the Drainage Manual Administrator and Resource Stewardship Director.
2. **SECTION B: Thurston County Drainage Manual Administrator Memo's and Interpretations** – (2 Pages) -- A list of all Drainage Manual Administrator Memo's, whether the Memo applies to the 2009 DDECM, 1994 DDECM, or both and a description of the content of each Administrator Memo.
3. **SECTION C: 2009 DDECM ERRATA No. 1** – (17 Pages, 2 attachments) -- Errata No. 1 incorporates policy changes by Ecology or Thurston County that affect DDECM content and updates reference material that has changed since the Manual's adoption. Formatting errors, obvious typographical errors, and incorrect website/phone numbers.

## A. THURSTON COUNTY ADOPTED POLICIES AFFECTING 2009 DDECM

The following policies related to the 2009 Thurston County DDECM have been adopted and approved by the Drainage Manual Administrator and Department of Resource Stewardship Director with the effective date indicated. The policies are posted to the Thurston County Stormwater web-site: <http://www.co.thurston.wa.us/stormwater/manual/manual-home.html>

| POLICY NO.      | TITLE                                       | DESCRIPTION & REASON FOR POLICY  | Effective Date         |
|-----------------|---|--|------------------------|
| DECM.11.POL.802 | <b>Subdivision Land Area Calculations</b>   | <p>This policy applies to new residential subdivision development projects in Thurston County subject to the 2009 Thurston County Drainage Design and Erosion Control Manual (DDECM). The policy clarifies how an applicant shall calculate impervious, pervious and other development land cover where lot-specific details are not yet determined. It also clarifies required information to be contained on final plats related to development land cover restrictions and responsibilities for implementation of on-lot Best Management Practices. This policy was necessary because the 2009 DDECM does not stipulate what land cover assumptions an applicant should use for stormwater design and permitting when lot-specific details are not yet determined.</p> <p>An applicant proposing a subdivision development in Thurston County should review this policy to determine land area assumptions for purposes of stormwater permitting and facility design.</p> | <b>October 6, 2011</b> |
| DECM.11.POL.601 | <b>Closed-Circuit Television Inspection</b> | <p>This policy applies to all development and redevelopment projects in Thurston County subject to the 2009 Thurston County Drainage Design and Erosion Control Manual (DDECM). The policy clarifies when Closed-Circuit Television Inspection (CCTV) of stormwater piping systems is required, how they are to be performed and information required to be submitted to Thurston County to prior to final project acceptance.</p> <p>An applicant whose project includes any stormwater drain pipes 8-inches or larger in diameter should review this policy for required inspections and submittal information necessary to obtain final project acceptance by the County.</p>   | <b>October 6, 2011</b> |
| DECM.10.POL.801 | <b>Alternative Paving Surfaces</b>          | <p>This policy applies to new development and redevelopment projects proposing to use alternative paving surfaces (i.e. porous pavements). The policy clarifies how alternative paving surfaces shall be treated in establishing submittal requirements, applicable minimum requirements, and effective impervious surface area for design of flow control and runoff treatment facilities under the 2009 Thurston County Drainage Design and Erosion Control Manual.</p> <p>An applicant considering the use of alternative paving surfaces should consult this policy to understand how alternative paving surfaces proposed for a project will be evaluated during permit review.</p>   | <b>March 22, 2010</b>  |

## B. THURSTON COUNTY DRAINAGE MANUAL ADMINISTRATOR MEMO'S AND INTERPRETATIONS

The following Drainage Manual Administrator Memoranda have been issued providing clarifications, interpretations, and restrictions related to the 1994 and 2009 Thurston County DDECMS. Some of these Administrator Memoranda were issued prior to adoption of the 2009 DDECM and may or may not apply to the 2009 DDECM. All current Administrator Memoranda are listed and their applicability to the 2009 DDECM is noted and explained. Applicable Administrator Memoranda are posted to the Thurston County Stormwater web-site: <http://www.co.thurston.wa.us/stormwater/manual/manual-home.html>

| MEMO DATE        | SUBJECT  | APPLICABLE TO 2009 DDECM (YES/NO) | APPLICABLE TO 1994 DDECM (YES/NO) | COMMENTS & DESCRIPTION   |
|------------------|--|-----------------------------------|-----------------------------------|--|
| January 3, 2012  | Application of Subdivision Land Area Calculations Policy (DECM.11.POL.802) to Large Lot Plats in Rural Areas     | YES                               | NO                                | This Administrator Memorandum modifies the application of the Subdivision Land Area Calculations Policy as it relates to large lot plats as defined under Thurston County Code Title 18.28 and located outside of urban growth areas and areas subject to the requirements of the Thurston County Phase II NPDES Municipal Stormwater permit.  |
| November 5, 2004 | Use of Storm and Surface Water Pump Stations, Mechanical Equipment and Other Related Appurtenances Not Permitted | YES                               | YES                               | This Administrator Memorandum prohibits the use of pump stations, mechanical equipment, and other related appurtenances for purposes of conveying, directing or managing storm and surface water. Originally written to address a lack of standards and specifications for pump stations in the 1994 DDECM, the Administrator has determined that the lack of design standards and specifications and other concerns related to the use of pump stations and mechanical equipment in the 2009 DDECM warrants retaining the restrictions on pump stations, mechanical equipment and other related appurtenances. Reference to Section 1.1, <i>Intent</i> of the 1994 DDECM is modified to reference Chapter 1, <i>Introduction</i> , of the 2009 DDECM which states: "The Drainage Manual Administrator is Authorized to request information or to impose controls beyond those specified in this Manual. In doing so, the Administrator shall act reasonably, exercising best professional judgment based on available information." |
| October 30, 2000 | Revised Interim Stormwater Design Standards for New Development in Salmon Creek Basin                            | YES                               | YES                               | This Administrator Memorandum, with its associated attachments, was developed to implement revised interim stormwater standards for new development in the Salmon Creek Basin. The interim standards, implemented in 2000 were recommended for continuation in the final Salmon Creek Basin Plan adopted in 2004. The Salmon Creek Basin continues to be susceptible to high groundwater flooding and the interim stormwater standards described in this Administrator Memorandum continue to be necessary to minimize risks of flooding. Given the changes in stormwater standards with adoption of the 2009 DDECM, some elements of the interim stormwater standards for Salmon Creek Basin may need to be modified on a case by case basis. The applicant should consult with the County early in the application process to determine if any modifications to the Salmon Creek Basin interim stormwater standards are necessary to comply with both the interim standards and the 2009 DDECM.                                    |
| March 22, 2000   | Interim Stormwater Design Standards for New Development in Green Cove Creek Basin                                | NO                                | YES                               | This Administrator Memorandum was developed as a consequence of the adoption of the Green Cove Creek Basin Plan in 1998. It required that hydrologic modeling for new development within the Green Cove Creek basin be conducted using a continuous simulation hydrologic model (HSPF) and stormwater facility sizing based on matching flow durations and peak flows from the 1.05 year to the 50-year event based on pre-development conditions of forest. With adoption of the 2009 DDECM all facility sizing is required to use continuous simulation hydrologic modeling based on a pre-developed forested condition and match flow durations and peaks from 50% of the 2-year to the 50-year event. The standard requirements of the 2009 DDECM are essentially equivalent to the Interim Stormwater Standards for Green Cove Creek; therefore, the provisions of this Administrator Memorandum are not applicable under the 2009 DDECM.   |

| <b>MEMO DATE</b>     | <b>SUBJECT</b>  | <b>APPLICABLE TO 2009 DDEC M (YES/NO)</b> | <b>APPLICABLE TO 1994 DDEC M (YES/NO)</b> | <b>COMMENTS &amp; DESCRIPTION</b>   |
|----------------------|---|---|---|---|
| <b>June 20, 1996</b> | <b>Variance Requests for Short Subdivisions</b>   | <b>NO</b>                                 | <b>YES</b>                                | This Administrator Memorandum was developed to grant variance authority under the 1994 DDEC M to the Development Review Engineer for short subdivisions meeting certain conditions associated with site soils. Under the 2009 DDEC M, requirements related to project variances, thresholds for minimum requirements and submittals, etc. are significantly different from those of the 1994 DDEC M. In many instances compliance with the 2009 DDEC M for short plats is required, regardless of soil conditions, to comply with the Thurston County Phase II NPDES stormwater permit. Therefore, the provisions of this Administrator Memorandum are not applicable under the 2009 DDEC M.  |
| <b>May 23, 1996</b>  | <b>Drainage Requirements for New Single Family Residential Construction within Beachcrest</b> | <b>NO</b>                                 | <b>YES</b>                                | This Administrator Memorandum requires additional evaluation of proposed development on lots within the Beachcrest Community. Due to identified stormwater problems in the area an Abbreviated Drainage Plan, as allowed by the 1994 DDEC M may not be adequate. Development Review Staff are to conduct a site visit for permit applications and make a determination as to whether an applicant should be required to obtain drainage easements or provide a professional opinion on how stormwater can be managed onsite. Under the 2009 DDEC M, development on small lots (<1 acre) where soils are Hydrologic Soil Group C/D or where the project is located in an area that has historically had drainage problems an Abbreviated Drainage Plan is not allowed and an Engineered Abbreviated Drainage Plan prepared by a licensed civil engineer is required (2009 DDEC M, Volume I, Section 3.4.3); therefore, the provisions of this Administrator Memorandum are not applicable under the 2009 DDEC M. |
| <b>May 16, 1997</b>  | <b>Technical Memorandum 48 Hour Drawdown Criteria</b>   | <b>NO</b>                                 | <b>YES</b>                                | This Administrator Memorandum was developed to address the overflow of stormwater retention and detention ponds during extended precipitation periods in 1995/96 and 1996/97. It was determined the use of a 7-day/100-year design event and single event hydrologic modeling could adequately simulate the impact of flow duration rainfall events. The 2009 DDEC M requires the use of a continuous simulation hydrologic model for sizing detention and retention facilities and does not allow single-event hydrologic modeling for facility sizing; therefore the provisions of this Administrator Memorandum are not applicable under the 2009 DDEC M.  |

## C. 2009 DDECM ERRATA No. 1

The Drainage Manual Administrator is authorized by Chapter 1 of Volume I of the 2009 Drainage Design and Erosion Control Manual to correct errors and omissions; clarify, augment or update drainage Manual text. Where this is required, the Administrator will, in an appropriate manner, revise the text and provide the revisions to Manual users. This Errata No. 1 corrects obvious errors and omissions in the DDECM, incorporates policy changes by Ecology or Thurston County that affect DDECM content and updates reference material that has changed since the Manual's adoption. Format errors, obvious typographical errors, incorrect web-sites/phone numbers and other errors where the intent is still clear may not be listed on this errata sheet, but will be revised to the best of the Administrator's knowledge in the next update to the DDECM, currently planned prior to December 31, 2016. Manual users are encouraged to use this Errata to markup their hard copy or PDF copy of the 2009 DDECM consistent with the following list of edits and revisions.

| VOL  | SECTION   | PAGE NO. | DESCRIPTION & REASON FOR CHANGE   | CORRECTED TEXT (UNDERLINED = NEW TEXT, STRIKEOUT = DELETED TEXT)  |
|--|---|----------|---|---|
| <b>VOLUME I – MINIMUM TECHNICAL REQUIREMENTS AND SITE PLANNING</b> |   |          |   |   |
| I  | Chapter 1<br>Introduction                           | 1-1      | Clarify when manual requirements apply to cross-jurisdictional projects.  | Revise first bullet text to read <ul style="list-style-type: none"> <li>• “Activity is exempt from <u>the minimum</u> <del>submittal</del>-requirements (See Section 2.2)</li> </ul> Revise the 2 <sup>nd</sup> bullet to read as follows: <ul style="list-style-type: none"> <li>• <b>“Public Works roadway and drainage projects</b> <del>Development/redevelopment and stormwater activities are</del> conducted in accordance with an approved stormwater management manual, <b>such as WSDOT’s Highway Runoff Manual</b>, consistent with Thurston County’s NPDES Phase II permit and the 2005 <i>Washington State Department of Ecology Stormwater Management Manual for Western Washington</i>.</li> </ul> |
| I  | 2.3<br>Applying Minimum Requirements<br>Figure 2.1  | 2-5      | Amend Figure 2.1 to add minimum requirement #12, Offsite Analysis and Mitigation as a requirement for new development projects subject to Minimum Requirements #1 through #5 to be consistent with text in Section 2.3.1. | Revise block text for 5 <sup>th</sup> block down in center of page to read: “Minimum Requirements #1 through #5 <b>and #12</b> apply to new <b>and replaced</b> impervious surfaces and the land disturbed.”  |
| I  | 2.3<br>Applying Minimum Requirements<br>Figure 2.1  | 2-5      | Amend Figure 2.1 to be consistent with requirements of Ecology SWMMWW Figure 2.2 and text descriptions of application of minimum requirements.  | Revise block text for 3 <sup>rd</sup> block down on right hand side of figure to read: “Does the project have 2,000 square feet or more of new, <b>replaced or new plus replaced</b> impervious surfaces?”  |
| I  | 2.3<br>Applying Minimum Requirements<br>Figure 2.1  | 2-5      | Amend Figure 2.1 to reflect change in requirements for projects exempt from submittal requirements.   | Revise block text for 2 <sup>nd</sup> to last block of Figure 2.1 to read: “Is the area of the total impervious surfaces <b>(including existing)</b> less than 5% of the parcel, <b>total proposed land disturbing activity less than 10% of the parcel, and proposed grading less than 5,000 cubic yards</b> AND is all stormwater infiltrated on site?”   |
| I  | 2.3<br>Applying Minimum Requirements:<br>Figure 2.2 | 2-6      | Correct typographical error in block within Figure 2.2.   | Revise block text for 2 <sup>nd</sup> block down to read: “Does the <b>area</b> <del>are</del> of new, replaced or new plus replaced impervious surfaces total 2,000 square feet or more?”  |

| VOL | SECTION   | PAGE NO. | DESCRIPTION & REASON FOR CHANGE   | CORRECTED TEXT (UNDERLINED = NEW TEXT, STRIKEOUT = DELETED TEXT)  |
|-----|---|----------|---|---|
| I   | 2.3<br>Applying Minimum Requirements:<br>Figure 2.2 | 2-6      | Amend Figure 2.2 to be consistent with requirements of Ecology SWMMWW related to when replaced impervious surfaces are required to comply with all minimum requirements.  | Add a footnote to Figure 2.2 that states the following: <b><u>“For redevelopment projects that are not required to apply minimum requirements #1 through #12 to all impervious surfaces applicant shall also determine whether all minimum requirements apply to replaced impervious surface using Figure 2.3 – Flow Chart for Determining Requirements for Redevelopment of the Ecology Stormwater Management Manual for Western Washington (2005), Volume I, Page 2-10. Where the Ecology’s figure 2.3 requires Minimum Requirements #1 through #10 this shall be interpreted as requiring Minimum Requirements #1 through #12 of the Thurston County DDECM.”</u></b> A copy of the flow chart is attached to this Errata Sheet.  |
| I   | 2.3.1<br>New Development                            | 2-7      | Amend text of this section to be consistent with flow chart in Figure 2.1.  | Revise text in 2 <sup>nd</sup> paragraph of this section as follows: “All new development shall comply with Minimum Requirement #2, Construction Stormwater Pollution Prevention Plan, <b><u>and Minimum Requirement #5, Onsite Stormwater Management, to the maximum extent practicable,</u></b> except if the total of all impervious surfaces (including existing) is less than 5 percent of the parcel, <b><u>AND proposed land disturbing activity is less than 10 percent of the parcel, proposed grading is less than 5,000 cubic yards</u></b> AND all stormwater is infiltrated on site.   |
| I   | 2.3.2<br>Redevelopment                              | 2-8      | Amend text of this section to be consistent with flow chart in Figure 2.2.  | Revise text in 2 <sup>nd</sup> paragraph of this section as follows: “All redevelopment shall comply with Minimum Requirement #2 <b><u>and Minimum Requirement #5 to the maximum extent practicable.</u></b> All redevelopment that exceeds impervious area or land disturbance thresholds shall comply with additional minimum requirements, as follows:”  |
| I   | 2.3.2<br>Redevelopment                              | 2-9      | Amend section “Additional Requirements for Redevelopment Project Sites” to clarify that retrofit requirements related to existing impervious surface only apply to certain projects consistent with Figure 2.2. | Revise text in 2 <sup>nd</sup> paragraph on this page as follows: “In addition to the redevelopment requirements above, for any redevelopment project a complete retrofit (application of Minimum Requirements #1 through #12 to all impervious and pollution <del>generation</del> <b><u>generating</u></b> pervious surfaces) will be required if <b><u>the project is one of the following types/facilities and</u></b> any of the following conditions apply:<br><br><b><u>Project types/facilities:</u></b><br><ul style="list-style-type: none"> <li>• <b><u>Public Facilities Construction (e.g. roads, parking, structures, utilities).</u></b></li> <li>• <b><u>Private Road Projects</u></b></li> <li>• <b><u>Commercial Building Permit</u></b></li> <li>• <b><u>Multi-family Building Permit</u></b></li> <li>• <b><u>Project Subject to Zoning Site Plan Review</u></b></li> </ul> <b><u>Conditions”</u></b> |

| VOL | SECTION   | PAGE NO. | DESCRIPTION & REASON FOR CHANGE  | CORRECTED TEXT (UNDERLINED = NEW TEXT, STRIKEOUT = DELETED TEXT)   |
|-----|---|----------|--|--|
| I   | 2.3.2<br>Redevelopment  | 2-10     | Add text describing when a redevelopment project is required to apply minimum requirements #1-#12 to replaced and new impervious surface consistent with Ecology SWMMWW (2005). This is a requirement of the Thurston County Phase II NPDES permit to include this provision.  | <p>Add new text to the end of the section “<b><i>Additional Requirements for Redevelopment Project Sites</i></b>” as follows: <b><u>“For those redevelopment projects that are not required to apply all minimum requirements to all impervious surfaces (new, replaced and existing) as described above, determine whether all Minimum Requirements must be applied to replaced impervious surfaces as follows:</u></b></p> <ul style="list-style-type: none"> <li>• <b><u>For road related projects, runoff from the replaced and new impervious surfaces (including pavement, shoulders, curbs and sidewalks) shall meet all the Minimum Requirements if the new impervious surfaces total 5,000 square feet or more and total 50% or more of the existing impervious surfaces within the project limits. The project limits shall be defined by the length of the project and the width of the right-of-way.”</u></b></li> <li>• <b><u>Other types of redevelopment projects shall comply with all the Minimum Requirements for the new and replaced impervious surfaces if the total of new plus replaced impervious surfaces is 5,000 square feet or more, and the valuation of proposed improvements – including interior improvements – exceeds 50% of the assessed value of the existing site improvements.”</u></b></li> </ul> |
| I   | 2.4.3<br>Minimum Requirement #2:<br>Construction Stormwater Pollution Prevention Plan (SWPPP) | 2-12     | Correct section reference to indicate reference is to Volume II.   | Revise text in text block as follows: “Projects in which the new, replaced, or new plus replaced impervious surfaces total 2,000 square feet or more, or disturb 7,000 square feet or more of land must prepare a Construction SWPPP (narrative and drawings) as part of the Drainage and Erosion Control Plan (See Section 2.4.1 <b><u>of Volume II</u></b> )”  |
| I   | 2.4.8<br>Minimum Requirement #7: Flow Control   | 2-20     | Allow a higher flow rate for when flow control facilities are required if a 15-minute time step continuous simulation hydrologic model is used. Ecology recently proposed amendments to the 2005 SWMMWW and the Phase II NPDES permits that increase the flow limit for requiring flow control facilities from 0.1 to 0.15 cfs if a 15-minute time step model is used. | Revise text in 3 <sup>rd</sup> bullet on this page as follows: “Projects that, through a combination of effective impervious surfaces and converted pervious surfaces, cause a 0.1 cubic feet per second <b><u>(0.15 cubic feet per second if model uses a 15-minute time step)</u></b> increase in the 100-year recurrence interval flow frequency from a threshold discharge area, as estimated using the WWHM, MGSFlood, or other approved model.”  |
| I   | 2.4.8<br>Minimum Requirement #7: Flow Control   | 2-21     | Modify Table 2.2 to include the 0.15 cfs increase in 100-year flow rate if 15-minute time step model is used.  | Amend Table 2.2 to add a footnote associated with the last line of the table. Footnote to state: <b><u>“&gt; 0.15 cubic feet per second if using a 15-minute time step in an approved model.”</u></b>  |

| VOL | SECTION  | PAGE NO. | DESCRIPTION & REASON FOR CHANGE   | CORRECTED TEXT (UNDERLINED = NEW TEXT, STRIKEOUT = DELETED TEXT)  |
|-----|--|----------|---|---|
| I   | 2.4.11<br>Minimum Requirement #10:<br>Operations & Maintenance | 2-25     | Clarify which public facilities are not required to execute a maintenance agreement. Only public facilities owned by Thurston County or its departments do not have to execute a maintenance agreement. | Revise the text of the last sentence of the first paragraph on this page as follows: “Publicly owned facilities <u>of Thurston County such as those owned by Thurston County Public Works, Central Services, and Resource Stewardship Departments</u> , are not required to execute an agreement.”  |
| I   | 2.4.11<br>Minimum Requirement #10:<br>Operations & Maintenance | 2-25     | Correct incorrect chapter reference.  | Revise text in 2 <sup>nd</sup> bullet to read: “Inclusion by reference of the Maintenance Plan prepared by the Project Engineer in accordance with Chapter <u>4-3</u> of this volume.   |
| I   | 3.2.1<br>Pre-submittal Meeting                                 | 3-7      | Delete paragraph stating presubmittal meetings are not required for short plats and large lot plats. Thurston County now requires presubmittal meetings for these projects.                             | Delete the last paragraph of this section as follows: “ <del>A presubmittal meeting is not required for single family residential projects, short plats, or large lot subdivision projects. However, it is still an option on these projects and may be appropriate on more complex projects to avoid delays in application review and acceptance.</del> ”  |
| I   | 3.4.1<br>Projects Exempt from Submittal Requirements           | 3-13     | Modify criteria for when a project with less than 5% total impervious surface is exempt from submittal requirements to include criteria for grading and land disturbing activity.                       | Revise the fourth bullet of this section to read: “Projects for which impervious area to be added or modified results in total impervious surface (including existing) of less than 5 percent of the parcel <u>and proposed grading is less than 5,000 cubic yards, and proposed land disturbing activity is less than 10% of the parcel</u> —providing that there is no increase in runoff or sediment discharge to adjoining property or to waters of the United States. If the property abuts a public roadway frontage, the area of the roadway frontage contributing drainage to the site shall be included in the impervious area computation and runoff from the roadway shall <u>be</u> accounted for.” |
| I   | 3.4.2<br>Abbreviated Drainage Plan                             | 3-13     | Modify criteria for when an Abbreviated Drainage Plan may be submitted to include limits on land conversions as well as impervious surface.   | Revise the 2 <sup>nd</sup> bullet of this section to read: “Project on a single lot where greater than 85 percent of the lot area can be classified as Type A/B (outwash) soils and where less than 5,000 square feet of new impervious surface is created, <u>less than 3/4 acre is converted to lawn/landscape and less than 2.5 acres are converted to pasture.</u> ”  |

| VOL | SECTION  | PAGE NO. | DESCRIPTION & REASON FOR CHANGE  | CORRECTED TEXT (UNDERLINED = NEW TEXT, STRIKEOUT = DELETED TEXT)   |
|-----|--|----------|--|--|
| I   | 3.4.2<br>Abbreviated Drainage Plan   | 3-14     | Modify criteria for when an Abbreviated Drainage Plan may be submitted to include limits on land conversions as well as impervious surface.  | <p>Revise 4<sup>th</sup> bullet of this section to read: “Project converting less than ¾ of an acre from native vegetation to lawn or landscaped areas <u>AND creating less than 2,000 square feet of new impervious surface or meeting one of the other conditions of this section related to limits on impervious surface</u> with no increase in impervious surface.”</p> <p>Revise 5<sup>th</sup> bullet of this section to read: “Project converting less than 2.5 acres from native vegetation to pasture or timberland to commercial agriculture <u>AND creating less than 2,000 square feet of new impervious surface or meeting one of the other conditions of this section related to limits on impervious surface.</u>”</p> |
| I   | 3.5.1<br>Plot Plan   | 3-16     | Add to the list of required elements of an abbreviated drainage plan the post-construction soils restoration soils management plan.  | <p>Add the following bullet to list beginning “The plot plan shall contain the following information:”</p> <ul style="list-style-type: none"> <li>• <u>How disturbed areas will meet requirements for Post-Construction Soils Quality and Depth (BMP LID.02).</u></li> </ul>   |
| I   | 3.8.1<br>Drainage Report<br>Drainage Report<br>Section 3–<br>Geotechnical Report                       | 3-24     | Correct section reference.   | Revise first sentence of first paragraph of this section to read: “A geotechnical report may be required for grading, or where infiltration BMPs are proposed, a geotechnical report must be prepared in accordance with Section <u>2.3.2</u> <del>3.3.2</del> of Volume III.  |
| I   | 4.2 Step-by-Step BMP Selection Process   | 4-3      | Correct BMP reference. BMP BF.06 should be BMP BF.04, there is no BMP BF.06 – the requirements for Compost Amended Filter Strips (CAVFS) have been incorporated into BMP BF.04 Basic Filter Strip. | <p>Revise blocks “<b>STEP 7A</b>” and “<b>STEP 7C</b>” references to BF.06 to read: “<u>BMP BF.04</u> -- <del>BMP BF.06</del>: Compost-Amended Vegetated Filter Strip”</p> <p>Revise block “<b>STEP 7D</b>” reference to BF.06 to read: “BMP BF.01 – <u>BF.04</u> <del>06</del> --Swales and Filter Strips.”</p>   |
| I   | 4.2.7 Step 7: Select Runoff Treatment BMP<br>Step 7A: Determine Feasibility and Select Oil Control BMP | 4-9      | Correct Section references (2).  | <p>In the first bullet of this section revise text to read: “An area of a commercial or industrial site subject to an expected average daily traffic (ADT) count equal to or greater than 100 vehicles per 1,000 square feet of gross building area (see Section <u>4.3</u> <del>4.4</del> for guidance on estimating traffic counts)</p> <p>In the last sentence on this page revise text to read: “Section <u>4.3</u> <del>4.4</del> has supplemental information on oil control, including land uses that are likely to have areas that fall within the definition of “high use sites”.”</p>  |

| VOL | SECTION  | PAGE NO. | DESCRIPTION & REASON FOR CHANGE  | CORRECTED TEXT (UNDERLINED = NEW TEXT, STRIKEOUT = DELETED TEXT)   |
|-----|--|----------|--|--|
| I   | 4.2.7 Step 7: Select Runoff Treatment BMP<br>Step 7A: Determine Feasibility and Select Oil Control BMP | 4-10     | Correct BMP reference. BMP BF.06 should be BMP BF.04, there is no BMP BF.06 – the requirements for Compost Amended Filter Strips (CAVFS) have been incorporated into BMP BF.04 Basic Filter Strip. | Revise the third bullet in paragraph beginning “Alternately, the following BMPs...” to read: “ <u>BMP BF.04</u> <del>BMP BF.06</del> : Compost-Amended Vegetated Filter Strip”   |
| I   | 4.2.7 Step 7: Select Runoff Treatment BMP<br>Step 7B: Phosphorous Control BMP                          | 4-11     | Correct reference to incorrect step, “Step 11” should be “Step 7C”   | Revise the first sentence of the note at the end of Step 7B to read: “Note: Project sites subject to phosphorous Treatment requirement could also be subject to the Enhanced Treatment requirements (see Step <u>7C</u> <del>11</del> ).   |
| I   | 4.2.7 Step 7: Select Runoff Treatment BMP<br>Step 7C: Enhanced Treatment BMP                           | 4-11     | Add an additional question to the beginning of this section to addressing infiltration in a well-head protection area.   | Add the following as the first step under Step 7C: “ <u>Does your project provide infiltration within a designated Well Head Protection Area for a public water supply serving over 1,000 connections?</u><br><br><u>If NO, proceed to the next question.</u><br><br><u>If YES, select enhanced treatment BMPs per the list at the end of Step 7C.</u> ” |
| I   | 4.2.7 Step 7: Select Runoff Treatment BMP<br>Step 7C: Enhanced Treatment BMP                           | 4-12     | Correct BMP reference. BMP BF.06 should be BMP BF.04, there is no BMP BF.06 – the requirements for Compost Amended Filter Strips (CAVFS) have been incorporated into BMP BF.04 Basic Filter Strip. | Revise the second bullet of list of enhanced treatment BMPs to read: “ <u>BMP BF.04</u> : <del>BMP BF.06</del> : Compost-Amended Vegetated Filter Strip”   |
| I   | 4.3.4 Oil Control Menu   | 4-15     | Correct BMP reference. BMP BF.06 should be BMP BF.04, there is no BMP BF.06 – the requirements for Compost Amended Filter Strips (CAVFS) have been incorporated into BMP BF.04 Basic Filter Strip. | Revise 4 <sup>th</sup> bullet of this section to read: “ <u>BMP BF.04</u> : <del>BMP BF.06</del> : Compost-Amended Vegetated Filter Strip”   |
| I   | 4.4.3 Phosphorous Treatment Menu   | 4-16     | Correct section reference.   | Revise first sub-bullet of first bullet of this section to read: “ <b>Infiltration treatment:</b> If infiltration is through soils meeting the minimum site suitability criteria for infiltration treatment (see <u>Section 2.3</u> <del>Chapter 3</del> of Volume III and Volume V)   |
| I   | 4.5.2 Enhanced Treatment Menu  | 4-19     | Correct BMP reference. BMP BF.06 should be BMP BF.04, there is no BMP BF.06 – the requirements for Compost Amended Filter Strips (CAVFS) have been incorporated into BMP BF.04 Basic Filter Strip. | Revise the first bullet on this page to read: “ <u>BMP BF.04</u> : <del>BMP BF.06</del> : Compost-Amended Vegetated Filter Strip”  |

| VOL   | SECTION   | PAGE NO.                            | DESCRIPTION & REASON FOR CHANGE  | CORRECTED TEXT (UNDERLINED = NEW TEXT, STRIKEOUT = DELETED TEXT)   |
|---|---|-------------------------------------|--|--|
| I   | 4.6 Basic Treatment: Supplemental Information<br>4.6.1 Applicability  | 4-19                                | Correct section reference.   | Revise first sub-bullet of first bullet of this section to read: “The soil suitability criteria for infiltration treatment are met (see <u>Section 2.3</u> <del>Chapter 3</del> of Volume III and Volume V), or”   |
| I   | Appendix I-A<br>Glossary  | Multiple                            | Page numbers in this Appendix should all be in the form of “A-x”; Where page numbers are in the form of “B-x” it should be considered “A-x”  | Page numbering incorrect – Pages indicated as “B-x” should revised to “A-x” where “x” is a generic page number.  |
| I   | Appendix I-A<br>Glossary  | B-10<br>(should be A-10, see above) | Definition of redevelopment needs to be modified to be consistent with Ecology definition.   | Revise the first part of the definition of Redevelopment to read: “On a site that is already developed ( <u>i.e., has 35% or more of existing impervious surface coverage</u> ), the creation or addition of impervious surfaces...” [Remainder of definition remains the same].   |
| I   | Appendix I-E<br>Maintenance Agreement Forms                           | All                                 | All of the standard agreement forms have been modified. The current version is available for download on the Thurston County Stormwater web-site.<br><a href="http://www.co.thurston.wa.us/stormwater/manual/manual-home.html">http://www.co.thurston.wa.us/stormwater/manual/manual-home.html</a> | Replace stormwater maintenance agreements in this Appendix with the new form of agreement available on the Thurston County Stormwater web-site.  |
| <b>VOLUME II – CONSTRUCTION STORMWATER POLLUTION PREVENTION</b> |   |                                     |  |  |
| II  | Table of Contents   | i                                   | Under Chapter 3, Section 3.1 Change reference to BMP C252 to BMP C100 -- BMP C252 is for High pH Neutralization Using CO2  | Revise Section 3.1 contents reference to BMP C252 to read: “3.1.2 BMP <u>C100</u> <del>C252</del> : Preservation of Upper Soil Structure (Native Topsoil)...”  |
| II  | 2.1.1<br>What is a Construction Stormwater Pollution Prevention Plan? | 2-1                                 | Revise language related to short form SWPP to be consistent with requirements of Volume I.   | Modify the 2 <sup>nd</sup> sentence of the 3 <sup>rd</sup> paragraph of this section to read: “For projects not meeting the above threshold, and those <b>projects of less than 1-acre disturbed area</b> that qualify for the Abbreviated <b>or Engineered Abbreviated</b> Drainage Plan, a Short Form Construction SWPPP may be acceptable for erosion and sediment control purposes (see Appendix II-C).” |
| II  | 2.1.4<br>General Principles   | 2-6                                 | Change reference to BMP C252 to reference BMP C100.  | Revise 4 <sup>th</sup> bullet on this page to read: “BMP <u>C100</u> <del>252</del> : Preservation of Upper Soil Structure (Native Topsoil).”  |
| II  | 2.3.1<br>Step 1 – Document Existing site Conditions                   | 2-7                                 | Correct section reference.   | Revise the first sentence of the last bullet on this page to read: “Prepare a topographic drawing of the site to show existing contour elevations at intervals of 1 to 5 feet depending upon the slope of the terrain (see Section <u>2.4</u> <del>2.5</del> for drawing protocols).”  |
| II  | 2.3.2<br>Step 2 – Select and Design BMPs                              | 2-11                                | Change reference to BMP C252 to reference BMP C100.  | Revise 2 <sup>nd</sup> sub-bullet of last bullet on this page to read: “BMP <u>C100</u> <del>252</del> : Preservation of Upper Soil Structure (Native Topsoil).”   |
| II  | 2.4.7<br>Required Drawing Size  | 2-28                                | Delete reference to 24x36 drawings. Only 22x34 drawings acceptable.  | Revise this section read: “Drawings shall be <del>24x36 inches</del> or 22x34 inches. Original sheets shall be Mylar or photo Mylar.   |

| VOL   | SECTION   | PAGE NO. | DESCRIPTION & REASON FOR CHANGE   | CORRECTED TEXT (UNDERLINED = NEW TEXT, STRIKEOUT = DELETED TEXT)  |
|---|---|----------|---|---|
| II  | 3.1.2 BMP C252: Preservation of Upper Soil Structure (Native Topsoil)                           | 3-6      | Revise BMP number to eliminate duplication.   | Revise heading of this section to read: “3.1.2 BMP <u>C100</u> <del>252</del> : Preservation of Upper Soil Structure (Native Topsoil).”   |
| II  | 3.1.11 BMP C123: Plastic Covering   | 3-34     | Change measurement for plastic sheeting to mil since most sheeting is specified by mil thickness not millimeters and all other locations in manual use this unit.   | Under section <i>Design and Installation Specifications</i> , 2 <sup>nd</sup> major bullet should read: “Plastic sheeting shall have a minimum thickness of <u>6 mil</u> <del>0.06 millimeters</del> .”   |
| II  | 3.1.14 BMP C126 Polyacrylamide for Soil Erosion Protection                                      | 3-40     | Delete reference to WSDOT list of approved PAM products. WSDOT no longer maintains a list.  | Under section “ <b>Conditions of Use</b> ” delete the last sentence of the second paragraph as follows: “ <del>The Washington State Department of Transportation (WSDOT) has listed approved PAM products on their web page.</del> ”  |
| II  | 3.2.16 BMP C241 Temporary Sediment Pond   | 3-123    | Make correction to Principal Spillway language consistent with Ecology SWMMWW Corrections and Clarifications for Volume II posted to the Ecology Web-site.  | Under section “ <b>Sizing of Discharge Mechanisms:</b> ” sub-section “ <b>Principal Spillway</b> ” amend to read:<br><br>“ <b>Principal Spillway:</b> Determine the required diameter for the principal spillway (riser pipe). The diameter shall be the minimum necessary to pass the <u>site’s developed (unmitigated)</u> <del>pre-developed</del> 10-year peak flow (Q <sub>10</sub> ) determined using a 15-minute time step in an approved continuous runoff model <del>for the developed</del> . Use Figure 3.24 to determine this diameter ( <i>h</i> = 1-foot). <i>Note: A permanent control structure may be used instead of a temporary riser.</i> ”   |
| <b>VOLUME III – HYDROLOGIC ANALYSIS AND STORMWATER CONVEYANCE</b> |   |          |   |   |
| III   | 2.2.2 Closed Depression Located On-Site or with a Legal Right to Discharge to Closed Depression | 2-7      | Section states there are three cases that dictate approaches to meeting MR #7. However, for closed depressions with legal right to discharge or on-site there are only two cases. The third case would have been an off-site closed depression, but that has its own section (2.2.3).   | Revise the last sentence of the first paragraph of this section to read: “In assessing the impacts of the proposed project on the performance of the closed depression, there are <u>two</u> <del>three</del> cases that dictate different approaches to meeting Minimum Requirement #7 – <i>Flow Control</i> .”  |
| III   | 2.3.4 Determine Design Infiltration Rate  | 2-21     | Clarify conditions under which prescriptive downspout infiltration BMPs can be used. Since Thurston County includes a prescriptive drywell sizing (Table 2.3 of Volume V) that is not included in Ecology’s 2005 SWMMWW, its use is limited to areas outside of the NPDES Phase II permit boundary or within the NPDES boundary only for projects that are not required to meet Flow Control Requirements (MR #7) | Revise the paragraph regarding prescriptive BMP sizing to read as follows: “Prescriptive BMP sizing methods can be used in lieu of estimating an infiltration rate for downspout infiltration (BMP LID.04) when the following conditions apply: <ul style="list-style-type: none"> <li>• Contributing drainage area is less than 7,500 square feet.</li> <li>• <u>For prescriptive drywells sized using Table 2.3 of Volume V the project must either be located outside of the Thurston County Phase II NPDES permit boundary or not be subject to Flow Control (MR #7).</u></li> <li>• Property is a single family residential lot or commercial development.</li> <li>• Soils are characterized <del>as outwash</del> by a soils professional (including a septic system designer) <u>as one of the soil types used to establish the design criteria of BMP LID.04 (i.e. infiltration trenches limited to loam, sandy loam, etc.)</u></li> </ul> |

| VOL                               | SECTION  | PAGE NO. | DESCRIPTION & REASON FOR CHANGE  | CORRECTED TEXT (UNDERLINED = NEW TEXT, STRIKEOUT = DELETED TEXT)  |
|-----------------------------------|--|----------|--|---|
| III                               | 2.3.4<br>Determine Design Infiltration Rate                        | 2-22     | Revise criteria for determining the infiltration rate of engineered soils used in bioretention consistent with current Ecology and Puget Sound Partnership guidance.   | Revise item 2 in subsection “ <b>Determine Infiltration Rate of Engineered Treatment Soils</b> ” to read as follows: “2. The long term <b>infiltration</b> rate of the engineered soils <u>can be assumed to be 6 inches per hour with an applied correction factor of 2 or 4 depending upon the drainage area if the engineered soils meet the soil specifications for a bioretention facility as described in Section 2.2.5, Materials, of Volume V, for other engineered soils the long term infiltration</u> will be based on ASTM 2434 Standard Method for Permeability of Granular Soils (Constant Head) with a compaction rate of 85 percent of maximum density using ASTM 1557 Test Method (Modified Proctor) with an <u>applied correction factor of 2 or 4 depending upon the drainage area.</u> <del>Infiltration reduction factor of 4 (multiply calculated infiltration rate by 0.25 to get long term infiltration rate).</del> <u>Use 2 as the applied correction factor if the contributing area has less than 5,000 square feet of pollution generating impervious surface; and less than 10,000 square feet of impervious surface; and less than ¼ acre of lawn, landscape, and other pervious surface; otherwise a correction factor of 4 shall be applied (i.e. multiply the short term infiltration rate by a factor of 0.25 or 0.5).</u> |
| III                               | 3.7.7<br>Pipe Structure Criteria                                   | 3-15     | In section “ <i>Catch Basins and Manholes</i> ” the second to last paragraph on page 3-15 references a detail that is not included in the DDECM. The correct detail is from the Pierce County Stormwater Manual – Detail 10.0 of Attachment A. A copy of this detail is attached to this Errata. | Amend the second to last paragraph of this section to read as follows: “When the road profile equals or exceeds 6 percent between structures, an asphalt berm shall be installed around the inlet of the structure or the catch basin may be recessed into the curb per <u>detail 10.0, Grate Detail for Steep Slopes, of Attachment A to the Pierce County Stormwater Management and Site Development Manual</u> <del>this detail.</del> ” -- [note: a copy of this detail is attached to this errata or can be found on the Pierce County web-site]   |
| III                               | 3.8.1<br>General Design Criteria for Outfall Features              | 3-21     | Clarify outfall design requirements for outfalls downstream of flow control facilities.  | Revise the last sentence of the first paragraph of this section to read: “The Project Engineer shall present calculations showing the velocity, discharge, and flow path of the 100-year, 24-hour event; <u>for outfalls downstream of a flow control BMP, the unmitigated 100-year, 24-hour event flow shall be used.</u> ”  |
| III                               | Appendix III-B<br>Design Aids                                      | B-12     | Correct table reference and incorrect “n” value.   | Item 6 of this table should read: 6. Nearly bare ground (n= <u>0.025</u> <del>0.25</del> )<br>Item 12 of this table should read: “12. Other streams, man-made channels and pipe – n** determined from Table <u>B.3</u> <del>6.2</del> ”   |
| <b>VOLUME IV – SOURCE CONTROL</b> |  |          |  |   |
| IV                                | 1.1<br>What is the Purpose of this Volume?                         | 1-1      | Add reference to Commercial Source Control Plan template and Single Family Residential Source Control Plan template available on Thurston County web-site.   | Append the second paragraph of this section as follows: “ <u>A template is available for preparation of a commercial or single family residential source control plan. Use of the templates is not required but can be downloaded from the Thurston County Stormwater web-site.</u> ”   |
| IV                                | 1.7<br>What if I am Already Implementing Best Management Practices | 1-6      | Correct section reference.   | Reference to regulatory requirement R.2 in the last sentence of the first paragraph should be R.3.  |
| IV                                | 1.8<br>How Do I Get Started?                                       | 1-6      | Correct section reference.   | Reference to Chapter 5 in the first paragraph of this section should be Chapter 6.  |

| VOL | SECTION  | PAGE NO. | DESCRIPTION & REASON FOR CHANGE   | CORRECTED TEXT (UNDERLINED = NEW TEXT, STRIKEOUT = DELETED TEXT)  |
|-----|--|----------|---|---|
| IV  | 4.1<br>Explanation of Required BMPs                              | 4-2      | Correct section reference.  | Reference to Section 2.4.6 in the first sentence of the last paragraph of this section should be 2.4.7.   |
| IV  | A2.1<br>Loading and Unloading Areas for Liquid or solid Material | 4-18     | Correct section reference.  | Reference to BMP A7.14 in second bullet on this page should be A7.15  |
| IV  | A2.2<br>Fueling at Dedicated Stations                            | 4-21     | Correct section reference.  | Reference to BMP A7.14 in first bullet on this page should be BMP A7.15.  |
| IV  | A2.2<br>Fueling at Dedicated Stations                            | 4-23     | Correct section reference.  | Reference to BMP A7.14 on this page should be BMP A7.15.  |
| IV  | A4.5<br>Recyclers and Scrap Yards                                | 4-73     | Revise reference for chemical treatment of stormwater.  | Revise the last sentence of the last bullet on this page to read: “See <b><u>BMP C250, C252, C253 of Volume II</u></b> <del>T.2 and T.4 in Chapter 5</del> for details on these systems.  |
| IV  | A4.9<br>Parking and Storage for Vehicles and Equipment           | 4-81     | Correct section references.   | Revise the last bullet under “ <b>Required BMPs</b> ” to read: “An oil removal system such as an API or <b><u>coalescing</u></b> <del>coalescent</del> plate oil and water separator, or equivalent BMP (see Volume V), approved by Thurston County, is applicable for parking lots meeting the threshold vehicle traffic intensity level of a high-use site. For more information on high-use sites, refer to Volume I, <b><u>Sections 4.2.7 and 4.3</u></b> <del>Section 4.2.5,</del> and Volume V, <b><u>Chapter 8, Oil and Water Separation BMPs.</u></b> <del>Section 3.2.</del>   |
| IV  | A7.10<br>Urban Streets   | 4-117    | Correct section reference.  | Revise the first paragraph of the first bullet under “ <b>Suggested BMPs</b> ” to read: “For maximum stormwater pollutant reductions on curbed streets and high volume parking lots, use efficient vacuum sweepers (refer to <b><u>2005 Ecology Stormwater Management Manual for Western Washington</u></b> , Volume V, Chapter <b><u>12</u></b> <del>11</del> for information about an emerging high-efficiency vacuum sweeper technology).  |
| IV  | A7.13<br>Maintenance of Roadside Ditches                         | 4-123    | Correct terminology. Refers to “Ecology Embankment” which is now called “Media Filter Drain.” | Revise the first bullet under “ <b>Suggested BMPs</b> ” to read: “Install biofiltration swales, bio-infiltration swales and filter strips to treat roadside runoff wherever practicable and use engineered topsoils wherever necessary to maintain adequate vegetation (CH2M Hill 2000). Consider using the <b><u>Media Filter Drain</u></b> <del>Ecology Embankment</del> BMP where adequate slope and level of traffic permit it. These systems can improve infiltration and stormwater pollutant control upstream of roadside ditches. See Volume V of this manual, <b><u>Stormwater Runoff Treatment BMPs</u></b> , for additional information about biofiltration swales, bio-infiltration swales, filter strips, and <b><u>media filter drains</u></b> <del>ecology embankments</del> . |
| IV  | Chapter 6  | 6-1      | Correct section reference.  | Revise the 3 <sup>rd</sup> sentence of the 2 <sup>nd</sup> paragraph of this section to read: “For more information on the following BMPs, refer to the information in <b><u>Chapter 4, Best Management Practices for Commercial and Industrial Activities, for related types of activities.</u></b> <del>Sections 3.1 through 3.7 of this chapter.</del>   |

| VOL                               | SECTION  | PAGE NO. | DESCRIPTION & REASON FOR CHANGE   | CORRECTED TEXT (UNDERLINED = NEW TEXT, STRIKEOUT = DELETED TEXT)   |
|-----------------------------------|--|----------|---|--|
| <b>VOLUME V – STORMWATER BMPs</b> |  |          |   |  |
| V                                 | Table of Contents  | iv       | Correct reference to BMP BF.06 – CAVFS  | Last item on this page, Table C-8, revise text to read: “Maintenance Checklist for Compost Amended Soil for Post-Construction Soil Quality and Depth (BMP LID.02 and Compost-Amended Vegetated Filter Strip (BMP BF. <u>04 06</u> )”   |
| V                                 | 2.1.2 LID.02 Post-Construction Soils Quality and Depth   | 2-13     | In “Submittals and Approvals” section, add provision allowing soils restoration information to be shown on an Abbreviated Drainage Plan or Engineered Abbreviated Drainage Plan rather as an alternative to Soil Management Plan described in this section. | Under <b><i>Submittals and Approvals</i></b> revise the first paragraph to read: “A site specific Soil Management Plan (SMP) shall be submitted and must be approved as part of the permitting process for the project <b><u>(for Abbreviated and Engineered Abbreviated Drainage Plans the soils restoration information can be shown on the Plot Plan)</u></b> . The SMP shall be prepared per the Soils for Salmon guidance document (see Design Guidelines below) and includes:”   |
| V                                 | 2.1.1 LID.02 Post-Construction Soil Quality and Depth  | 2-16     | Change reference to BMP C252 to reference BMP C100.   | Change reference to “C252” in last bullet of page to “BMP <b><u>C100</u></b> ”   |
| V                                 | 2.1.3 LID.03 Reduce Effective Impervious Area of Roads, Shared Accesses, Alleys, Sidewalks, Driveways, and Parking Areas | 2-23     | Correct references to Thurston County code for parking requirements. Parking lot and shared parking requirements differ between TCC Titles 20, 21, 22, and 23.  | Under sub-section “ <i>Parking</i> ” revise text of first paragraph (Parking Lots) to read: “Use the minimum off-street parking requirements outlined in <b><u>Thurston County Code Titles 20 to 23, as applicable Title 20.44.030 TCC</u></b> for non-residential uses. Pervious materials should be considered for parking lots where feasible.”<br><br>Under sub-section “ <i>Parking</i> ” revise text of second paragraph ( <b>Shared Parking</b> ) to read: “The total amount of impervious area can be reduced by utilizing shared parking. This strategy is appropriate for land uses with non-competing hours of operation, such as a church and a school or office. See <b><u>Thurston County Code Title 20.44 (Non-North County UGA), Title 21.72 (Lacey UGA), Title 22.50 (Tumwater UGA), or Title 23.38.180 (Olympia UGA)</u></b> for restrictions and requirements on shared parking.” |
| V                                 | 2.2.1 LID.04 Downspout Infiltration Systems  | 2-26     | Correct section reference.  | Under sub-section “ <b>Hydraulic Design Elements</b> ” revise first sentence to read: “A structure with a sump (see Figure <b><u>2.1 2-2</u></b> ) shall be located upstream of the trench, which provides a minimum of 12 inches of depth below the outlet riser.”  |

| VOL                             | SECTION  | PAGE NO. | DESCRIPTION & REASON FOR CHANGE   | CORRECTED TEXT (UNDERLINED = NEW TEXT, STRIKEOUT = DELETED TEXT)   |                                 |              |                    |              |                              |              |                   |               |             |               |
|---------------------------------|--|----------|---|--|---------------------------------|--------------|--------------------|--------------|------------------------------|--------------|-------------------|---------------|-------------|---------------|
| V                               | 2.2.1 LID.04<br>Downspout Infiltration Systems               | 2-26     | For downspout infiltration trenches, revise section to incorporate prescriptive design standards and criteria from the 2005 Ecology SWMMWW which were inadvertently not included in the 2009 DDECM.   | <p>Under “<b>Downspout Infiltration Trench</b>” add a new bullet to sub-section “<i>Geometry</i>” as follows:</p> <ul style="list-style-type: none"> <li>• <u>The following minimum lengths (linear feet) per 1,000 square feet of roof area based on soil type may be used for sizing downspout infiltration trenches.</u></li> </ul> <table border="1" data-bbox="1951 433 2408 594"> <tr> <td><u>Course sands and cobbles</u></td> <td><u>20 LF</u></td> </tr> <tr> <td><u>Medium sand</u></td> <td><u>30 LF</u></td> </tr> <tr> <td><u>Fine sand, loamy sand</u></td> <td><u>75 LF</u></td> </tr> <tr> <td><u>Sandy loam</u></td> <td><u>125 LF</u></td> </tr> <tr> <td><u>Loam</u></td> <td><u>190 LF</u></td> </tr> </table> <p>Under “<b>Downspout Infiltration Trench</b>” sub-section “<i>Materials</i>” revise 1<sup>st</sup> bullet to read as follows:</p> <ul style="list-style-type: none"> <li>• The aggregate material for the infiltration trench shall consist of <u>¾” to 1-½” diameter</u> <del>1.5 to three fourth inch</del> washed round rock <u>that meets WSDOT Specification 9-03.12(5).</u>”</li> </ul> <p>Under “<b>Downspout Infiltration Trench</b>” sub-section “<i>Materials</i>” revise 3<sup>rd</sup> bullet to read as follows:<br/> “<u>Infiltration trenches may be placed in fill material if the fill is placed and compacted under the direct supervision of a geotechnical engineer or professional civil engineer with geotechnical expertise, and if the measured infiltration rate is at least 8 inches per hour. Trench length in fill must be 60 linear feet per 1,000 square feet of roof area.</u> Infiltration rates can be tested using methods described in Volume III.”</p> <p>Under “<b>Downspout Infiltration Trench</b>” sub-section “<i>Other Design Criteria</i>” add a new bullet and revise the first sentence of the 3<sup>rd</sup> bullet as follows:</p> <ul style="list-style-type: none"> <li>• <u>“Infiltration trenches should not be built on slopes steeper than 25 percent (4:1). A geotechnical analysis and report may be required on slopes over 15 percent or if located within 200 feet of the top of a steep slope or landslide hazard area.</u></li> <li>• Parallel trenches shall be spaced no closer than <u>6</u> <del>40</del> feet except that trenches whose target for discharge is the interflow zone.”</li> </ul> | <u>Course sands and cobbles</u> | <u>20 LF</u> | <u>Medium sand</u> | <u>30 LF</u> | <u>Fine sand, loamy sand</u> | <u>75 LF</u> | <u>Sandy loam</u> | <u>125 LF</u> | <u>Loam</u> | <u>190 LF</u> |
| <u>Course sands and cobbles</u> | <u>20 LF</u>   |          |   |  |                                 |              |                    |              |                              |              |                   |               |             |               |
| <u>Medium sand</u>              | <u>30 LF</u>   |          |   |  |                                 |              |                    |              |                              |              |                   |               |             |               |
| <u>Fine sand, loamy sand</u>    | <u>75 LF</u>   |          |   |  |                                 |              |                    |              |                              |              |                   |               |             |               |
| <u>Sandy loam</u>               | <u>125 LF</u>  |          |   |  |                                 |              |                    |              |                              |              |                   |               |             |               |
| <u>Loam</u>                     | <u>190 LF</u>  |          |   |  |                                 |              |                    |              |                              |              |                   |               |             |               |
| V                               | 2.2.1 LID.04<br>Downspout Infiltration Systems               | 2-30     | Distinguish between a standard drywell, which can serve up to 1,000 square feet of roof area in medium or course sands and the prescriptive drywell sizing which is limited to projects not subject to Minimum Requirement #7 or is located in rural areas (ie. Outside NPDES Phase II boundary and UGA’s). | Under “ <b>Design Criteria for Infiltration Drywell Systems</b> ” amend the first paragraph to read as follows: <u>“Two alternatives are available for infiltration drywells, Figure 2.3 presents the design of a typical downspout infiltration drywell system. For systems conforming to this typical design each drywell may serve up to 1,000 square feet of impervious surface for either medium sands or course sands. The simplified sizing for drywells as shown in Table 2.3 may use alternative configurations such as shown in Figure 2.1 and be used for other soil types, but is limited to those projects located in rural areas (i.e. outside of the NPDES Phase II permit boundary and UGA’s) or projects in urban areas that are not subject to Minimum Requirement #7. The Drywells shall include a catch basin (as shown in Figure 2.1), or its equivalent upstream of the drywell for particulate removal. These systems are designed as specified below:”</u>   |                                 |              |                    |              |                              |              |                   |               |             |               |
| V                               | 2.2.1 LID.04<br>Downspout Infiltration Systems<br>Figure 2.3 | 2-31     | Modify Figure 2.3 to delete reference to “yard drains” and require Catch Basin sump to meet design criteria shown in Figure 2.1.  | In figure 2.3 delete reference to “yard drain” (two locations”. Add a note at the bottom of the Figure to read as follows: <u>“Note: Catch Basin sump for infiltration drywells shall be consistent with CB Sump detail of Figure 2.1”</u>   |                                 |              |                    |              |                              |              |                   |               |             |               |

| VOL | SECTION  | PAGE NO.   | DESCRIPTION & REASON FOR CHANGE  | CORRECTED TEXT (UNDERLINED = NEW TEXT, STRIKEOUT = DELETED TEXT)  |
|-----|--|------------|--|---|
| V   | 2.2.2 LID.05<br>Downspout Dispersion Systems               | 2-33       | Modify subsection “ <i>Applicability</i> ” of this section to be consistent with Ecology standards contained within the 2005 SWMMWW to include criteria related to lot size (downspout infiltration not required for lots of 22,000 sq ft or greater). Also add criteria related to dispersion near septic systems and property line setbacks and correct when roof area can be considered grassed surface.  | Amend the sub-section “ <b><i>Applicability</i></b> ” to add a 2 <sup>nd</sup> paragraph to read as follows:<br><b><u>“Downspout dispersion shall be used in all single-family lots that meet one of the following criteria:</u></b><br><ol style="list-style-type: none"> <li><b><u>1. Lots greater than or equal to 22,000 square feet where downspout infiltration is not being provided according to the requirements in Section 2.2.1.</u></b></li> <li><b><u>2. Lots smaller than 22,000 square feet where soils are not suitable for downspout infiltration (as determined in Section 2.2.1) and where the design criteria below can be met.”</u></b></li> </ol>   |
| V   | 2.2.2 LID.05<br>Downspout Dispersion Systems               | 2-33       | Modify subsection “ <i>Limitations</i> ” of this section to eliminate duplication of requirements related to dispersion near steep slopes(same requirement is also provided in the “Setbacks” sub-section) and to include a requirement related to dispersion near septic systems. Also delete reference to setbacks in Appendix V-E, since Appendix V-E does not include setbacks for dispersion areas. Setbacks will be described in the “Setbacks” sub-section (see below). | Amend sub-section “ <b><i>Limitations</i></b> ” to read as follows:<br><br>“No erosion or flooding of downstream properties may result.<br><br><b><u>Dispersion should be used only where runoff can be directed away from structures to a flat portion of the lot and where lot size is such that runoff would be expected to be contained onsite (use 10,000 square feet as a guideline). Dispersion is not well suited to small lots, steep slopes, or lots with poor soils and/or a high groundwater table. “</u></b><br><br><del>See Appendix V-E (Site Design Elements) for setbacks. For dispersion systems located within 50 feet of the top of a slope of 15 percent or greater with a height of 10 feet, a geotechnical analysis and report must be prepared addressing the potential impact of the facility on the slope. The geotechnical report may recommend a reduced setback, but in no case shall the setback be less than the vertical height of the slope. The Administrator or designee may require a geotechnical report to evaluate whether a slope exceeding 15 percent is a landslide hazard area. Increased setbacks or prohibition of infiltration facilities may result from this report.”</del> |
| V   | 2.2.2 LID.05<br>Downspout Dispersion Systems<br>Figure 2.4 | 2-35       | Modify Figure 2.4 to delete reference to “yard drains” and require Catch Basin sump to meet design criteria shown in Figure 2.1.   | In figure 2.4 delete reference to “yard drain.” Add a note at the bottom of the Figure to read as follows: <b><u>“Note: Catch Basin sump for downspout dispersion trench shall be consistent with CB Sump detail of Figure 2.1”</u></b>   |
| V   | 2.2.2 LID.05<br>Downspout Dispersion Systems               | 2-37       | Modify subsection “ <b>Setbacks</b> ” to include setbacks to property lines, drinking water wells, and structures.   | Amend sub-section “ <b>Setbacks</b> ” to add the following:<br><b><u>“A setback of at least 5 feet shall be maintained between the edge of a dispersion trench and any structure or property line.”</u></b>   |
| V   | 2.2.3 LID.06<br>Sheet Flow Dispersion                      | 2-40, 2-42 | Correct truncated paragraph.   | Amend the last sentence of the first paragraph of sub-section “ <b>Design Criteria</b> ” to read:<br>“This may be an extension of subgrade <b><u>material (crushed rock), modular pavement, drain rock, or other material approved by Thurston County</u></b> and shall be lower than the adjacent impervious surface by approximately 1-inch.”<br><br>On page 2-42, delete the sentence fragment: <del>material (crushed rock), modular pavement, drain rock, or other material approved by Thurston County.</del>   |

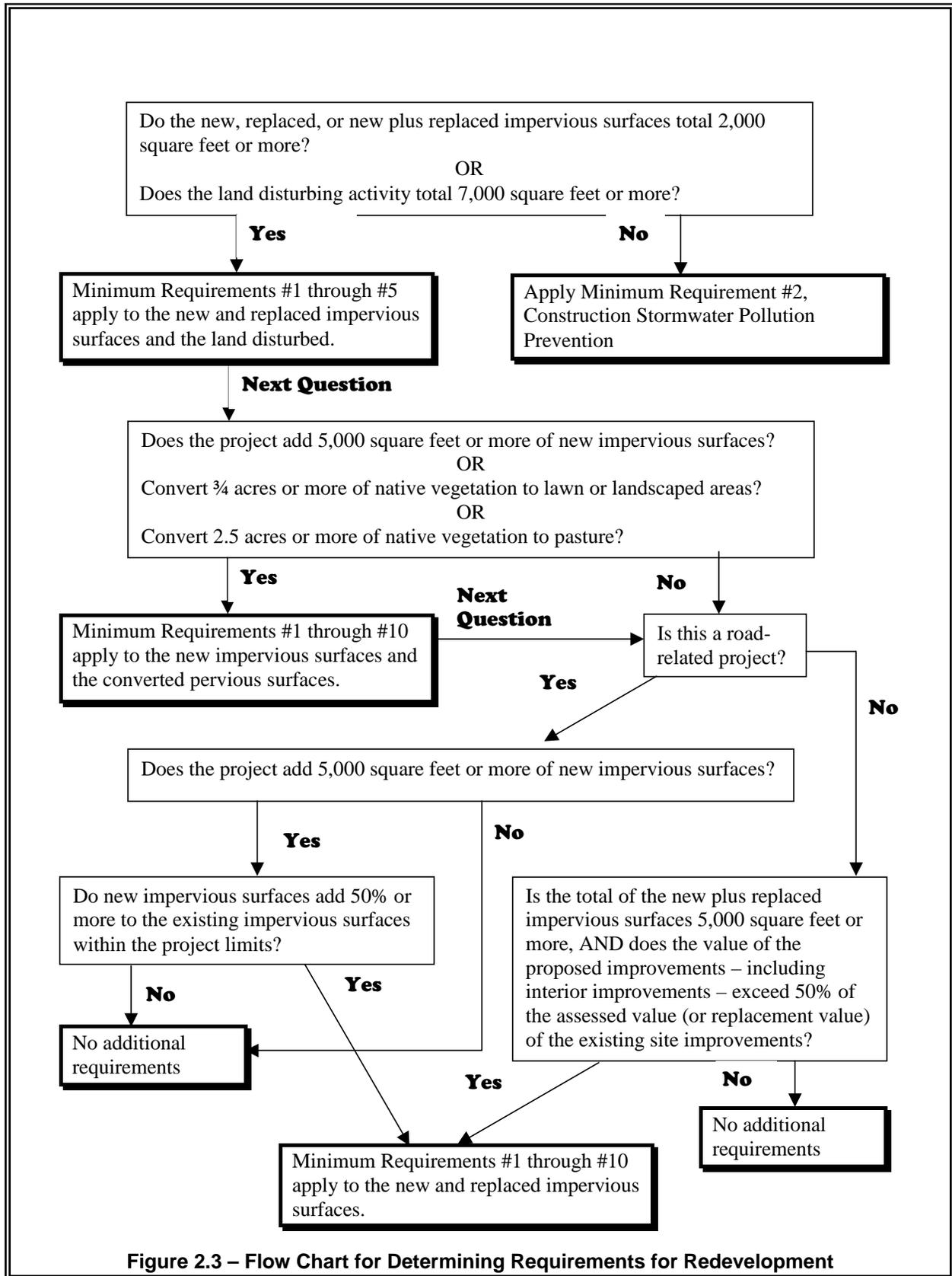
| VOL | SECTION                                       | PAGE NO.           | DESCRIPTION & REASON FOR CHANGE   | CORRECTED TEXT (UNDERLINED = NEW TEXT, STRIKEOUT = DELETED TEXT)   |
|-----|---|--------------------|---|--|
| V   | 2.2.5 LID.08<br>Bioretention Facilities       | 2-47<br>Figure 2.8 | Correct minimum width in Figure 2.8 to correspond to minimum width described in text (page 2-55)  | In Figure 2.8, Change the bottom width dimension to read: “2’ MIN” instead of “3’MIN”  |
| V   | 2.2.5 LID.08<br>Bioretention Facilities       | 2-50               | Modify section “ <b>Infiltration Rate Determination</b> ” subsection “ <i>Imported Soil</i> ” to clarify range within design or short term infiltration rate must fall for bioretention soils based on current Ecology guidance including allowing use of a 6-inch per hour short term rate (before applying correction factor of 2 or 4 per Volume III) if the soil mix meets the standards of this BMP. | Add the following paragraph to the end of subsection “ <i>Imported Soil</i> ” of section “ <b>Infiltration Rate Determination</b> ”:<br><br>“ <b>The design infiltration rate after applying the applicable correction factor should not be less than 1 inch per hour or greater than 2.4 inches per hour. However, an uncorrected infiltration rate of up to 12 inches per hour (design rate of 3 to 6 inches per hour after application of correction factor) is allowed if the imported soil mix also meets the following criteria: a CEC greater than 5 meq/100 grams of dry soil; 8-10 percent organic matter content; 2-5 percent fines; and a minimum soil depth of 18inches.</b> ” |
| V   | 2.2.5 LID.08<br>Bioretention Facilities       | 2-52               | Modify Table 2.4 to reflect computational time step of 15-minutes consistent with Thurston County version of WWHM3 which uses 15- minute time step precipitation data.  | In Table 2.4, “ <b>Continuous Modeling Assumptions for Bioretention Cells</b> ” Change Computational Time Step from 5-minutes to 15-minutes.   |
| V   | 2.2.9 LID.12<br>Rural Road Natural Dispersion | 2-85               | Correct section reference and typographical errors.   | In subsection “ <b>Limitations</b> ” amend the last paragraph and first bullet of the last paragraph to read:<br><br>“The following <u>are</u> <del>area</del> additional limitations for <u>sites</u> <del>site</del> where runoff is channelized upstream of the dispersion area:<br><br><ul style="list-style-type: none"> <li>The channelized flow must be redispersed before entering the natural dispersion area. Flow dispersal trenches (see Section <u>3.8.1</u> <del>3-2</del> of Volume III) must be used to create sheet flow conditions.”</li> </ul>  |
| V   | 3.1.6<br>Contingency Planning                 | 3-5                | Correct section reference.  | Amend the last sentence of the first paragraph of this section to read: “Therefore, it is necessary to have a plan for fixing under performance discovered after facilities are installed (see Section <u>3.1.5</u> <del>3-1-2</del> , Verification of Performance).”  |
| V   | 3.2.1 IN.01<br>Infiltration Basins            | 3-10               | Correct section reference.  | In subsection “ <b>Materials</b> ” reference to “Appendix V-A” in 1 <sup>st</sup> bullet “ <b>Lining Material</b> ” should be “Appendix V-B”   |
| V   | 3.2.2 IN.02<br>Infiltration Trenches          | 3-19               | Correct section reference.  | In subsection “ <b>Materials</b> ” reference to “Appendix V-A” in 2nd bullet “ <b>Geotextile fabric liner</b> ” should be “Appendix V-B”   |
| V   | Figure 4.1<br>Typical Detention Pond          | 4-6                | Correct Figure reference.   | At Section A-A reference to Figure 3.10 should be Figure 4.2   |
| V   | 5.1 Biofiltration BMPs                        | 5-1                | Delete reference to BMP BF.06 Compost Amended Vegetated Filter Strip, this BMP was included in BF.04 Basic Filter Strip   | Delete bullet referencing BF.06 Compost Amended Vegetated Filter Strip.  |
| V   | 5.1.2 BF.02<br>Wet Biofiltration Swale        | 5-21               | Correct criterion based on Ecology SWMMWW errata.   | Under section “ <b>Design Criteria</b> ” sub-section “ <b>Geometry</b> ” amend <i>Criterion 1</i> to read: “The bottom width may be increased to 25 feet maximum, but a <u>minimum</u> length-to-width ration of 5:1 must be provided. No longitudinal dividing berm is needed. <i>Note: The minimum swale length is still 100 feet.</i> ”   |
| V   | 6.1.1 WP.01<br>Stormwater Treatment Wetlands  | 6-7                | Correct table reference.  | Under section “ <b>Sizing Procedure</b> ” step 6 reference to Table 9.1 should be Table 6.2.   |

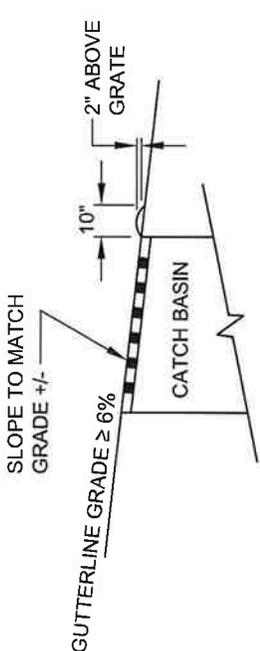
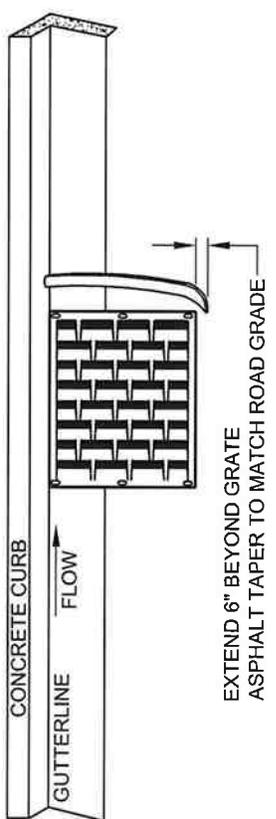
| VOL | SECTION   | PAGE NO. | DESCRIPTION & REASON FOR CHANGE  | CORRECTED TEXT (UNDERLINED = NEW TEXT, STRIKEOUT = DELETED TEXT)   |
|-----|---|----------|--|--|
| V   | 6.1.1 WP.01<br>Stormwater Treatment<br>Wetlands       | 6-8      | Clarify Berm design criteria. Due to re-organization of this section the reference to Criterion 8 is not applicable.   | Under section “ <b>Berm</b> ” amend the last sentence of the first paragraph to read: “Alternatively, the second cell may be graded naturalistically from the top of the dividing berm (see <u>previous section - “naturalistic” alternative</u> <del>Criterion 8</del> below). <u>In either case the berm design shall meet the requirements of this section.</u> ” |
| V   | 6.1.2 WP.02<br>Wet Ponds                              | 6-17     | In Step 3 of design procedure delete reference to steps (a) through (e) since steps aren’t labeled in this way.  | In section “ <b>Sizing Procedure</b> ” <u>Step 3</u> , Amend the last bullet to read as follows: “Adjust outlet pipe diameter as needed and repeat <u>Step 3</u> <del>steps (a) through (e)</del> .”   |
| V   | 6.1.3 WP.03<br>Wet Vaults                             | 6-27     | Minor corrections to “Figure 6.5 Wet Vault” required.  | Reference to “King County Road Standards” for specifications for man holes and ladders should be “WSDOT Standards”   |
| V   | 8.1.1 OW.01<br>API (Baffle Type)<br>Separator Bay     | 8-3      | Correct figure reference.  | In first paragraph on page 8-3 reference to Figure 5.1b should be Figure 5.1a. (5.1a is used to adjust flow rates for on-line flows).  |
| V   | 8.1.1 OW.01<br>API (Baffle Type)<br>Separator Bay     | 8-3      | Correct Step 1 in sizing process to indicate that the oil rise rate needs to be calculated in ft/min not cm/sec. Note – Ecology has amended the symbols and definitions used in this equation in their errata for the 2005 SWMMWW; however, the units and values are the same as used currently in the 2009 DDECM and produces the same result, therefore the revised symbols and definitions used by Ecology are not incorporated in this errata. | Under section “ <b>Sizing</b> ” amend the first paragraph of Step 1 to read as follows: “Step 1. Determine the oil rise rate, Vt, in <u>feet per minute</u> <del>centimeters per second</del> using Stokes’ Law (Water Pollution Control Federation, 1985) or empirical determination.   |
| V   | 8.1.2 OW.02<br>Coalescing Plate (CP)<br>Separator Bay | 8-8      | Correct figure references.   | In subsection <b>Hydrologic and Hydraulic Design Considerations</b> , second paragraph, reference to Figure 5.1a should be Figure 5.1b and reference to Figure 5.1b should be Figure 5.1a. (5.1a is for on-line flow rates and 5.1.b is for off-line flow rates).  |

| VOL | SECTION   | PAGE NO.  | DESCRIPTION & REASON FOR CHANGE  | CORRECTED TEXT (UNDERLINED = NEW TEXT, STRIKEOUT = DELETED TEXT)   |
|-----|---|-----------|--|--|
| V   | 8.2.2 OW.02<br>Coalescing Plate (CP)<br>Separator Bay | 8-8, 8-10 | Correct sizing formula and definitions consistent with Ecology 2005 SWMMWW errata.                                 | <p>Amend section “<b>Sizing</b>” to read as follows:</p> <p>“Calculate the projected (horizontal) surface area of plates needed using the following equation:<br/> <math display="block">A_p = Q/V_t = \frac{Q}{(0.00386) * ((S_w - S_o) / (\mu_w))} \cdot \frac{Q}{0.00386(\sigma_w - \sigma_o / \eta_w)}</math></p> $A_p = A_a(\cosine b)$ <p>Where:<br/> Q = k (the ratio appropriate for the project location) indicated by Figure 5.1b x the 15-minute <b>off-line</b> water quality design flow rate, ft<sup>3</sup>/min</p> <p>V<sub>t</sub> = Rise rate of <b>oil droplet</b> = 0.033 ft/min (<b>based on oil droplet of 60 microns</b>), or empirical determination, or Stokes Law based.<br/> A<sub>p</sub> = projected surface area of the plate in ft<sup>2</sup>; 0.00386 is unit conversion constant<br/> <u>S<sub>w</sub></u> = <b>specific gravity of water at the design temperature</b><br/> <u>S<sub>o</sub></u> = <b>specific gravity of oil at the design temperature</b><br/> <del>σ<sub>w</sub></del> = density of water at 32°F<br/> <del>σ<sub>o</sub></del> = density of water at 32°F<br/> A<sub>a</sub> = actual plate area in ft<sup>2</sup> (one side only)<br/> b = angle of plates with the horizontal in degrees (usually varies from 45-60 degrees).<br/> <u>μ<sub>w</sub></u> = <b>absolute viscosity of water (poise)</b><br/> <del>η<sub>w</sub></del> = viscosity of water at 32°F.</p> <p><b><u>The above equation is based on an oil droplet diameter of 60 microns.</u></b></p> |
| V   | Appendix V-A<br>Structures                            | A-5       | Formula for proportional or Sutro Weir Design is incorrect. This revision is from posted errata to Ecology SWMMWW. | Equation (8) is incorrect. The square root sign should only contain the “2ga” term. The term (h <sub>1</sub> -a/3) should be outside of the square root sign, ie. $Q = C_d b \sqrt{2ga} (h_1 - \frac{a}{3})$   |
| V   | Appendix V-A<br>Structures                            | A-20      | Correct table reference.   | Reference to Table 4.2.2 should be Table 3.7 of Volume III.  |
| V   | Appendix V-B<br>Facility Liners and<br>Geotextiles    | B-1       | Amend this appendix to include information on treatment liners, which was inadvertently omitted.                   | Add a new paragraph after first paragraph as follows: “ <b><u>Treatment liners amend the soil with materials that treat stormwater before it reaches more freely draining soils. They have slow rates of infiltration, generally less than 2.4 inches per hour (1.7 x10<sup>-3</sup> cm/s), but not as slow as low permeability liners. Treatment liners may be in-place native soils or imported soils.</u></b> ”   |

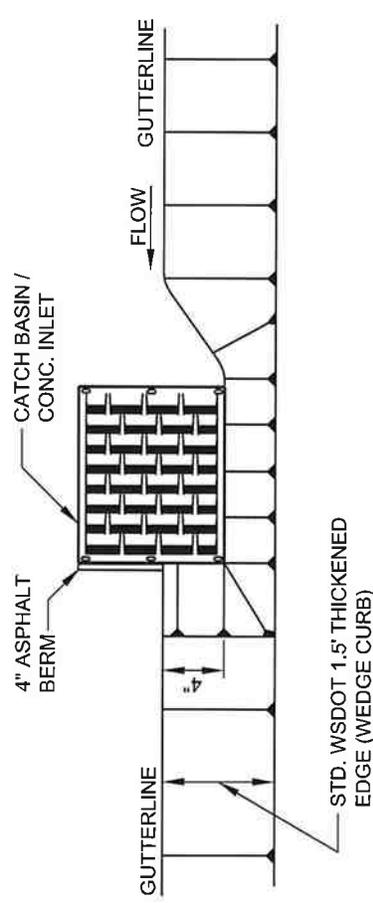
| VOL | SECTION  | PAGE NO. | DESCRIPTION & REASON FOR CHANGE  | CORRECTED TEXT (UNDERLINED = NEW TEXT, STRIKEOUT = DELETED TEXT)  |
|-----|--|----------|--|---|
| V   | Appendix V-B<br>Facility Liners and<br>Geotextiles | B-2      | Add new section describing design criteria for treatment liners.                                       | <p>Add new section immediately before section “<i>Low Permeability Liners</i>” to read as follows:<br/> <b>“<u>Treatment Liners</u>”</b><br/> <u>This section presents the design criteria for treatment liners.</u></p> <ul style="list-style-type: none"> <li>• <u>A two-foot thick layer of soil with a minimum organic content of 5% AND a minimum cation exchange capacity (CEC) of 5 milliequivalents/100 grams can be used as a treatment layer beneath a water quality or detention facility.</u></li> <li>• <u>To demonstrate that in-place soils meet the above criteria, one sample per 1,000 square feet of facility area shall be tested. Each sample shall be a composite of subsamples taken throughout the depth of the treatment layer (usually two to six feet below the expected facility invert).</u></li> <li>• <u>Typically, side wall seepage is not a concern if the seepage flows through the same stratum as the bottom of the treatment BMP. However, if the treatment soil is an engineered soil or has very low permeability, the potential to bypass the treatment soil through the side walls may be significant. In those cases, the treatment BMP side walls may be lined with at least 18 inches of treatment soil, as described above, to prevent untreated seepage. This lesser soil thickness is based on unsaturated flow as a result of alternating wet-dry periods.</u></li> <li>• <u>Organic content shall be measured on a dry weight basis using ASTM D2974.</u></li> <li>• <u>Cation exchange capacity (CEC) shall be tested using EPA laboratory method 9081.</u></li> <li>• <u>Certification by a soils testing laboratory that imported soil meets the organic content and CEC criteria above shall be provided to Thurston County for acceptance.</u></li> <li>• <u>Animal manures used in treatment soil layers must be sterilized because of potential for bacterial contamination of the groundwater.</u></li> <li>• <u>If a treatment liner will be below the seasonal high water level, the pollutant removal performance of the liner must be evaluated by a geotechnical or groundwater specialist and found to be as protective as if the liner were above the level of the groundwater.</u></li> </ul> |
| V   | Appendix V-B<br>Facility Liners and<br>Geotextiles | B-5, B-6 | Correct table references.  | In Section “ <b>Geotextiles</b> ” subsection “ <b>Applications</b> ” references to Tables 1, 2 and 3 should be Tables B-3, B-4 and B-5, respectively.   |
| V   | V-C<br>Maintenance Guidelines                      | C-18     | Correct BMP reference in Maintenance Table C-8.  | In Table C-8, Title reference to BMP BF.06 for Compost-Amended Vegetated Filter Strip should be BMP BF.04.  |
| V   | V-C<br>Maintenance Guidelines                      | C-19     | In Table C-8 correct reference to noxious weeds list. States Pierce County, should be Thurston County. | Under problem area “Noxious weeds” change reference to “Pierce County noxious weed list” to “Thurston County noxious weed list”   |

| VOL | SECTION                     | PAGE NO. | DESCRIPTION & REASON FOR CHANGE  | CORRECTED TEXT (UNDERLINED = NEW TEXT, STRIKEOUT = DELETED TEXT)  |
|-----|-----------------------------|----------|--|---|
| V   | V-E<br>Site Design Elements | E-5      | Clarify that setbacks are horizontal unless otherwise specified and that modifications for septic/wells are allowed if approved by Environmental Health.   | Modify introductory paragraph immediately before section “ <b>Horizontal Clearances</b> ” to read as follows: “All infiltration facilities shall maintain minimum setback distances as follows. <u>All setbacks shall be horizontal unless otherwise specified or modified with written approval of the Thurston County Environmental Health Division for wells and septic systems:</u>   |
| V   | V-E<br>Site Design Elements | E-6, E-7 | Amend required setbacks for infiltration facilities associated with single family residential construction. Setbacks of this section are more restrictive than necessary for small infiltration facilities associated with single family residential construction. The proposed setbacks were agreed to by the working group during development of the 2009 DDECM but were inadvertently not incorporated. | <p>Under “<b>Horizontal Clearances</b>” in section “<b>Setbacks and Easements</b>” sub-section “<i>Infiltration Facilities</i>” make the following revisions:</p> <ul style="list-style-type: none"> <li>• “50 feet – from septic tank, holding tank, containment vessel, pump chamber, and distribution box. <u>May be reduced to 30 feet for infiltration facilities serving a single family residence.</u></li> <li>• 100 feet – from edge of septic drainfield and drainfield reserve area. <u>Infiltration facility shall be located downgradient unless site topography clearly prohibits subsurface flow from intersecting drainfield. May be reduced to 30 feet for infiltration facilities serving a single family residence.</u></li> <li>• 100 feet – From drinking water wells and springs used for drinking water supplies. <u>May be reduced to 30-feet for downspout infiltration facilities serving a single family residence. In wellhead areas, for the siting of “high risk” activities as defined through implementation of the Northern Thurston County Groundwater Management Plan, recommendation HM-14, pp. 5-88, 5-97, and 5-98, the Administrator may require the proponent to supply hydrogeologic analysis and to calculate acceptable separation distances between the activity and the well. Higher setbacks may be required if the well serves a public water system and/or Washington State Department of Health requirements apply for locations within the 1, 5, or 10 year time of travel.</u></li> <li>• “100 feet – from building foundation or basement, where infiltration facilities are located upgradient from building. The Project Engineer shall perform calculations to ensure that the line of saturation, measured from the design storm elevation in the facility, at a gradient acceptable to the Administrator or designee, falls a minimum of 1 foot below the lowest floor elevation. Setbacks shall be increased as necessary to allow for saturation effects. <u>May be reduced to 50-feet for infiltration facilities serving a single family residence.</u></li> <li>• “20 feet – from building foundation or basement, where infiltration facilities are located downgradient from building. The Project Engineer shall perform calculations to ensure that the line of saturation, measured from the design storm elevation in the facility, at a gradient acceptable to the Administrator or designee, falls a minimum of 1 foot below the lowest floor elevation. Setbacks shall be increased as necessary to allow for saturation effects. <u>May be reduced to 10-feet for infiltration facilities serving a single family residence.</u></li> </ul> |

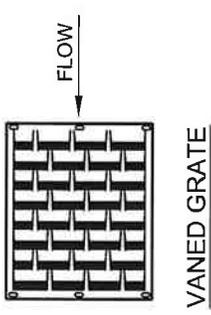




CONCRETE CURB CATCH BASIN INLET DETAIL



ALPHALT CURB CATCH BASIN INLET DETAIL



NOTE:  
VANED GRATES SHALL BE PROVIDED FOR ALL CATCH BASINS WHEN PROFILE GRADE EQUALS OR EXCEEDS 6%.

| DATE   | REVISION     | APPR'D | DRAWN    |
|--------|--------------|--------|----------|
| 6/2008 | PUBLISH DATE | HPH    | RUTKOSKY |
|        |              |        |          |
|        |              |        |          |
|        |              |        |          |
|        |              |        |          |
|        |              |        |          |

**Pierce County**  
Department of Public Works and Utilities  
Water Programs Division  
9850 64th Street West  
University Place, Washington 98467-1078

**HANS P. HUNGER, P.E.**  
C.I.P. MANAGER

Water Programs Division

**GRATE DETAIL FOR STEEP SLOPES**

(NOT TO SCALE)

10.0