



CLEAN WATER COMMISSION

For the Department of Public Works

STAFF REPORT

TOPIC: Clark County Stormwater Manual 2015 – Errata #1 Update

DATE: 8.29.16

STAFF NAME: Rod Swanson, Jane Tesner Kleiner

EXECUTIVE SUMMARY

Per the requirements of Clark County's Phase I Municipal Stormwater Permit of the National Pollution Discharge Elimination System (NPDES) program, the county adopted a stormwater manual equivalent to the state's *2014 Stormwater Management Manual for Western Washington*. After manual adoption, a number of typographical and formatting errors were discovered. Along with fixing scrivener's errors, several content changes are made to clarify manual language, restore omitted language from the previous manual requirements, and maintain equivalence to the state manual.

BACKGROUND

The *Clark County Stormwater Manual 2015* was adopted in November 2015 and became effective on January 8, 2016 after a three year update process. The Department of Ecology has approved the manual as being equivalent to the state manual. Clean Water staff has been meeting monthly with internal stakeholders regarding the implementation of the new manual. These stakeholders work with our customers in the building and development communities to apply the new regulations. Through these discussions we have identified errors, omissions and text needing clarification.

ERRATA SUMMARY

Refer to the attached summary document for a detailed listed of all proposed changes. Many are updated references to links for more information, grammatical errors, typographical errors, omissions (items in the state manual that needed to be added) and areas requiring more clarification. There are no changes proposed to make this manual stricter than the state manual.

SUMMARY / RECOMMENDATION

No action is required by the Clean Water Commission. This update is for your information and awareness. The Errata update process is required to go to the Planning Commission for a worksession (October 6) and public hearing (October 20). The project is then scheduled to go to the BOCC on November 22 for a public hearing and approval of the errata (to become effective 10 days after adoption of the ordinance). All documents will be posted on associated websites for review and comment before each meeting.

ACTION REQUESTED:

None – Informational purposes

ATTACHMENT(S):

1. Clark County Stormwater Manual 2015 Errata September 2016 – Summary sheet





Clark County Stormwater Manual 2015 Errata Sheet #1 September 2016

Below is a summary of changes required to the *Clark County Stormwater Manual 2015* adopted on November 24, 2015 (effective January 8, 2016). These changes have been adopted by Board of County Councilors at a public hearing in November ____, 2016.

No.	Book	Section	Page	Change
1	All		All	Add Errata date stamp with <u>Errata #1 September 2016</u>
2	All		throughout	Update references to web links from “.../environmental-services/.....” to “.../public-works/....”
3	1	1.2.3	10	Line 2 – Update reference “Chapter 7 of this book ” to “Chapter 7 of <u>Book 2</u> ”
4	1	1.5.4	24	Line 9 – Update reference “Section 7.6” to “Section 7.7”
5	1	1.5.5	24	Line 14 – Update reference “Section 1.5.7.1” to “Section <u>1.5.7</u> ”
6	1	1.6.1	36	Line 18 – Update reference “ Book 2, Chapter 9 ” to “referenced in <u>Book 2 Introduction</u> ”
7	1	1.6.3	42	Line 4 – Add “ <u>No new development, redevelopment, or drainage project shall be allowed to materially increase or concentrate stormwater runoff onto an adjacent property or block existing drainage from adjacent lots.</u> ”
8	1	1.6.4.1	42	Line 9 – Update reference “Section 7.6” to “Section 7.7”
9	1	1.6.6	43	Line 10 – Add “ <u>All private stormwater facilities that are gated and locked are required to have a double locking system for inspection purposes. It is preferred to use a chain with a county lock and the private lock.</u> ”
10	1	1.8.2	53	Line 20 (second paragraph) – Replace the word “Preliminary” with “Final”
11	1	1.8.2.3	58	Line 8 – Remove the word “Chapter” from “CCC Chapter 40.386”
12	1	1.8.2.3	60-61	Bullet list numbers 7-13 should be updated and renumbered to include the appropriate subordinate list for analysis (a.-d.)
13	1	1.8.2.3	62	Lines 18-23 - Remove the word “Chapter” from “CCC Chapter 40.”
14	1	1.8.2.3	63	Update sections titles to eliminate duplicate Sections D.3 (update to <u>D.4</u> and <u>D.5</u>)

No.	Book	Section	Page	Change
15	1	TOC	77	Update references under 2.3 to create the correct subordinate sequence
16	1	2.2	80	Line 22 – Change the first word of the bullet from “ Meeting ” to “Meet”
17	1	Table 2.3	84	Heading of table 2.3, remove “ subject to Minimum Requirement #1 – #9 ”
18	1	2.3.X	85-89	Subheadings – Change “2.3.1.X” to the next higher level of headings “2.3.X” under Section 2.3
19	1	2.5.5	105	Line 17 – Add “ <u>BMP T5.15</u> ” to heading
20	1	3.2.3.6	129	Update reference to <i>Combined Detention and Wetpool Facilities</i> should be to <u>BMP D6.40</u> instead of T10.40 .
21	1	3.4.5.2	138	Update references from T10.40 to <u>D6.40</u> .
22	1	3.4.5.3	139	Update reference from T10.40 to <u>D6.40</u>
23	1	4.3.2.1	151	Line 13 – Correct the requirement from “ or ” to “and”.
24	1	6.3.4.1	174	Line 28 – Update reference for precipitation data from Ecology’s SWMMWW “ Volume III ” to “ <u>Book 2 Appendix 2-A</u> ”
25	1	6.4.9	183	Line 16 – Update reference from Book 4 to <u>Book 3</u>
26	1	Append. C	C-5	Line 1 – Update equation to bracket the first half of the formula
27	1	Append. E	E-1	Line 6 – add <u>reference to Book 1</u>
28	1	Append. E	E-1	Section 1 – update 3.1 to <u>2.1</u>
29	1	Append. E	E-1	Section 1 – update 3.2 to <u>2.2</u>
30	1	Append. E	E-1	Section 1 – update 3.3 to <u>2.3</u>
31	1	Append. H	H-1	Update Guide Sheet 1, last paragraph to reference <u>Figure 1.4</u> instead of <u>Figure 1.5</u>
32	1	Append. H	H-5	In the Minimum Requirement 8 Checklist, Item B., update the reference from Appendix 1- K to Appendix 1- <u>H</u>
33	1	Append. H	H-5	Add the following question to the Checklist: “ <u>Does the wetland provide habitat for threatened or endangered species? If yes complete the checklist below. If No Stop.</u> ” Update the question bullets to change existing D to <u>E</u> and existing E to <u>F</u> .
34	1	Append. I	I-8	Lines 15 & 18 – Update groundwater assessment to “groundwater <u>depth</u> assessment”

No.	Book	Section	Page	Change
35	1	Append. I	I-8	Lines 15 & 16 – add “, <u>downspout full infiltration or rain garden</u> ” after the word pavement.
36	1	Append. I	I-11	Lines 15 & 16 – add to requirement: “ <u>No new development, redevelopment, or drainage project shall be allowed to materially increase or concentrate stormwater runoff onto an adjacent property or block existing drainage from adjacent lots.</u> ”
37	1	Append. I	I-14	Eliminate Box 1.; change box 2. To <u>1.</u> ; change box 3. to <u>2.</u> ; change box 4. to <u>3.</u> ; second orange box – Eliminate text “ OR (optional) go to next question ” as well as the dotted line to the No line; change box 5. to <u>4</u> and eliminate “ and 2. ”; change box 6. to <u>5.</u> ; change box 7. to <u>6.</u> ; and, change box 8. to box <u>7.</u>
38	1	Append. I	I-15	Eliminate Box 1 and update formatting (65% of site set aside as native vegetation?)
39	1	Append. I	I-32	Fix formatting - Under the applicant line, eliminate the second line
40	1	Append. I	I-66	Fix formatting – eliminate the underline for “Users may reference the handbook”
41	1	Append. I	I-66	Replace bullets with numbers for <u>1-7</u>
42	1	Append. I	I-74	Lines 33 & 34 – Eliminate references to Section 2.5.5.3 in Book 2 and Table 2.3. Replace with “ <u>...infeasibility criteria below.</u> ”
43	2	1.3.1.1	8	Line 10 – Change reference from 1.5. 2.2 to 1.5. <u>5.2</u>
44	2	BMP T5.10A	22	Line 19 – Change spelling of “ <u>course sands</u> ” to “ <u>coarse sands</u> ”
45	2	BMP T5.10D	33	Line 8 – Add the following to the limitations section: “ <u>Perforated stub outs do not provide pretreatment. Perforated stub outs are not allowed to drain into a subsurface detention or retention facility without first connecting to a pretreatment BMP under Minimum Requirement #6.</u> ”
46	2	BMP T5.11	37	Line 27 – update reference to include punctuation: BMP T5. <u>10C</u>
47	2	BMP T5.13	43	Lines 13 & 14 – Update outdated reference from BMP 7.30 to <u>BMP 5.14B</u> ; also eliminate an extra space after the closing parentheses.
48	2	BMP T5.14B	66 & 68	Line 8 – Update BMS to <u>BSM</u> Lines 18-23 – remove existing bullet information [“ if the standard soil mix is used:..... ”] and replace with “ <u>Option 1: If using the Bioretention Soil Mix recommended herein, the WWHM assumes a default</u> ”

No.	Book	Section	Page	Change
				<p><u>infiltration rate of 12 inches per hour (15.24 cm/hr)."</u> Lines 24-33 – remove existing bullet information ["If a custom soil mix is used...."] and replace with <u>"Option 2: If creating a custom bioretention soil mix, Use ASTM D 2434 Standard Test Method for Permeability of granular Soils (Constant Head) with a compaction rate of 85 percent using ASTM D1557 Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort. The WWHM user must enter the derived value into WWHM using "View/Edit Soil Types" pull down menu and adjusting the Ksat value. After selecting option 1 or 2 above, determine the appropriate safety factor for the saturated hydraulic conductivity (Ksat). If the contributing area of the bioretention cell or swale is equal to or exceeds any of the following limitations: 5,000 square feet of pollution-generating impervious surface; 10,000 square feet of impervious surface; ¾ acre of lawn and landscape, use 4 as the infiltration rate (Ksat) safety factor. If the contributing area is less than all of the above areas, or if the design includes a pretreatment device for solids removal, use 2 as the Ksat safety factor. The WWHM has a field for entering the appropriate safety factor."</u></p>
49	2	BMP T5.15	77	<p>Line 11 – Update reference for 2.5.3 Book 2 to Book <u>1</u>. Line 13 – Replace bullet text "No run-on from pervious surfaces is allowed." with <u>"Run-on from pervious surfaces is not allowed, except from minor or incidental pervious areas that cannot be directed elsewhere. Those areas must be fully stabilized before discharging runoff to the pervious pavement."</u></p>
50	2	BMP T5.30A	100	<p>Line 10 – Update reference in cross-reference table to add <u>"Book 1"</u> to Section 2.5.3.</p>
51	2	BMP T5.30B	109	<p>Line 9 - Update reference in cross-reference table to add <u>"Book 1"</u> to Section 2.5.3.</p>
52	2	BMP T5.30B	110	<p>Line 22 – Update reference to include proper notation for <u>"BMP T5.30A"</u></p>
53	2	BMP T5.40	113	<p>Line 21 - Update reference to include proper notation for <u>"BMP T5.30A"</u></p>
54	2	BMP	114	<p>Line 8 – Update reference Figure from 9.11 to <u>1.14 in</u></p>

No.	Book	Section	Page	Change
		T5.40		<u>Book 1</u>
55	2	BMP T5.41	116	Line 1 – Add notation for the continuance of the cross reference table from the previous page.
56	2	BMP T8.10	165	Update Figure reference from Plan view to <u>Section</u> view.
57	2	BMP T8.30	172	Line 13 – Update reference for BMP 9.40 to <u>T9.40</u>
58	2	BMP T9.10	200	Line 13 – Update reference from BMP T7.30 to <u>5.14B</u>
59	2	BMP T7.40	215	Line 15 – Update reference from BMP T7.30 to <u>5.14B</u>
60	2	BMP 7.40	216	Line 2 - Update reference from BMP T7.30 to <u>5.14B</u>
61	2	BMP 10.10	221	Line 9 – Update referenced figures from 4.27 and 4.28 to <u>4.26 and 4.27</u>
62	2	5.1.1	250	After Line 6 – Add a new bullet: <u>“Reference BMP D6.10 and BMP 6.20 for landscape requirements at stormwater facilities.”</u>
63	2	5.1.1.3	251	Line 16 – Update the first sentence: <u>“A facility to treat Pretreatment of stormwater influent for suspended solids must precede the is required for each infiltration facility.”</u>
64	2		262	Add to blank page: <u>This page intentionally left blank</u>
65	2	BMP D.610	282	After line 4 – Add bullet: <u>“10. Ensure that mature width of plants are taken into consideration near access roads, pedestrian walkways or manmade structures. To reduce safety and maintenance liabilities, mature plant width should not overhang or encroach into these features.”</u>
66	2	BMP D6.20	288	After line 6 – Add new section: <u>“Landscaping 1. Refer to BMP D6.10 for landscape requirements, as well as statements listed below. 2. Plantings directly above the detention tank system shall include only shallow rooted herbaceous perennials, low growing shrubs or grasses. Trees and shrubs should be avoided to minimize risk of roots impeding storage volume and capacity, as well as structural integrity of the system. Plantings should not include varieties that are water seeking such as sedges or rushes. 3. Avoid any plantings around the perimeter of detention tank that will cause root encroachment into the tank storage area. Large trees should be</u>

No.	Book	Section	Page	Change
				<u>planted a minimum of 10' from edge of detention tank storage area."</u>
67	2	BMP D6.40	300	Line 13, second bullet – Update reference from 6.1.7 to 6.1.4
68	2	7.2	303	Add last bullet: <u>No new development, redevelopment, or drainage project shall be allowed to materially increase or concentrate stormwater runoff onto an adjacent property or block existing drainage from adjacent lots.</u>
69	2	BMP C209	400	Line 15 – Update reference from Section 7.6 to 7.7
70	2	Appendix C	C-4	Line 16 – Update reference from “BMP T5.10B of Volume III – Chapter 3 ” to “BMP T5.10C of <u>Book 2</u> ”
71	2	Appendix C	C-4	Lines 34 & 36 – Update reference for BMPs in the last bullet from “ Book 1 ” to “ <u>Book 2</u> ”
72	2	Appendix C	C-13	Lines 26 & 27 – Update reference “explained in Book 1, Section 2.2.1.3 ” and “Book 1, Section 4.3.1.3 ” to “Book 1, Section <u>2.3.1.4</u> ”
73	2	Appendix C	C-14	Line 7 – Update reference from BMP T5.10B to <u>C</u>
74	2	Appendix C	C-15	Lines 9 & 13 – Add a period at the end of the sentences.
75	2	Appendix D	D-1	Line 6 – Update reference from “See Appendix 1- D ” to “See Appendix 1- <u>C</u> ”
76	2	Appendix D	D-1	Line 20 – Update reference for Site Characterization Study from “Section 4.4” to “ <u>Book 1, Section 4.3.1.2</u> ”
77	2	Appendix D	D-1	Line 25 – Add “ <u>Book 1,</u> ” to reference of Section 4.4, Table 4.1
78	2	Appendix D	D-1	Line 26 – Update reference for CARA sites from “Section 4.2.2 ” to “Section <u>4.3.1.1</u> ”
79	2	Appendix D	D-2	Line 24 – Update reference for coefficient of permeability from “Section 4.5.2 ” to “Section <u>4.3.1.3</u> ”
80	2	Appendix D	D-2	Line 25 – Update reference for correction factors from “Section 4.5.4 ” to “Section <u>4.3.1.3</u> ”
81	3	2.1.3	9	Figure 2.1 - Picture caption – Left justify Source information and update to correct reference “Source: <u>Fresh Look Mobil Power Wash</u> ”
82	3	2.1.3	10	Line 32 – Update reference to metal medallion from “Book 2 , Figure 9.1 ” to “Book <u>1</u> , Figure <u>1.5</u> ”
83	3	2.1.4	11	Figure 2.2 – Update photo source to correct source:

No.	Book	Section	Page	Change
				"Source: <u>Brady Worldwide</u> "
84	3	S412	47	Line 28 – Update references from "Figures 2.6 and 2.6" to "Figures <u>2.7</u> and <u>2.8</u> "
85	3		52	Eliminate duplicate statement: " This page intentionally left blank. "
86	3	S419	63	Line 29 – Update statement ".....or covering the storm..."
87	3	S426	79	Figure 2.11 – Update photo source to correct source: "Source: <u>Brady Worldwide</u> "
88	3	Appendix 3-A	A-17	Line 15 – <u>Insert tab</u> to properly align "Commercial Car and Truck Washes"
89	3	Appendix 3-E	E-1	Second to last line – Update reference from "Table 6.6 " to "Table <u>E.6</u> "
90	4		6	Line 10 – Update "Biofiltration wale" to "Biofiltration <u>swale</u> "
91	4	Detention Pond	44	Lines 23 and 24 – Update the word " Tree " to " <u>Vegetation</u> " to clarify that all vegetation should be inspected to minimize impact to inspection access
92	4	Closed Detention System	73	After Line 44, add a new row in the table: " <u>Vegetation Encroachment - Root encroachment of tree or shrub have impacted function or integrity of wetvault. - Roots are found in vault to be removed and repair vault.</u> "
93	4	Wet Vault	77	After Line 31, add a new row in the table: " <u>Vegetation Encroachment - Root encroachment of tree or shrub have impacted function or integrity of wetvault. - Roots are found in vault to be removed and repair vault.</u> "
94	4	Modular Detention Systems	79	After Line 41, add a new row in the table: " <u>Vegetation Encroachment - Root encroachment of tree or shrub have impacted function or integrity of wetvault. - Roots are found in vault to be removed and repair vault.</u> "
<i>End of summary</i>				