

City of Bend Stormwater Master Plan - Public Comments

Date:	April 2, 2014	Project Name:	Stormwater Master Plan	
Affiliation:	City of Bend	Submittal:	Public Comments on December 2008 Draft	
Reviewers:	Alissa Maxwell, Erik Huffman, Chris Henningsen, Central Oregon Irrigation District			Page 1 of 9

Item #	Page/ Paragraph	Reviewer	Comments	Type	Consultant Response
1	General	Alissa Maxwell (1/29/2009)	Concerned that costs are excessive.		City is reviewing other alternatives due to high costs.
2	General	Alissa Maxwell (1/29/2009)	Seems to require more infrastructure for pretreatment, etc., than DEQ will likely require in your UIC permit.		DEQ is re-visiting requirements for pretreatment and these requirements will be reflected in the City's WPCF permit. Note: The City decided to wait to finish the Master Plan until after the permit was issued. The City received the permit in May 2013 and the Master Plan being revised to be reflective of the regulatory clarity.
3	General	Alissa Maxwell (1/29/2009)	The stormwater drywell retrofit treatment cartridges would be worth looking at as a cost comparison. Assume replacement of cartridges every 2-3 years.		Costs were obtained from the manufacturer, however, the cartridges were cost prohibitive.
4	General	Alissa Maxwell (3/10/2009)	Has DEQ participated in the review of the Plan?		No formal review from DEQ has been requested, although a DEQ staff person actively participates on the City's Stormwater Quality Public Advisory Committee that has reviewed the plan, and staff were notified of public review opportunities. The City did meet with DEQ managers to discuss stormwater quality concerns related to the Master Plan and to obtain further DEQ direction on regulatory issues in November 2009. The results of that meeting have helped shape this revision.

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5	General	Alissa Maxwell (3/10/2009)	Concern about installing major pipelines throughout City;		Given the new regulator clarity, the revisions no longer recommend a citywide collection system. Costs for construction of a collection system will be included in the final plan for cost comparison with other alternatives.
6	General	Alissa Maxwell (3/10/2009)	Plan assumes all drywells need to be retrofitted or decommissioned.		The Stormwater Master Plan has been revised as a result of the UIC permit process. It is unlikely that all drywells will need to be retrofitted or decommissioned. Evaluation of other alternatives is now included, such as Low Impact Development, regional detention, retaining drywells with feasible. Regional facilities have been evaluated – cost of land is high and requirements for regional detention require multiple acres of land to construct.
7	General	Alissa Maxwell (3/10/2009)	City should initially conduct a risk assessment and then a groundwater vulnerability study and update drinking water protection areas.		The City completed a UIC risk assessment September 21, 2011, updated the drinking water wellhead protection areas in 2011 and the source water assessment in 2013.
8	Page 4-1	Alissa Maxwell (3/10/2009)	Page 4-1 - Treatment of private stormwater prior to discharge to drywells		The City requires private facilities to meet DEQ requirements and be registered with DEQ. Bend Code Title 16 (adopted January 2012) incorporates stormwater treatment

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					requirements including adoption of the Central Oregon Stormwater Manual (2010).
9	Section 6.2.1/6.2.2	Alissa Maxwell (3/10/2009)	Section 6.2.1/6.2.2 Does the City have stormwater runoff and water quality plans?		The City has separate Integrated Stormwater Management Plans focusing on stormwater quality requirements as well as a stormwater monitoring plan.
10	Figure 5.2	Alissa Maxwell (3/10/2009)	Figure 5.2 is misleading.		Figure title has been changed for clarification. The new title is 'General Surface Water Drainage Patterns'.
11	Section 6.3.4	Alissa Maxwell (3/10/2009)	Higher groundwater lenses are not the same layers as drinking water well layer		The text has been repaired.
12	Section 6.3.5	Alissa Maxwell (3/10/2009)	Sedimentation manholes or catch basins can also be used to retain spills		So noted and incorporated into Section 6.3.5.
13	Chapter 6	Alissa Maxwell (3/10/2009)	Chapter 6 includes a number of recommendations. Specific Questions about what is included in the costs: <ul style="list-style-type: none"> • Other alternatives considered? • Assessing stormwater impacts to the Deschutes River • Sediment traps upstream of Mirror Pond • Groundwater vulnerability study • Re-delineating DWPA areas • Hydrodynamic separators • Sediment manholes for drywells • Sediment traps for detention facilities 		The revised plan includes evaluation of alternatives such as regional systems, some piping on the west side and retaining drywells on the east side of the Deschutes River. Costs for assessing stormwater impacts to the Deschutes River are not included. Costs for installing sediment traps upstream of Mirror Pond are not included at this time. A groundwater vulnerability study has been completed (GSI, Pollutant Fate and Transport Model Results in Support of the City of Bend UIC WPCF Permit – Groundwater Protectiveness Demonstration and Proposed EDLs, 2011).

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					Re-delineating Drinking Water Protection Areas (DWPA) has been completed. Costs for hydrodynamic separators/trash removal have not been included. Sediment manholes are not included for drywells, sediment traps are expected in forebays to detention facilities.
14	Table 8.1	Alissa Maxwell (3/10/2009)	Table 8.1 shows a discrepancy in costs.		Repairs have been made to Table 8.1. Catch basin cleaning and other maintenance efforts are Class 5 master planning level only and will be refined upon implementation by the City.
15	Page 9-7	Alissa Maxwell (3/10/2009)	Page 9-7 – discrepancy in costs noted.		Costs have been revised and included in Chapter 10. Discrepancy in specific costs, now in the Appendices, has been repaired.
16	Table 8.2	Alissa Maxwell (3/10/2009)	Table 8-2 shows a discrepancy in administration costs.		Discrepancy has been clarified for administration costs.
17	Page 8-10	Alissa Maxwell (3/10/2009)	Public information costs need clarification		Public Education and information costs have been clarified.
18	Table 9.1	Alissa Maxwell (3/10/2009)	Table 9.1 – drywell life expectancy could be increased with maintenance		Note has been added on the potential of increasing life expectancy with additional maintenance.
19	Table 9.2	Alissa Maxwell (3/10/2009)	Questions re: Table 9.2; <ul style="list-style-type: none"> • Pros and cons needed for each alternative considered; • Maintenance costs need to be considered and added; 		Pros and Cons have been added to Table. Ongoing maintenance is not the concern for regional detention systems; the issue voiced by some maintenance departments is the need for different equipment and different

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			<ul style="list-style-type: none"> Smaller pipe can be used for regional detention systems; Cost comparison of alternatives would be useful. 		expertise to maintain vegetated systems. This may not be an issue for all jurisdictions. Positive note added regarding smaller pipe required for regional detention; smaller pipe are included in the collections system costs. A cost comparison between piped system and retaining drywells with pretreatment is included in the final draft master plan.
20	Table 10.9	Alissa Maxwell (3/10/2009)	There are no collection system piping costs in Table 10.9.		Costs for collection system piping is included in the final draft plan.
21	General	Alissa Maxwell (3/10/2009)	Include costs for groundwater vulnerability study and other water quality monitoring programs		Groundwater vulnerability study has been completed; stormwater quality monitoring costs are dependent on the City's WPCF permit requirements, and are calculated at \$151,000 (2014\$). A monitoring plan for UICs has been completed in 2012.
22	Page 10 - 12	Alissa Maxwell (3/10/2009)	Would regional detention eliminate the needs for piping?		Not entirely. Piping likely would be needed to direct stormwater to regional detention basins and would be dependent on the exact locations of the regional detention basins. Regional detention isn't feasible in all areas due to steep slopes and land availability. The new strategy approaches encompass regional detention and other measures for added flexibility.

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23	General	Alissa Maxwell (3/10/2009)	Conceptual Question: Would it be less expensive to create a combined/storm sewer system?		No. There is insufficient hydraulic capacity at the WWTP.
24	General	Erik Huffman (2/5/09)	Hopes that Bend can be at the forefront of innovative sustainable design. Hopefully, not filter inserts – too expensive.		The City of Bend hopes to implement Low Impact Development solutions, innovative on-site solutions, prior to other methods of stormwater treatment and conveyance.
25	General	Chris Henningsen	When is it expected to be implemented?		The City of Bend decided to wait until DEQ had completed their process to develop a Water Pollution Control Facility (WPCF) permit to regulate construction, operation and maintenance of drywells in the City. We would like to finalize the Master Plan in 2014 and begin formal implementation in FY2014-15.
26	General	Chris Henningsen	CoB currently only allows drywells in the ROW. Will that standard change?		The City already does allow other facilities than drywells in the ROW. Additionally, the City adopted Bend Code Title 16, a Stormwater Ordinance, in 2012 that includes significant requirements related to stormwater.
27	General	Chris Henningsen	When might we expect standards, design and otherwise, to change? When might we be seeing some of these plans implemented?		The City adopted Bend Code Title 16, a Stormwater Ordinance, in 2012 that includes significant requirements related to stormwater. Revisions to the Central Oregon Stormwater Manual (COSM), incorporating DEQ review comments among others, were

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					completed in August, 2010. The COSM have been adopted by reference in both Bend Code Title 16 and the City's Standards and Specifications.
28	Chapter 10	Chris Henningsen	Need to show economics of suggested strategies versus status quo.		A cost comparison of alternatives has been included. Acceptability of status quo was unknown until finalization of State Underground Injection Control (UIC or drywell) regulations.
29	Figure 5.2	Chris Henningsen	Figure 5.2 – Are those basic surface water drainage, groundwater drainage, or both? Fix title to describe.		Surface water drainage – figure title has been changed to 'General Surface Water Drainage Patterns'.
30	Figure 5.1	Chris Henningsen	Figure 5.1 – MB 37 doesn't seem to be complete – seems to be part of MP17. Was this a typo?		MB 37 is an isolated small sub-area that has been determined to be the highest priority for resolution due to safety risks, visibility, and frequency of flooding. A solution is being implemented for this area.
31	General	Central Oregon Irrigation District	<ul style="list-style-type: none"> • A memo titled: "Central Oregon Irrigation District, Comments for the City of Bend's Storm Water Master Plan", including two attachments, • ATTACHMENT 1: Applicable Statutory and Regulatory Definitions, • ATTACHMENT 2: Oregon Water Resources Congress, Perspectives on Managing Storm Water in District 		See responses below.

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			<p>Canals, November 29, 2007, An Attorney's Perspective, and</p> <ul style="list-style-type: none"> • ATTACHMENT 3: Figure 10.7 of the Master Plan indicating areas of concern. <p>The memo provides a history of stormwater matters that impact the District and regulatory and environmental issues. These concerns are echoed in the Attorney's Perspective in Attachment 2. The District requested two changes to the draft Stormwater Master Plan including:</p>		
32	General	Central Oregon Irrigation District	<p>Several crossings of District irrigation canals are necessary to build the system identified in the master plan. These crossings will be permitted by the District, however, the crossings will need to refrain from interfering with operations and maintenance of District facilities, meet District specifications and standards, and remain as perpendicular to the canals as possible. Crossing licenses will need to be obtained.</p>		The piped system alternative is no longer the preferred alternative in this area of the City and the route has been moved to an appendix.
33	Figure 10.7	Central Oregon Irrigation District	<p>There are two areas in Figure 10.7, Attachment 3, that include use of District easements. The District</p>		This route is one identified for new sanitary sewer pipe and was chosen to save costs by using the same easement as the sanitary

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			requests these projects be removed from the Capital Improvement Program.		sewer. The piped system alternative is no longer the preferred alternative in this area of the City and the route has been moved to an appendix.
34	General	Central Oregon Irrigation District	There are other irrigation districts that operate in the City of Bend and they need to be coordinated with to address their specifications and standards.		So noted. See also previous response.

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