Western Washington Phase II Municipal Stormwater Permit 2012 Annual Report

Permittee: City of Redmond, WA

Permit Number: WAE04-5538

CityofRedmond
WASHINGTON

I. Permittee Information

Permittee Name City of Redmond	**Permittee Coverage Number** WAE04-5538
Contact Name Peter Holte	**Phone Number** 425-556-2822
Mailing Address PO Box 97010	
City Redmond	**State** WA / **Zip + 4** 98073-9710
Email Adddress pholte@redmond.gov	

II. Regulated Small MS4 Location

Jurisdiction City of Redmond	***Entity Type: Check the box that applies***		
	County	**City/Town**	**Other**
		X	
Major Receiving Water(s) Sammamish River, Lake Sammamish, Bear Creek			

III. Relying on another Governmental Entity

If you are relying on another governmental entity to satisfy one or more of the permit obligations, list the entity and briefly describe the permit obligation(s) they are implementing on your behalf below. ***Attach a copy of your agreement with the other entity to provide additional detail.***

Name of Entity:	**Permit Obligation(s):**

IV. Certification

All annual reports must be signed and certified by the responsible official(s) of permittee or co-permittees. Please print and sign this page of the reporting form and mail it (with an original signature) to Ecology at the address noted below. An electronic signature will not suffice.

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that Qualified Personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for willful violations.

Name _____ Title _____ Date _____

Name _____ Title _____ Date _____

Name _____ Title _____ Date _____

Name _____ Title _____ Date _____

Name _____ Title _____ Date _____

VI. Status Report Covering Calendar Yr: **2012** **Jurisdiction Name:** **City of Redmond**

PLEASE indicate reporting year and your jurisdiction in Line 1, above.

PLEASE refer to the INSTRUCTIONS tab for assistance filling out this table.

NOTE: For clarification on how to answer questions, place cursor over cells with red flags.

NOTE: Please answer all questions.

PLEASE review your work for completeness and accuracy. Save this worksheet as you go!

Question		Y/N/ NA	#	Comments (50 word limit)	Name of Attachment & Page #, if applicable
1.	**Attached** annual written update of Permittee's Stormwater Management Program (SWMP), including applicable requirements under S5.A.2 and S9?	Y			Attachment A: City of Redmond Stormwater Management Program Plan (SWMP Plan)
2.	**Attached** a copy of any annexations, incorporations or boundary changes resulting in an increase or decrease in the Permittee's geographic area of permit coverage during the reporting period, and implications for the SWMP as per S9.E.3?	NA			
3.	Implemented an ongoing program for gathering, tracking, maintaining, and using information to evaluate SWMP development, implementation and permit compliance and to set priorities? (S5.A.3)	Y			
4.	Tracked costs or estimated costs of the development and implementation of the SWMP? (S5.A.3.a)	Y			

Question		Y/N/ NA	#	Comments (50 word limit)	Name of Attachment & Page #, if applicable
5.	SWMP includes an education program aimed at residents, businesses, industries, elected officials, policy makers, planning staff and other employees of the Permittee? (S5.C.1)	Y			
6.	Number of public education and outreach activities implemented:		4		
7.	Provided opportunities for the public to participate in the decision making processes involving the development, implementation and updates of the Permittee's SWMP? (S5.C.2.a)	Y			
8.	Implemented a process for public involvement and consideration of public comments on the SWMP? (S5.C.2.a)	Y			
9.	Made the most current version of the SWMP available to the public. (S5.C.2.b)	Y			
10.	Posted the SWMP and latest annual report on Permittee's website. (S5.C.2.b)	Y			
11.	NOTE website address in *Attachment* field:	y			
12.	Maintained a map of your MS4, including requirements listed in S5.C.3.a.i-iii?	Y			
13.	Map has been made available upon request? (S5.C.3.a.iv)	Y			
14.	Implemented an ordinance or other regulatory mechanism to effectively prohibit non-stormwater, illicit discharges into the Permittee's MS4? (S5.C.3.b)	Y			

Question		Y/N/ NA	#	Comments (50 word limit)	Name of Attachment & Page #, if applicable
15.	Implemented an ongoing program to detect and address non-stormwater illicit discharges, including spills, and illicit connections into the Permittee's MS4? (S5.C.3.c)	Y			
16.	Implemented field assessment activities, including visual inspection of priority outfalls identified during dry weather, and for the purposes of verifying outfall locations, identifying previously unknown outfalls, and detecting illicit discharges. (S5.C.3.c.ii)	Y			
17.	Conducted field assessments on at least one high priority water body? (S5.C.3.c.ii)	Y			
18.	Implemented procedures for characterizing the nature of, and potential public or environmental threat posed by, any illicit discharges found by or reported to the Permittee? (S5.C.3.c.iii)	Y			
19.	Implemented procedures for tracing the source of an illicit discharge; including visual inspections, and when necessary, opening manholes, using mobile cameras, collecting and analyzing water samples, and/or other detailed inspection procedures? (S5.C.3.c.iv)	Y			

Question		Y/N/ NA	#	Comments (50 word limit)	Name of Attachment & Page #, if applicable
20.	Implemented procedures for removing the source of the discharge, including notification of appropriate authorities; notification of the property owner; technical assistance for eliminating the discharge; follow-up inspections; and escalating enforcement and legal actions if the discharge is not eliminated? (S5.C.3.c.v.)	Y			
21.	Provided updated information to public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste? (S5.C.3.d)	Y			
22.	Distributed appropriate information to target audiences identified pursuant to S5.C.1? (S5.C.3.d.i)	Y	70		
23.	Publicized and maintained a hotline or other local telephone number for public reporting of spills and other illicit discharges? (S5.C.3.d.ii)	Y			
24.	Number of hotline calls received:		8		
25.	Number of follow-up actions taken in response to calls:		72		
26.	NOTE hotline number in *Comments* field	y			
27.	Number of illicit discharges identified (S5.C.3.e):		34		
28.	Number of inspections made for illicit connections (S5.C.3.e):		2		

Question		Y/N/ NA	#	Comments (50 word limit)	Name of Attachment & Page #, if applicable
29.	Municipal field staff responsible for identification, investigation, termination, cleanup, and reporting of illicit discharges, improper disposal and illicit connections are trained to conduct these activities? (S5.C.3.f.i)	Y			
30.	Implemented an ongoing training program on the identification of an illicit discharge/connection, and on the proper procedures for reporting and responding to the illicit discharge/connection for all municipal field staff, which, as part of their normal job responsibilities, might come into contact with or otherwise observe an illicit discharge or illicit connection to the storm sewer system? (S5.C.3.f.ii.)	Y			
31.	Applied stormwater runoff program to private and public development, including roads? (S5.C.4)	Y			
32.	Applied the Technical Thresholds in Appendix 1 to all sites 1 acre or greater, including projects less than one acre that are part of a larger common plan of the development or sale? *(* S5.C.4)	Y			
33.	Implemented a regulatory mechanism (such as an ordinance) necessary to address run-off from new development, redevelopment and construction site activities? (S5.C.4.a)	Y			

Question		Y/N/ NA	#	Comments (50 word limit)	Name of Attachment & Page #, if applicable
34.	Retained existing local requirements to apply stormwater controls at smaller sites or at lower thresholds than required pursuant to S5.C.4? (S5.A.4)	Y			
35.	Number of exceptions to the minimum requirements in Appendix 1 granted (S5.C.4.a.i and Appendix 1)?		0		
36.	Number of variances to the minimum requirements in Appendix 1 allowed (S5.C.4.a.i and Appendix 1)?		0		
37.	Implemented a permitting process to address runoff from new development, redevelopment and construction site activities with plan review, inspection, and enforcement capability? (S5.C.4.b)	Y			
38.	Reviewed **Stormwater Site Plans** for new development and redevelopment projects that disturb a land area 1 acre or greater, including projects less than one acre that are part of a larger common plan of development or sale? (S5.C.4.b.i)	Y			
39.	Number of site plans reviewed during the reporting period:		21		
40.	Inspected, prior to clearing and construction, all known development sites that have a high potential for sediment transport as determined through plan review based on definitions and requirements in Appendix 7 **Determining Construction Site Sediment Potential**? (S5.C.4.b.ii and v)	Y			

Question		Y/N/ NA	#	Comments (50 word limit)	Name of Attachment & Page #, if applicable
41.	Number of qualifying sites inspected prior to clearing and construction during the reporting period:		21		
42.	Inspected construction-phase stormwater controls at all known permitted development sites during construction to verify proper installation and maintenance of required erosion and sediment controls? (S5.C.4.b.iii and v)	Y			
43.	Number of sites inspected during the construction phase for the reporting period:		147		
44.	Based on inspections at new development and redevelopment construction projects, enforced requirements related to the proper installation and maintenance of erosion and sediment controls? (S5.C.4.b.iii and vi)	Y			
45.	Number of enforcement actions taken during the reporting period:		5		
46.	Inspected qualifying permitted development sites upon completion of construction and prior to final approval or occupancy to ensure proper installation of permanent stormwater controls such as stormwater facilities and structural BMPs? (S5.C.4.b.iv and v)	Y			
47.	Number of qualifying sites known during the reporting period:		147		
48.	Number of qualifying sites inspected during the reporting period:		147		

Question		Y/N/ NA	#	Comments (50 word limit)	Name of Attachment & Page #, if applicable
49.	Verified a maintenance plan is completed and responsibility for maintenance is assigned for qualifying permitted development sites (S5.C.4.b.iv)	Y			
50.	Enforced regulations to ensure proper installation of permanent stormwater controls? (S5.C.4.b.iv)	Y			
51.	Number of enforcement actions taken during the reporting period:		147		
52.	Implemented a long-term operation and maintenance (O&M) program for post-construction stormwater facilities permitted and constructed pursuant to S5.C.4.a. and b.? (S5.C.4.c)	Y			
53.	Annually inspected all post-construction stormwater controls, including structural BMPs, at new development and redevelopment projects permitted according to S5.C.4.b. (unless maintenance records justify a different frequency)? (S5.C.4.c.iii)	Y			
54.	If using reduced inspection frequency, **Attached** documentation as per S5.C.4.c.iii?	Y			
55.	Performed timely maintenance of post-construction stormwater facilities and BMPs as per S5.C.4.c.ii?	Y			
56.	**Attached** documentation of any maintenance delays. (S5.C.4.c.ii)	Y			

Question		Y/N/ NA	#	Comments (50 word limit)	Name of Attachment & Page #, if applicable
57.	Inspected all new stormwater treatment and flow control facilities owned or operated, including catch basins, for new residential developments that are a part of a larger common plan of development or sale, every 6 months during the period of heaviest house construction (i.e., 1 to 2 years following subdivision approval) to identify maintenance needs and enforce compliance with maintenance standards as needed? (S5.C.4.c.iv)	Y			
58.	Number of facilities inspected during the reporting period:		202		
59.	Implemented a procedure for keeping records of inspections and enforcement actions by staff, including inspection reports, warning letters, notices of violations, other enforcement records, maintenance inspections and maintenance activities? (S5.C.4.d)	Y			
60.	Provided copies of the **Notice of Intent for Construction Activity** and **Notice of Intent for Industrial Activity** to representatives of proposed new development and redevelopment? (S5.C.4.e)	Y			

Question		Y/N/ NA	#	Comments (50 word limit)	Name of Attachment & Page #, <u>if applicable</u>
61.	All staff responsible for implementing the program to control stormwater runoff from new development, redevelopment, and construction sites, including permitting, plan review, construction site inspections, and enforcement were trained to conduct these activities? (S5.C.4.f)	Y			
62.	Performed timely maintenance as per S5.C.5.a.ii?	N		See *Attachment A: Explanation of Maintenance Delays as Required per S5.C.5.a.ii,* which details the circumstances of delay, and provides the actions and schedule to address the identified maintenance needs.	
63.	**Attached** documentation of any maintenance delays. (S5.C.5.a.ii)	Y			*Attachment B: Explanation of Maintenance Delays as Required by S5.C.5.a.ii*
64.	Implemented a program designed to annually inspect and maintained all stormwater treatment and flow control facilities (other than catch basins)? (S5.C.5.b)	Y			
65.	Number of known facilities:		214		
66.	Number of facilities inspected during the reporting period:		214		
67.	If using reduced inspection frequency, **Attached** documentation as per S5.C.5.a.ii? (S5.C.5.b)	Y			*Attachment C: Justification for the Use of Reduced Inspections Frequency for Private Stormwater Flow Control and Treatment Structures*
68.	Conducted spot checks of stormwater facilities after major storms? (S5.C.5.c)	Y			
69.	Number of known facilities:		55		
70.	Number of facilities inspected during the reporting period:		55		

Question		Y/N/ NA	#	Comments (50 word limit)	Name of Attachment & Page #, if applicable
71.	Inspected 20% of municipally owned or operated catch basins at least once before the end of the Permit term? (S5.C.5.d and Permit Reference Table)	NA		Requirement not due at this time	
72.	Number of known catch basins:		10500		
73.	Number of inspections:		1508		
74.	Number of catch basins cleaned:		800		
75.	Implemented practices to reduce stormwater impacts associated with runoff from streets, parking lots, roads or highways owned or maintained by the Permittee, and road maintenance activities conducted by the Permittee? (S5.C.5.f)	Y			
76.	Implemented policies and procedures to reduce pollutants in discharges from all lands owned or maintained by the Permittee and subject to this Permit, including but not limited to: parks, open space, road right-of-way, maintenance yards, and stormwater treatment and flow control facilities? (S5.C.5.g)	Y			
77.	Implemented an operations and maintenance (O&M) training program that has the ultimate goal of preventing or reducing pollutant runoff from municipal operations? (S5.C.5.h.)	Y			

Question		Y/N/ NA	#	Comments (50 word limit)	Name of Attachment & Page #, if applicable
78.	Implemented a Stormwater Pollution Prevention Plan (SWPPP) for all heavy equipment maintenance or storage yards, and material storage facilities owned or operated by the Permittee in areas subject to this Permit that are not required to have coverage under the Industrial Stormwater General Permit? *(* S5.C.5.i)	Y			
79.	Complied with the specific requirements associated with approved TMDLs identified in Appendix 2? (S7.A and Permit Reference Table)	NA			
80.	**Attached** status report of TMDL implementation? (S7.A and Permit Reference Table)	NA			
81.	Where monitoring was required in Appendix 2, did you conduct the monitoring according to an approved Quality Assurance Project Plan? (S7.A and Permit Reference Table)	NA			
82.	Notified Ecology immediately in cases where the Permittee becomes aware of a discharge from the Permittees MS4 which may cause or contribute to an imminent threat to human health or the environment? (G3)	Y			
83.	Took appropriate action to correct or minimize discharges into or from the MS4 which could constitute a threat to human health, welfare, or the environment? (G3)	Y			

Question		Y/N/ NA	#	Comments (50 word limit)	Name of Attachment & Page #, if applicable
84.	**Attached** a summary of the status of implementation of any actions taken pursuant to S4.F and the status of any montioring, assessment, or evaluation efforts conducted during the reporting period? (S4.F.3.d)	NA			
85.	Notified Ecology of the failure to comply with any permit term or condition within 30 days of becoming aware of the non-compliance? (G20)	Y			

VII. Information Collection, BMP Evaluation, and Monitoring

Complete Part A for all annual reports.
NOTE: Please note in Row 1 of the table if you have no information to report.
NOTE: Please limit your entries to 255 characters per cell. You may include additional information in your Supplemental Documentation attachment and reference it below with the page number.

A. Information Collection

	Briefly describe any stormwater monitoring, studies, or type of information collected and analyzed during the reporting period. (S8.B.1)	Who/how to contact for additional information?
1.	Residential Stormwater Survey for N. King County--behaviors, attitudes, and knowledge	Peter Holte, 425-556-2822
2.	Pollutant Export from Bioretention Soil Mix: 185th Avenue Ne	Andy Rheaume, 425-556-2741
3.		
4.		
5.		
6.		

VII. Information Collection, BMP Evaluation, and Monitoring

Complete Part B for all annual reports.

B. SWMP Evaluation (S8.B & S9)

You are required to assess the appropriateness of the BMPs you have selected to implement your SWMP. This evaluation is necessary to evaluate whether the MEP standard set by the permit is protective of water quality in your receiving water bodies. This assessment may be entirely qualitative. Answer **NA** if you are not yet implementing BMPs for a component of the SWMP. (S8.B.2 and S9)

Question	Y/N/NA	Comments (50 word limit)
1. Are the BMPs selected and implemented for Public Outreach appropriate to minimize pollutants in the MS4 to the MEP?	Y	
2. Are the BMPs selected and implemented for Public Involvement appropriate to minimize pollutants in the MS4 to the MEP?	Y	
3. Are the BMPs selected and implemented for Illicit Discharge Detection and Elimination appropriate to minimize pollutants in the MS4 to the MEP?	Y	
4. Are the BMPs selected and implemented for Construction Stormwater Pollution Prevention appropriate to minimize pollutants in the MS4 to the MEP?	Y	
5. Are the BMPs selected and implemented for Post-Construction Runoff Management appropriate to minimize pollutants in the MS4 to the MEP?	Y	
6. Are the BMPs selected and implemented for Good Housekeeping for Municipal Operations appropriate to minimize pollutants in the MS4 to the MEP?	Y	

VII. Information Collection, BMP Evaluation, and Monitoring

Complete Part C for all annual reports.

C. Changes in BMPs or objectives (S8.B)

If any of the BMPs or objectives is being changed, list the old BMP and objective, the new BMP and objective, and a justification for the change below. (S8.B.2., and S9)

NOTE: You may choose to attach additional documentation justifying Changes in BMPs or objectives. Note such attachments in the *Justification for change* field.

	Old BMP	Old Objective	New BMP	New Objective	Justification for Change
1					
2					
3					
4					
5					
6					
7					

Attachment A:

City of Redmond

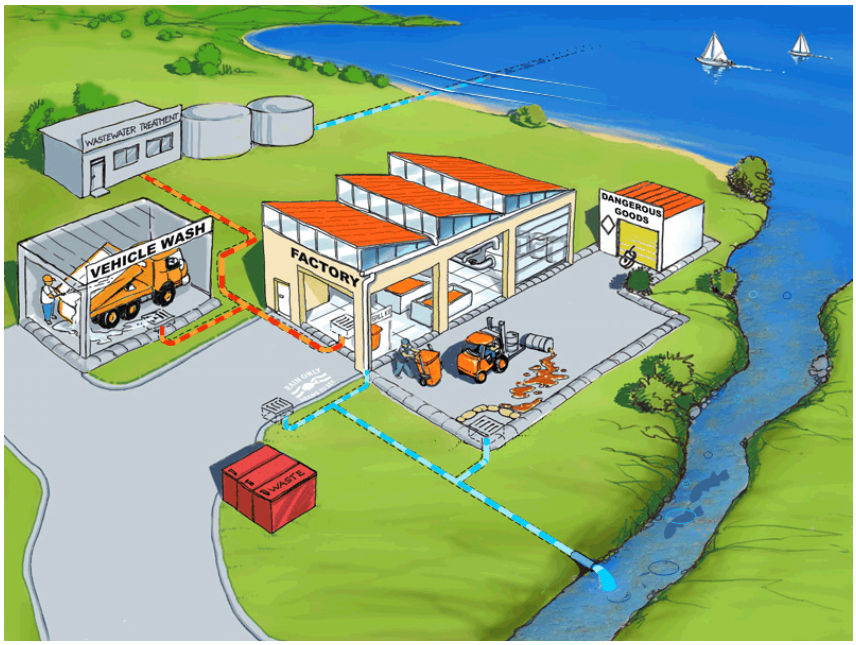
Stormwater Management Program Plan

March, 2013

The City of Redmond

Stormwater Management Program Plan

(SWMP Plan)



Prepared by Peter Holte
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Division of Natural Resources
15670 NE 85th St.
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March 15th, 2013

CityofRedmond
WASHINGTON

INTRODUCTION

General Information about this Document

This document is the City of Redmond's Stormwater Management Program (SWMP) Plan. It has been created to comply with requirements found in the Western Washington Phase II Municipal Stormwater Permit (NPDES Permit), which part of the Federal Clean Water Act. The NPDES Permit requires that the City of Redmond produce a Stormwater Management Program Plan (SWMP Plan), and update it regularly, to reflect Redmond's actions and planned actions in meeting permit requirements.

The first NPDES Permit was issued to the City of Redmond by the State of Washington, Department of Ecology in 2007 and revised in 2009. A new, one-year permit was issued to the City of Redmond on August 1, 2012. The 2012 re-issued permit extends the terms and conditions for the previously issued 2007 – 2012 NPDES Permit for a period spanning between August 1 2012, to July 31, 2013. A new, 5-year NPDES Permit will take effect on August 1, 2013. This new five-year permit will stay in effect until July 31, 2018. In accordance with the NPDES permit which will take effect on August 1, 2013, the next iteration of the SWMP Plan must be placed on the City website by May 31, 2014.

This document is organized according to the five NPDES Permit SWMP elements. Excluding this introduction section, the five elements are the sections of this SWMP: 1) Education and Outreach, 2) Public Involvement and Participation, 3)Illicit Discharge Detection and Elimination, 4) Controlling Runoff from Development and Redevelopment projects, and 5) Municipal Operations and Maintenance. Within each section, requirements of the permit are individually detailed (i.e. S5.C.3.b). To review the permit language in comparison to what Redmond has designed in response, one can access the permit at the following Washington Department of Ecology website:

http://www.ecy.wa.gov/programs/wq/stormwater/municipal/phaseIIww/wwphiipermit.html

The City's SWMP Plan aims to reduce the discharge of pollutants into receiving waters within Redmond to the maximum extent practicable (MEP), to apply all known and reasonable technologies (AKART) to address stormwater pollutants, and protect receiving waters from degradation. These goals will be accomplished by the implementation of all aspects of this SWMP Plan and through action taken by the City that are not required by NPDES and thus not detailed in this Plan. The City intentionally exceeds some NPDES Permit requirements to better protect water resources and to keep those resources safe for human contact and to sustain aquatic ecosystems/species.

PUBLIC EDUCATION AND OUTREACH

The City of Redmond's Natural Resources Division of Public Works has provided and participated in a variety of education and outreach efforts focused on environmental stewardship, including stormwater management. For decades, Redmond's outreach efforts have targeted residents, students, businesses, policy makers, elected officials, and city staff. Outreach efforts include natural yard care training, water conservation, targeted pollution reduction outreach materials, Redmond Focus articles, Redmond's RCTV commercials, and environmental awareness booths at various public functions. Redmond currently has one full time employee dedicated to developing and implementing NPDES permit public education and outreach efforts.

The City formalized a targeted Public Education and Outreach Program by February 16, 2009, as required by the permit. The Program is designed to achieve measurable improvements in the general public's understanding of stormwater problems and what the general public can do to reduce or resolve those problems.

S5.C.1.a Targeted Stormwater Outreach

The City provides targeted stormwater-related outreach programs to the public on numerous subjects including: Natural Yard Care, charity car washing, outreach to restaurants, and general stormwater awareness.

Since 2002, the City has offered free Natural Yard Care Programs to Redmond residents. These workshops provide home owners with information, tools, advice, and other resources that they can use to help reduce the amount pollution in stormwater runoff by incorporating integrated pest management, improving soils, and making better plant selections.

The City loans "Salmon Safe" car wash stormwater catch basin insert kits to charities and to businesses interested in holding or sponsoring car wash fundraising events within the City. For the last three years, the City has hired a consultant (Full Circle Environmental) to improve the effectiveness of this program. The consultant meets with the managers of businesses to make sure that the managers understand their responsibilities with regards to use of the kits and compliance with the City Stormwater Code (Redmond Municipal Code 13.06), and to make sure that the kits functioned properly. In 2010, the consultant also began meeting with, and distributing educational material to, the faculty advisors for sport teams and school clubs at Redmond Junior High and Redmond High School.

In 2012, the City piloted a Business Outreach program to Restaurants in the Redmond's Downtown Core. The City hired a consult to development materials and meet with over 70 businesses to promote best management practices related dumpster management, gray water disposal, and management of used cooking oil.

The City of Redmond coordinated with other permitted jurisdictions in Western Washington to create an outreach group called Stormwater Outreach for Regional Municipalities (STORM). This group works in conjunction with Washington State's Puget Sound Partnership and the Department of Ecology to run a regional stormwater awareness campaign, using the brand "Puget Sound Starts Here." The campaign has received multiple state and federal competitive grants. It consists of television ads, a website, earned media, and other outreach techniques. The

campaign has also engage non-profit groups throughout Western Washington to increase the campaigns scope. Redmond will continue to use this campaign in Redmond to increase the public's general awareness of stormwater issues.

S5.C.1.b Measuring Outreach Effectiveness

The Charity Carwash Program consultant conducts drive-through (windshield) monitoring in Redmond six weekends a year. They monitor sites that have sponsored charity car washes in the past and search for new locations where this activity may be taking place. In 2010, this monitoring occurred in May, June, September, and October. If the consultant discovers a charity event that does not have a kit, they supply a kit and offer education as to why and how car wash events can harm local waterways. If the consultant finds an event that is using a kit, they inspect the kit's set up to ensure that it is installed correctly and diverting water to the proper location. The consultant provides two reports to the City each year. These reports provide the City with information on program effectiveness and make recommendations as to how the program might be improved.

In 2006, the cities of Redmond, Bellevue, Kirkland, and Shoreline completed a marketing survey titled *Residential Surface Water Quality Survey for City's of Bellevue, Redmond, and Shoreline*. This survey provides a baseline for measuring Redmond's residential homeowners understanding of stormwater pollution and surface water impairments.

In 2012, Redmond participated in a regional survey that re-accessed the general understanding of residential homeowners concerning stormwater issues. This survey re-asked numerous questions first asked in 2006. As such, the 2012 survey provides an evaluation of activities designed to increase general awareness of stormwater related issues, and to prioritize further actions.

S5.C.1.c Tracking Outreach Efforts

Redmond will continue to track outreach efforts applied in Redmond by:
1) Documenting City's approach to outreach in *The City of Redmond Stewardship Program Strategic Plan.*
2) Maintaining a record of materials and programs that have created to convey stormwater outreach messages.
3) Detailing how materials have been distributed.

PUBLIC INVOLVEMENT AND PARTICIPATION

The City of Redmond is committed to ongoing opportunities for public involvement and participation in the development of this plan. This will be achieved through advisory councils, watershed committees, participation in developing rate-structures, stewardship programs, environmental activities or other similar activities.

S5.C.2.a and S5.C.2.b Involving the Public in the SWMP

The City of Redmond has requested public review of the City's Stormwater Management Plan (SWMP) through the City's internet landing page:

http://www.redmond.gov

When updates have been made, residents are invited to review and comment on the plan's content and the City's response to permit requirements. The City also provides a contact number for residents to call with questions throughout the year from the City's SWMP webpage:

http://www.redmond.gov/Environment/StormwaterUtility/NPDES/

In addition, Redmond has also held public discussions during council meetings, council study sessions, and Planning and Public Works Committee meetings to adopt local code and to discuss NPDES Phase II Permit requirements. Additional community interactions on receiving waters and environmental stewardship have occurred during neighborhood planning efforts. Although these were not specific to this plan, they have been excellent opportunities for staff to discuss surface water issues with the public.

ILLICIT DISCHARGE DETECTION AND ELIMINATION

The Illicit Discharge Detection and Elimination (IDDE) program is designed to prevent contamination of groundwater and surface water by monitoring, tracking, and removing non-stormwater discharges into the stormwater drainage system.

The City of Redmond initiated and funded an Illicit Discharge Detection and Elimination (IDDE) Program in January 2005, well before the program was required under the NPDES Permit. The City has implemented all actions required by the NPDES permit and developed and implemented procedures to characterize the nature of and respond to any known illicit discharges. Redmond's IDDE program is a citywide program that addresses non-stormwater discharges, including direct discharges to receiving waters, and discharges to non-city owned/operated stormwater conveyance.

S5.C.3.a Municipal Stormwater Drainage System Map

The City maintains an up-to date stormwater conveyance map in an enterprise geospatial database. Updating and managing geospatial data is done according to documented procedures and quality control standards. Global information system (GIS) data includes attributes that describe ownership, water quality facility design details, flow control facility design details, conveyance design information, and spatial data. GIS data is managed with ESRI software and database management system solutions. Both private and public stormwater system data is managed geospatially. The GIS stormwater data includes all nominal diameter pipes, not just 24 inch or larger. Land use and drainage area delineations for each outfall have been developed and are updated regularly.

S5.C.3.b Water Pollution Prevention Ordinance / Municipal Code 13.06

The City of Redmond updated Municipal Code 13.06 by the August 2009 permit deadline. The ordinance needed to:

- Define allowable discharges, conditional discharges, and prohibited discharges to the City's owned/operated stormwater conveyance system.
- Establish inspection authority and escalating enforcement authority to correct non stormwater discharges to the City's stormwater system.
- The prohibition of illicit connections to the stormwater conveyance system
- Provide definitions to make sure consistency existed between state and local terminology.

The City updated RMC 13.06 to include the required elements listed above and the following additional modifications to protect receiving water bodies:

- The scope of the code was increased to the continuous city limits. Non stormwater discharges to privately owned stormwater conveyance, or direct discharge to receiving waters are regulated by Redmond.
- The City can require structural and non-structural source control best management practices (BMPs) of existing land uses, if deemed necessary to reduce or eliminate non stormwater discharges, citywide.
- The City preserved its existing escalating enforcement strategy to address non stormwater discharges. The code also detailed that the City can collect city expenses incurred due to abatement of non stormwater materials in the stormwater drainage system.

- The City retained the ability to regulate NPDES permitted discharge within the City of Redmond. This includes construction sites and industrial sites permitted by the State of Washington.
- The City adopted the definitions and terms in the permit, and added additional prohibited and conditional discharges based on historical issues of non stormwater discharges.

S.5.C.3.c Ongoing IDDE Program

The City currently has an ongoing, fully funded, IDDE program. The City responds to and investigates, calls regarding environmental concerns such as illegal dumping, spills, illicit discharges, and illicit connections. The program has performed source tracing studies in the heaviest commercial and industrial portions of the City. The City will continue source tracing efforts as necessary in the future with the intent of shifting more focus to source control. Documentation of IDDE procedures are detailed in the City*'s Illicit Discharge Detection and Elimination (IDDE) Program Manual: City Policies and Procedures (2011).*

In 2012, the City selected Idylwood Creek as the priority waterbody for visual inspections. The City IDDE conducted visual inspections within the creek's drainage area, as required by the permit.

S.5.C.3.d IDDE Public Outreach

The City operates a telephone hotline that allows citizens to report illicit discharges or illicit dumping within city limits: (425)556-2868. The hotline is covered 24 hours a day, seven days a week. During regular business hours, calls are received and followed up on by the Natural Resources Division of Public Works. Off hour calls are managed by Redmond's police dispatch and standby maintenance crew. The call line has been publicized by the City's website, magnets distributed at community events, Redmond's television channel (RCTV), and most outreach materials created by the City typically include the hotline number. All calls are tracked and followed up on.

Additionally, targeted outreach materials have been developed and deployed to the public for restaurant related non stormwater discharges, car washing, and general awareness of stormwater and prohibited discharges.

S.5.C.3.e Program Evaluation and Assessment

The City currently tracks how many of each type of IDDE incidence that occurs and how those incidences are resolved. The IDDE Program has been regularly evaluated since 2005. This typically occurred with new staff in the IDDE Administrator position (3 staff since 2005). Redmond has and will continue to keep information provided by recipients of IDDE outreach materials.

S.5.C.3.f Municipal Field Staff IDDE Training

The City of Redmond has developed a field staff training plan to train all field staff in the identification and proper response to illicit discharges to the stormwater drainage system. The training program applies to all field staff, including but not limited to the following: Fire and Police Department staff that operate in the field, Public Works and Planning inspectors, and operations maintenance staff in Parks and Public Works.

The program is mandated/administered by the City of Redmond Human Resources Department as an employment requirement (similar to safe driver training). The training is required for new staff as well as existing staff. The training will be

refreshed for existing staff on a regular basis. The operations and maintenance staff are provided IDDE awareness training as a component of the operations and maintenance training discussed in section S.5.C.5 of this SWMP. The training is similar to the IDDE training provided to all other groups and administered in conjunction with the operations and maintenance training.

For all other field staff, the City of Redmond purchased *Municipal Stormwater Pollution Prevention-Storm Watch* from Excal Visual. Redmond has modified the video section pertaining to IDDE awareness and reporting. Modifications have been made to include the local spill hotline number and Redmond specific information. The video is administered to the various groups through existing training schedules and available online. Training participation is tracked for each employee through the Human Resources Department.

Training of staff that are responsible for identification, investigation, termination, cleanup, and reporting illicit discharges, including spills and illicit connections occurred in August 2009. The training was provided by King County. As staff responsible for such activities change, additional training will occur.

CONTROLING RUNOFF FROM NEW DEVELOPMENT, REDEVELOPMENT AND CONSTRUCTION SITES

How development and redevelopment occur plays a critical role in the ability of receiving waters to support beneficial uses. This section of the SWMP addresses: how impacts from development/redevelopment will be reduced, how impacts will be mitigated, and what is required of sites during construction. How Redmond is or plans to address specific NPDES permit requirements of development, redevelopment, and construction sites will be discussed.

S5.C.4.a Apply Stormwater Management Standards to Development, Redevelopment, and Construction Sites

Redmond Municipal Code (RMC) 15.24 codifies stormwater management in Redmond, and includes code for construction, and stormwater infrastructure design. RMC 15.24 was updated June 15, 2010, to include all minimum requirements and language required by this section of the permit and *Appendix 1*. Redmond has been using the *2005 Stormwater Management Manual for Western Washington* (*SWMMWW*) since 2007 and the 2001 version of the *SWMMWW* since 2004. Redmond has and continues to require minimum requirements of development/redevelopment below the one-acre threshold in *Appendix 1* of the permit. RMC 15.24 codifies by reference the *Clearing, Grading and Stormwater Management Technical Notebook* ("Technical Notebook"), which is the technical guidance and local modification of the *2005 Washington State Department of Ecology Stormwater Manual for Western Washington.*

S5.C.4.b Review and Inspect Development/Redevelopment Projects

The City has a permitting process with civil/site plan review and approval process, inspection, and enforcement to meet standards established by S5.C.4b. Civil/site plans shall be submitted for review prior to issuance of a permit for all private projects that meet any of the following thresholds:

- Move over 50 CY of soil; or
- Change the topography by more than four feet; or
- Perform work within a City of Redmond easement or right-of-way; or
- Work with a stormwater pipe 12-inches in diameter or greater; or
- Clear 7,000 SF of land; or
- Remove more than 10 trees; or
- Add 2,000 SF or more of impervious surface; or
- Work within a Critical Area or buffer as defined in the Community Development Guide; or
- Modify a private water quality or flow control stormwater facility.

These thresholds meet and in some cases exceed the required thresholds of the permit. All private projects triggering review provide plans in accordance with City's standards that clearly detail how the site meets all stormwater management requirements (including a post construction maintenance manual for projects that involve permanent quality and/or quantity control facilities). Plans are reviewed by licensed engineers or qualified engineering firms for compliance with Redmond's standards. Public projects do not typically trigger local permits; however, public

projects are subject to and abide by Redmond's development/redevelopment stormwater management standards.

Redmond's construction site inspection program is a well-known regional program that adheres to protocols that provide proper protection of stormwater drainage systems and local waterways from impacts that can occur during construction. This oversight occurs in three phases: prior to construction during a plan acceptance process and an on-site Best Management Practices (BMP) implementation inspection, during construction inspections, and during a post construction project acceptance inspection.

The City of Redmond has chosen to inspect all sites instead of using the Construction Site Sediment Damage Potential Worksheet (Appendix 7 of the permit) to determine if a plan acceptance inspection is needed. The City's stormwater engineers review projects that trigger Temporary Erosion and Sediment Control (TESC) Plans, wet weather plans, or stormwater pollution prevention plans (SWPPP). Once the City has accepted a plan to control erosion, runoff and other potential construction impacts, but prior to extensive clearing and construction, City staff inspects the TESC site to ensure that the proper control measure have been selected, properly placed, and installed correctly.

During construction, the City conducts frequent inspections at the worksite--typically more than once a week and after major rain events--to ensure proper implementation and maintenance of TESC Best Management Practices. Redmond inspectors have the authority to enforce Redmond Municipal Code (RMC) 13.06 and RMC 15.24, using corrective action notices and stop work orders, to insure the protection of receiving waters from construction impacts.

After construction, the City again inspects stormwater structures at a project site. If the maintenance thresholds have been triggered, the City requires that needed maintenance take place. If the maintenance thresholds have not been reached, or once maintenance has been completed, the City then accepts the project.

S5.C.4.c Post Construction Operation and Maintenance

The City has provisions to verify adequate long-term operation and maintenance (O&M) of post-construction stormwater facilities and BMPs. RMC 13.06 requires inspection and maintenance of private stormwater facilities, and all stormwater structures (including pipes and catch basins), in accordance or excess of requirements established by the NPDES Permit. RMC 13.06 also establishes enforcement authority and procedures.

Redmond has adopted and enforces maintenance standards equivalent to or more protective than those established in the 2005 Stormwater Management Manual for Western Washington (Volume V, Chapter 4).

The Natural Resources Division of Public Works has initiated, funded, and staffed a private stormwater maintenance inspection program since 1996. The program historically focused on commercial, multi-family, condo, and industrial properties, citywide. Currently, all sites having private stormwater drainage are inspected on a biannual basis. In excess of permit requirements, the city inspects all stormwater structures, excluding clean outs, roof drains, and small area/landscape drains. All maintenance work required by the City must be performed by qualified City-

approved contractors. As part of the inspection program, contractors are required to submit vactor waste tracking forms/disposal receipts to the City to insure proper disposal of collected material.

The City completes a more extensive inspection of facilities built to earlier standards (not required by the permit), and includes all parts of private drainage systems. Including all parts of the drainage system, such as catch basins, is thought to add better protection of the functionality of stormwater drainage flow control and runoff treatment facilities. This is also thought to lessen the maintenance expense for private stormwater drainage system owners. Inspection program records allow the City to track the approximate tonnage of material removed from private stormwater drainage systems. Records over the past twelve years have shown a significant decrease in materials removed from the private drainage systems as a result of the inspection program. This reduction in tonnage is evidence that the program is working to reduce the amount of materials in private stormwater drainage systems.

These records enable the City to justify a reduction in the inspection frequency of private stormwater facilities as allowed by S5.C.4.c.iii. Based on an analysis of these program records, the City inspects private stormwater treatment and flow facilities every other year on a rotating basis that splits drainages between even and odd numbered years.

As mentioned previously, all stormwater infrastructure, including runoff treatment and flow control facilities, are inspected post construction one year after acceptance, to release warranty bonds. Once this occurs, sites are added to the long term private system inspection program and typically get inspected within one year from the warranty bond release.

During heavy house construction, single-family home inspectors inspect the stormwater drainage system that can potentially be impacted by the home construction activity. This occurs every six months during heavy home construction. If facilities and stormwater conveyance require cleaning during home construction, responsible parties are required to perform maintenance/cleaning.

S5.C.4.d Records Management

The City keeps records of inspections and enforcement actions by staff, including inspection reports, correction notices, stop work orders, warning letters, notices of violations, and other enforcement records for new and existing developments. Records are currently tracked on a project/parcel basis and are available upon request.

S5.C.4.e Notice of Intent (NOI)

The City makes available to the public NOIs for coverage under the NPDES Construction Stormwater General Permit and the NPDES General Industrial Stormwater Permit. Copies are available at Redmond City Hall, in the Development Services Center.

S5.C.4.f Staff Training

All staff responsible for plan review of stormwater runoff controls are licensed professional engineers or qualified consultants. Follow-up training will be provided as needed to address changes in standards, procedures, techniques, and staffing. City staff responsible for inspection of stormwater infrastructure are adequately

trained to do so. Lastly, all staff responsible for managing construction TESC measures are CESCL trained. The City will document and maintain records of the training provided and the staff trained.

POLLUTION PREVENTION AND OPERATION AND MAINTENANCE FOR MUNICIPAL OPERATIONS

The City of Redmond has taken many steps to insure operation and maintenance activities are done in a manner that protects or reduce potential impacts to stormwater drainage and receiving waters.

S5.C.5.a Maintenance Standards

The City adheres to and has adopted maintenance standards in Chapter 4 of Volume V of the 2005 Stormwater Management Manual for Western Washington. In some instances, as with the trigger to clean catch basins, the City exceeds maintenance requirements.

S5.C.5.b Annual Inspection of Flow Control and Runoff Treatment Facilities

The City currently inspects and maintains flow control and runoff treatment facilities owned and operated by the City. The City has developed a public stormwater system inspection program and completed the year 2010 inspection for all flow control and runoff treatment facilities by October of 2010. The program utilizes GIS data/database to document repair needs, when the facility was inspected, and when the facility was cleaned. This program will be updated as new facilities are constructed. Once inspected, needed cleaning and maintenance will occur within the time frame prescribed by the NPDES Permit.

The vegetative maintenance for City ponds and bioswales is accomplished on an annual basis using both permanent staff and seasonal employees. Employee hours are tracked using the Mainsaver software program. Control structures related to ponds and bioswales are inspected annually and are tracked via the program used for the underground vault and detention pipe inspection/maintenance program.

S5.C.5.c Major Storm Event Inspections

According to Figure 3.2.1.B of the 1998 King County Surface Design Manual, which is an isopluvial map, the 10-year 24-hour storm event is 2.8 inches of rainfall in 24 hours. During 2012, the City did not have a 24-hour 10-year storm event. The City storm crew and City engineers did, nonetheless inspect the stormwater system after larger events.

S5.C.5.d Catch Basin Inspections

The City has historically inspected and maintained catch basin and inlets owned by the City. Redmond has been documenting cleaning of catch basins and inlets using paper forms. Similar to runoff treatment and flow control facility inspections, in 2010 the City has developed a GIS based public catch basin and inlet inspection program. The program utilizes indicator structures to determine catch basin maintenance needs. Some catch basins are inspected individually, such as those on primary arterials and on maintained snow routes. Such catch basins will likely be inspected more frequently than once during a permit cycle, depending on snow management.

S5.C.5.e Inspection and Maintenance Tracking

Redmond has developed an innovative asset management system to track inspection and cleaning/maintenance of both catch basins/inlets and stormwater facilities (flow

control and runoff treatment). The system uses geographical information system (GIS) software produced by ESRI. The program involves GIS/GPS enable field data capture equipment. Data will be updated on a daily basis and in a format/database making the data easy to illustrate with maps and easy to analyze for reporting. GIS data is also Redmond's most complete dataset of the public stormwater drainage system. Great effort has taken place to insure that GIS data is complete, mostly through field verification which is conducted on an on-going operation.

S5.C.5.f and g Reduction of Municipal Operations Stormwater Impacts

Redmond has developed and adopted procedures for all items listed in the permit requiring documentation of practices/procedures. Locally developed standard operating procedures (SOPs) are equivalent or more protective of receiving waters than those in Volume V of the 2005 Ecology Stormwater Management Manual for Western Washington. Books of procedures and associated policies have been developed and provided to maintenance staff and maintenance staff supervisors/management in Public works and Parks and Recreation; training was also provided.

S5.C.5.h O&M Employee Training

The City has trained all operations field staff on procedures necessary and required of their job function to protect stormwater drainage and receiving waters. The training also included Redmond specific information on water quality and IDDE awareness as discussed in the IDDE section of this plan. All maintenance staff have been trained and plans have been established as to how new maintenance employees, including limited duration employees, will be trained in the future.

S5.C.5.i Stormwater Pollution Prevention Plan (SWPPP) for Redmond's Maintenance and Operations Center

The City developed a SWPPP for its Maintenance and Operations Center. The plan was developed using a consulting firm (Brown and Caldwell) with experience developing SWPPPs for industrial sites. The City's SWPPP details a stormwater and BMP monitoring program, spill response protocol, structural (with implementation dates) and operational BMPs, site maps, contaminant inventory, and a schedule to annually review the SWPPP.

S5.C.5.j Record Keeping

The City maintains records of inspection, maintenance, and repair as detailed in each section of S5.C.5.

Attachment B:

Explanations of Delay of Maintenance
To Stormwater Flow Control and Treatment Facilities
As Required by S5.C.5.a.ii

The following documents provide an explanation for each exceedence of the required timeframe for repairs, as required in S5.C.5.a.ii. The following documents also details the re-schedule plans for repair, as per S9.E.2.d. The circumstances detailed in each of the documents stems from a common source; a better understanding of the cost to repair detention control structures.

Since the identification of this maintenance need at several locations in 2010, the City has learned new information and re-evaluated the cost to repair these structures. Work to repair the structures identified in the following documents is schedule for summer 2013, during dry weather when work can be safely and efficiently conducted.

Explanation of Maintenance Delay
For a Municipally Operated Stormwater Flow Control and Treatment:
The Detention Control Structure at 7014 150 Ave NE

March 27, 2013

This document has been drafted to achieve compliance with the *2012 Western Washington Phase II Municipal Stormwater Permit* (*the 2012 NPDES Permit*), as per S5.C.5.a.ii and S9.E.2.d. It details the circumstances for maintenance performed at a City-owned stormwater detention control structure located at 7014 150 Ave NE, Redmond WA. It also details the re-scheduled plans for meeting the permit's deadlines.

In April 2010, the City identified maintenance requirements related to non-functioning detention control structures at several locations throughout the City. At that time, City staff believed that repairs to these facilities would require a partial re-design and extensive construction work in order for these facilities to function properly. The initial estimates completed in 2010 by a City stormwater engineer, placed the estimated costs of repair to these facilities at greater than $25,000 each. Based on these estimates, the City determined that the project at 7014 150 Ave NE was exempt from the timeline thresholds for maintenance and repair, as detailed in S5.C.5.a.ii of the *2012 NPDES Permit.*

During the summer of 2012, while completing a pilot project to address similar repairs at other locations, several considerations caused City stormwater engineers to re-evaluate their original estimates. These considerations included: 1) recognition that much of the design work completed during the pilot project would be applicable to other sites with similar maintenance needs, 2) construction bids from contractors that were below the amount anticipated, and 3) advice and recommendations from contractors that further reduced the anticipated costs.

The new cost estimate for repair of the detention control structure at 7014 150 Ave NE found that repairs could be completed for less than $25,000. As a result, repair of the control structure at 7014 150 Ave NE was no longer exempt from the timeline thresholds detailed in S5.C.5.a.ii, and the permit requires this work be completed within two years of its identification.

Given these circumstances, and to comply with 2012 NPDES permit, the City of Redmond has re-scheduled the repair of the control structure for the summer of 2013. This schedule allows the City to commence work during dry weather, when repairs can be safely and efficiently conducted.

Explanation of Maintenance Delay
For a Municipally Operated Stormwater Flow Control and Treatment:
The Detention Control Structure at 7428 153 Ct NE

March 27, 2013

This document has been drafted to achieve compliance with the *2012 Western Washington Phase II Municipal Stormwater Permit* (*the 2012 NPDES Permit*), as per S5.C.5.a.ii and S9.E.2.d. It details the circumstances for maintenance performed at a City-owned stormwater detention control structure located at 7428 153 Ct NE, Redmond WA. It also details the re-scheduled plans for meeting the permit's deadlines.

In April 2010, the City identified maintenance requirements related to non-functioning detention control structures at several locations throughout the City. At that time, City staff believed that repairs to these facilities would require a partial re-design and extensive construction work in order for these facilities to function properly. The initial estimates completed in 2010 by a City stormwater engineer, placed the estimated costs of repair to these facilities at greater than $25,000 each. Based on these estimates, the City determined that the project at 7428 153 Ct NE was exempt from the timeline thresholds for maintenance and repair, as detailed in S5.C.5.a.ii of the *2012 NPDES Permit.*

During the summer of 2012, while completing a pilot project to address similar repairs at other locations, several considerations caused City stormwater engineers to re-evaluate their original estimates. These considerations included: 1) recognition that much of the design work completed during the pilot project would be applicable to other sites with similar maintenance needs, 2) construction bids from contractors that were below the amount anticipated, and 3) advice and recommendations from contractors that further reduced the anticipated costs.

The new cost estimate for repair of the detention control structure at 7428 153 Ct NE found that repairs could be completed for less than $25,000. As a result, repair of the control structure at 7428 153 Ct NE was no longer exempt from the timeline thresholds detailed in S5.C.5.a.ii, and the permit requires this work be completed within two years of its identification.

Given these circumstances, and to comply with 2012 NPDES permit, the City of Redmond has re-scheduled the repair of the control structure for the summer of 2013. This schedule allows the City to commence work during dry weather, when repairs can be safely and efficiently conducted.

Explanation of Maintenance Delay
For a Municipally Operated Stormwater Flow Control and Treatment:
The Detention Control Structure at 8801 142 Ave NE

March 27, 2013

This document has been drafted to achieve compliance with the *2012 Western Washington Phase II Municipal Stormwater Permit* (*the 2012 NPDES Permit*), as per S5.C.5.a.ii and S9.E.2.d. It details the circumstances for maintenance performed at a City-owned stormwater detention control structure located at 8801 142 Ave NE, Redmond WA. It also details the re-scheduled plans for meeting the permit's deadlines.

In April 2010, the City identified maintenance requirements related to non-functioning detention control structures at several locations throughout the City. At that time, City staff believed that repairs to these facilities would require a partial re-design and extensive construction work in order for these facilities to function properly. The initial estimates completed in 2010 by a City stormwater engineer, placed the estimated costs of repair to these facilities at greater than $25,000 each. Based on these estimates, the City determined that the project at 8801 142 Ave NE was exempt from the timeline thresholds for maintenance and repair, as detailed in S5.C.5.a.ii of the *2012 NPDES Permit.*

During the summer of 2012, while completing a pilot project to address similar repairs at other locations, several considerations caused City stormwater engineers to re-evaluate their original estimates. These considerations included: 1) recognition that much of the design work completed during the pilot project would be applicable to other sites with similar maintenance needs, 2) construction bids from contractors that were below the amount anticipated, and 3) advice and recommendations from contractors that further reduced the anticipated costs.

The new cost estimate for repair of the detention control structure at 8801 142 Ave NE found that repairs could be completed for less than $25,000. As a result, repair of the control structure at 8801 142 Ave NE was no longer exempt from the timeline thresholds detailed in S5.C.5.a.ii, and the permit requires this work be completed within two years of its identification.

Given these circumstances, and to comply with 2012 NPDES permit, the City of Redmond has re-scheduled the repair of the control structure for the summer of 2013. This schedule allows the City to commence work during dry weather, when repairs can be safely and efficiently conducted.

Explanation of Maintenance Delay
For a Municipally Operated Stormwater Flow Control and Treatment:
The Detention Control Structure at 14202 NE 63 St

March 27, 2013

This document has been drafted to achieve compliance with the *2012 Western Washington Phase II Municipal Stormwater Permit* (*the 2012 NPDES Permit*), as per S5.C.5.a.ii and S9.E.2.d. It details the circumstances for maintenance performed at a City-owned stormwater detention control structure located at 14202 NE 63 St, Redmond WA. It also details the re-scheduled plans for meeting the permit's deadlines.

In April 2010, the City identified maintenance requirements related to non-functioning detention control structures at several locations throughout the City. At that time, City staff believed that repairs to these facilities would require a partial re-design and extensive construction work in order for these facilities to function properly. The initial estimates completed in 2010 by a City stormwater engineer, placed the estimated costs of repair to these facilities at greater than $25,000 each. Based on these estimates, the City determined that the project at 14202 NE 63 St was exempt from the timeline thresholds for maintenance and repair, as detailed in S5.C.5.a.ii of the *2012 NPDES Permit.*

During the summer of 2012, while completing a pilot project to address similar repairs at other locations, several considerations caused City stormwater engineers to re-evaluate their original estimates. These considerations included: 1) recognition that much of the design work completed during the pilot project would be applicable to other sites with similar maintenance needs, 2) construction bids from contractors that were below the amount anticipated, and 3) advice and recommendations from contractors that further reduced the anticipated costs.

The new cost estimate for repair of the detention control structure at 14202 NE 63 St found that repairs could be completed for less than $25,000. As a result, repair of the control structure at 14202 NE 63 St was no longer exempt from the timeline thresholds detailed in S5.C.5.a.ii, and the permit requires this work be completed within two years of its identification.

Given these circumstances, and to comply with 2012 NPDES permit, the City of Redmond has re-scheduled the repair of the control structure for the summer of 2013. This schedule allows the City to commence work during dry weather, when repairs can be safely and efficiently conducted.

Explanation of Maintenance Delay
For a Municipally Operated Stormwater Flow Control and Treatment:
The Detention Control Structure at 15609 NE 113 Ct

March 27, 2013

This document has been drafted to achieve compliance with the *2012 Western Washington Phase II Municipal Stormwater Permit* (*the 2012 NPDES Permit*), as per S5.C.5.a.ii and S9.E.2.d. It details the circumstances for maintenance performed at a City-owned stormwater detention control structure located at 15609 NE 113 Ct, Redmond WA. It also details the re-scheduled plans for meeting the permit's deadlines.

In April 2010, the City identified maintenance requirements related to non-functioning detention control structures at several locations throughout the City. At that time, City staff believed that repairs to these facilities would require a partial re-design and extensive construction work in order for these facilities to function properly. The initial estimates completed in 2010 by a City stormwater engineer, placed the estimated costs of repair to these facilities at greater than $25,000 each. Based on these estimates, the City determined that the project at 15609 NE 113 Ct was exempt from the timeline thresholds for maintenance and repair, as detailed in S5.C.5.a.ii of the *2012 NPDES Permit.*

During the summer of 2012, while completing a pilot project to address similar repairs at other locations, several considerations caused City stormwater engineers to re-evaluate their original estimates. These considerations included: 1) recognition that much of the design work completed during the pilot project would be applicable to other sites with similar maintenance needs, 2) construction bids from contractors that were below the amount anticipated, and 3) advice and recommendations from contractors that further reduced the anticipated costs.

The new cost estimate for repair of the detention control structure at 15609 NE 113 Ct found that repairs could be completed for less than $25,000. As a result, repair of the control structure at 15609 NE 113 Ct was no longer exempt from the timeline thresholds detailed in S5.C.5.a.ii, and the permit requires this work be completed within two years of its identification.

Given these circumstances, and to comply with 2012 NPDES permit, the City of Redmond has re-scheduled the repair of the control structure for the summer of 2013. This schedule allows the City to commence work during dry weather, when repairs can be safely and efficiently conducted.

Attachment C:

Justification for the Use of
Reduced Inspections Frequency for
Private Stormwater Flow Control and Treatment Structures

This report provides a justification for the City of Redmond's use of a reduced inspection frequency for our Private Stormwater Facilities Maintenance Inspection Program as allowed in the *Western Washington Phase II Municipal Stormwater Permit* (The NPDES permit). This report:

- Briefly describes the method we used to examine the effectiveness of our 2-year inspection cycle.
- Summarizes the results of our investigation.
- Details why this investigation validates the use of the 2-year inspection cycle.

Evaluating the Effectiveness of our 2-Year Inspection Frequency

The City of Redmond's Private Stormwater Facility Inspection Program divides the City into 11 drainage basins in order to schedule and track stormwater facility inspections. Each basin is inspected for maintenance requirements once every two years; 5 basins in one year and the remaining 6 basins the next year. Inspections include the entire stormwater system (catchbasins, pipes, detention facilities, biofiltration swales, coalescing plate, etc) regardless of the year they were installed. The City's program has been using a two-year inspection frequency since 1996.

According to the NPDES Permit (S5.C.4.iii), "Reducing the inspection frequency (of private stormwater treatment and flow control facilities) shall be based on maintenance records of double the length of time of the proposed inspection frequency (S5.C.4.iii)." To meet this requirement, the City examined records of inspections conducted between 2006 and 2010 in two drainage basins-- Willows Creek Basin and Peters Creek Basin. These watersheds are representative of other areas within the City and contain a mix of residential, multi-residential, and business land uses.

Using these inspection records, the City identified the number of maintenance orders issued by the Private Stormwater Facilities Inspection Program for stormwater treatment and flow control facilities (other than catchbasins). In order to judge the results of this examination, the City set an 80% compliance rate between inspections as the standard by which we would determine the effectiveness of our two-year inspection frequency. That is to say, we would deem our two-year inspection cycle as ineffective if more than 20% of the stormwater control and treatment facilities in either basins, in a

given inspection year, required maintenance actions. This benchmark is consistent with a similar examination conducted by Seattle Public Utilities (Cascadia Consulting Group, 2010).

Results of Our Examination

The following table summarizes the result of our examination.

Year	Peters Creek	Willows Creek
	% of facilities in compliance after 2 year inspection schedule	
Number of facilities	159	158
2006	87%	95%
2008	87%	87%
2010	91%	87%

Conclusion

This examination reveals that after three 2-year inspection cycles, in two different drainage basins, compliance rates between inspections exceeded 80 percent. This demonstrates that inspection on a 2-year frequency provides adequate protection of water quality. Additionally, this frequency allows time for inspectors and other field staff to conduct more thorough inspections than those required under the permit, including the inspection of catch basins.