



The City of Redmond
Stormwater Management Program (SWMP)
Plan

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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 is 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 to meet NPDES permit requirements.

The first NPDES Permit was issued to the City of Redmond by the State of Washington Department of Ecology in 2007. It has been updated and reissued a number of times. Most recently, the current NPDES Permit took effect on August 1, 2013 and stays in effect until July 31, 2019. A new NPDES permit is scheduled to become effective August 1, 2019.

This SWMP Plan is organized into six chapters that track with major permit requirements. Following this introductory section, these chapters are: 1) Education and Outreach, 2) Public Involvement and Participation, 3) Illicit Discharge Detection and Elimination, 4) Controlling Runoff from Development and Redevelopment projects, 5) Municipal Operations and Maintenance, and 6) Monitoring and Assessment. Specific permit requirements are identified using the permit's citation methodology (e.g., S5.C.3.b). The entire current NPDES permit can be viewed by going to the Washington Department of Ecology website or clicking on the following hyperlink:

<https://ecology.wa.gov/DOE/files/e9/e9264440-348e-4193-b8b0-c4891eb22449.pdf>

The City's SWMP Plan outlines actions Redmond will take in the coming year in accordance with the NPDES permit to reduce the discharge of pollutants from the City's stormwater system into "waters of the state" including rivers, lakes, streams, and groundwater. Of note, the City intentionally exceeds certain NPDES Permit requirements to keep our lake, river, and streams safe for human contact and to sustain aquatic ecosystems/species. However, where these actions are not required by the NPDES permit, they are not described in this SWMP Plan. This version of the SWMP Plan is focused on the permit requirements Redmond is familiar with (the current permit). Additional activities are anticipated to ensure compliance with forthcoming (new) permit requirements.

PUBLIC EDUCATION AND OUTREACH

The City of Redmond provides and participates in a variety of stormwater education and outreach efforts focused on environmental stewardship, including stormwater management.

S5.C.1.a.i and ii Targeted Stormwater Outreach

In 2019, the City of Redmond will implement the following activities to provide targeted stormwater-related outreach programs to the public:

1. Continue to coordinate with other permitted jurisdictions in Western Washington through organizations such as the Stormwater Outreach for Regional Municipalities (STORM) and the North King County Stormwater Outreach Group (The SOGgies). In 2019, the City is considering contributing funds into bus ads targeting north King County residents and visitors. The City will also continue to air stormwater awareness ads (known as the "Certain Things Don't Mix" campaign) that was created by STORM.
2. Continue to provide classroom environmental educational programs to schools in Redmond via a partnership with the Cascade Water Alliance and/or the environmental education non-profit organization, Nature Vision.
3. Launch a pet waste cleanup campaign focused around multi-family residential units, the downtown municipal campus, and regional transit centers.
4. Explore opportunities to implement targeted business outreach campaigns around various source control topics such as dumpster maintenance and kitchen mat cleaning.

S5.C.1.b Creating Stewardship Opportunities

In 2019, the City will provide stewardship opportunities via the *Green Redmond Partnership*, a volunteer stewardship program in partnership with the non-profit land conservation organization, *Forterra*. The City's Environmental and Utility Services Division may support additional stewardship events such as invasive weed removal or riparian plantings.

S5.C.1.c Measuring Outreach Effectiveness

In 2019, Redmond will begin to prepare for a new outreach effectiveness evaluation (to be implemented during the 2019-2024 permit cycle). In 2019, the City will identify and, as appropriate, collect baseline data to support this evaluation. Residential pet waste management is one topic being considered for this effort.

PUBLIC INVOLVEMENT AND PARTICIPATION

The City of Redmond is committed to ongoing opportunities for public input into the development of this plan and for public input into initiatives designed to improve water quality.

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

In 2018 and years prior, the City invited the public to review and comment on the City's Stormwater Management Program Plan (SWMP Plan) via an advertisement on the City's web home page. The City welcomes comments from the public at any time throughout the year, and provides a contact number for residents to call with questions. See the City's SWMP webpage:

<http://www.redmond.gov/Environment/StormwaterUtility/NPDES/>. In 2019, the City will again invite public input using the same means detailed above. The City will also seek to involve the public in our stormwater management related decisions by engaging people during the planning and construction of stormwater infrastructure projects, and during development of stormwater-related policy.

ILLICIT DISCHARGE DETECTION AND ELIMINATION

Redmond's 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.

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

In 2019, the City will continue to maintain 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. 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 Municipal Code 13.06 authorizes the IDDE program. In most cases where illicit discharges are identified, the City enforces this code by using education and technical assistance to seek voluntary compliance. As in previous years, the City will escalate its response as necessary to ensure compliance; first by supplying violators with a warning letter that clearly details what is needed to comply with Municipal Code 13.06 and the consequences of refusal to comply. If further action is needed, the City has the power to bring violators before the City's hearing examiner. In 2019, the City expects to evaluate whether additional enforcement tools can help assure timely compliance with Redmond Municipal Code 13.06.

S.5.C.3.c Ongoing IDDE Program to detect non-stormwater discharges and Illicit Connections

The City is required to screen 12% (on average) of the City's stormwater system for illicit connections each year. In 2014, City's stormwater maintenance crew began using stormwater facility inspections as an opportunity to conduct visual storm system inspections to look for signs of illicit connections. These illicit connection inspections are recorded as part of the Stormwater Crew's catch basin inspection records. The stormwater crew notify the City's IDDE coordinator whenever potential pollution issues are identified. This visual inspection protocol will continue in 2019.

A portion of the required 12% screenings may also be fulfilled by using a camera cart to video sections of the City's stormwater system. This method is also identified as an acceptable screening practice. The percentage of the illicit discharge/screening requirement that will be fulfilled through stormwater system video screening depends on how and where the camera cart is used.

S.5.C.3.d Implement an ongoing program designed to address illicit discharges

The City has an ongoing, fully funded, IDDE program led by the Pollution Prevention Program Administrator. Under the IDDE program, the City responds to and investigates calls regarding environmental concerns such as illegal dumping, spills, illicit discharges, and illicit connections. Documentation of IDDE procedures are detailed in the City's *Illicit Discharge Detection and Elimination (IDDE) Program Manual: City Policies and Procedures (2011)*.

The City also operates a telephone hotline that allows citizens to report illicit discharges or illicit dumping within City limits: (425)556-2868. The hotline operates 24 hours a day, seven days a week. This is expected to continue during 2019. During regular business hours, calls are received and followed up on by the Environmental & Utility Services Division of Public Works. After-hour calls are managed by Redmond's police dispatch and standby maintenance crews. The hotline is publicized on the City's website, magnets distributed at community events, Redmond's television channel (RCTV), and most outreach materials created by the City. All calls are tracked and followed up on.

Additionally, targeted outreach materials are distributed to the public for restaurant related non-stormwater discharges, power washing and car washing, general awareness of stormwater, and prohibited discharges. Additional audiences may be targeted in the coming year.

Finally, all City field staff are trained to identify and report illicit discharges or connections to the City storm system. These trainings will be updated in 2019 and tailored for specific audiences across the City workforce.

S.5.C.3.e IDDE Staff Training

The Pollution Prevention Program Administrator conducts regular trainings of field crews actively involved in the identification, investigation, termination, and cleanup of illicit discharges to the City-owned stormwater system. These permit-required trainings will continue in 2019.

S.5.C.3.f Program Recordkeeping

The City currently tracks and reports on each illicit discharge incident that could constitute a threat to human health, welfare, or the environment. Records include a copy of the notification to Department of Ecology, the City's response to the incident, the timing of the response and how issues are resolved. As previously mentioned, the City also maintains records of visual inspections of catch basins and other stormwater facilities to meet the 12% screening requirement.

CONTROLLING RUNOFF FROM NEW DEVELOPMENT, REDEVELOPMENT AND CONSTRUCTION SITES

How development and redevelopment occur within Redmond can have a significant impact on the health of City's waterways. Throughout the year, the City reviews development plans, inspects development sites during construction, and monitors private stormwater system infrastructure to ensure stormwater facilities are maintained and functioning as designed. In addition, the City requires the use of Low Impact Development (LID) stormwater management practices and principles as required by the NPDES permit. The City plans to carry forward these policies and approaches in 2019.

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 authorizes the City to enforce provisions required in the NPDES permit, including the minimum requirements in the permit's Appendix 1.

The City's *Stormwater Technical Notebook (Notebook)* details the required construction practices and standards for new or retrofitted development projects within the City of Redmond. The current version of the *Notebook* is based on the Department of Ecology's *2012 Stormwater Management Manual for Western Washington (SWMMWW)*, as amended in 2014, and requires actions that are as or more protective than the provisions detailed in the *SWMMWW*. The *Notebook* may be modified in 2019 in anticipation of upcoming permit and *SWMMWW* changes.

The City expects to continue to implement its innovative approach to meeting permit Appendix 1 Minimum Requirement #5 (related to Low Impact Development) in 2019. The City allows developers to use pervious pavements or a functional equivalent designed to provide the same rate of stormwater infiltration. Development projects wishing to use this functionally equivalent design must provide additional hydrologic modeling-based justification detailing equivalency. The City details for design and required additional modeling actions are documented within a third-party peer reviewed Technical Memorandum, "*Permeable Pavement: Functionally Equivalent Design.*" In 2019, the City plans to develop site checklists to support LID "infeasibility analyses" by project applicants.

Section 7 of Appendix 1 of the permit allows permittees to seek approval from Ecology to tailor certain development and redevelopment stormwater requirements. The City use this provision to gain approval for an alternative method of achieving compliance with Minimum Requirement #6: Runoff Treatment and Minimum Requirement #7: Flow Control in permit's *Appendix 1. The City of Redmond Watershed Management Plan* provides the details of this alternative approach.

For 2019, the City will continue to implement the *Watershed Management Plan*. Watersheds to focus on may include Monticello, Tosh, and/or High School Creeks. More information regarding the *Watershed Plan*, including Ecology's *Letter of Approval* for this approach, is available on the City's website: <http://www.redmond.gov/cms/One.aspx?portalId=169&pageId=215036>

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

The City's cross-departmental permitting process includes civil/site plan review and approval process, inspection, and enforcement to meet standards established by the permit for all qualifying new and redeveloped sites. This established approach will carry forward in 2019. The City's oversight of new and redevelopment projects occurs in phases: (1) prior to construction during the plan acceptance process; (2) before the site is cleared during an initial site construction best management practices (BMP) implementation inspection; (3) during construction via construction site inspections; and (4) post construction as part of the stormwater infrastructure acceptance inspection. Proposals for public and private projects are reviewed by licensed engineers or qualified engineering firms for compliance with Redmond's standards. City staff inspect qualifying construction sites to ensure that the proper temporary erosion and sediment control measures have been selected, properly placed, and installed correctly. 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.

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

The City verifies adequate long-term operation and maintenance (O&M) of post-construction stormwater facilities and BMPs for both public and private projects through a number of different inspections. RMC 13.06 establishes the regulatory framework to require inspection and maintenance of private stormwater facilities, and all stormwater structures (including pipes and catch basins). RMC 13.06 also establishes enforcement authority to require cleaning or maintenance of such structures. Redmond's maintenance standards are equivalent to or more protective than those established in the 2012 *Stormwater Management Manual for Western Washington* (Volume V, Chapter 4).

Each year, the City's private drainage inspector inspects private stormwater infrastructure installed since 2010. This will continue in 2019. This inspector also inspects older stormwater infrastructure (although this is not a permit requirement). In 2019, the City may review inspection records for older (pre-2010) structures to determine the most appropriate inspection approach.

As mentioned previously, all stormwater infrastructure, including runoff treatment and flow control facilities, are inspected post construction prior to acceptance by the City. Once this occurs, sites are added to the long term private or public system inspection programs.

During heavy house construction, City inspectors also inspect the stormwater drainage system that can potentially be impacted by the home construction activity. This occurs every six months until 90% of the lot have been built out. If facilities and stormwater conveyance require cleaning during home construction, responsible parties perform maintenance/cleaning.

In all cases where maintenance needs are identified, City staff notify the property owners. The property owners provide the City with receipts and other documentation as proof that the work has been completed. In some cases, structures are reinspected to ensure that necessary maintenance has occurred.

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

In 2019, the City will continue to make the application for NOIs for coverage under the NPDES Construction Stormwater General Permit and the NPDES General Industrial Stormwater Permit available to the development proponents. These forms are stored on Ecology's website.

S5.C.4.e Staff Training

All City of Redmond staff responsible for plan review of stormwater runoff controls are licensed professional engineers or qualified consultants. Follow-up staff training will be provided in 2019 as needed to address changes in standards, procedures, and techniques. Staff responsible for inspecting construction TESC measures at larger sites are Certified Erosion and Sediment Control Lead (CESCL) certified. Staff responsible for inspecting construction TESC measures at smaller sites are trained to do so. The City will continue to document and maintain records of training provided and the staff trained.

S5.C.4.f Low Impact development code-related requirements

In 2016, the City completed the permit's requirement to review, revise, and alter City codes, standards, and procedures with the goal of making low impact development (LID) the "preferred and commonly-used approach to site development." The City completed the required "LID integration" report and submitted it as part of the annual report covering permit activities for 2016.

In 2019, the City will continue to conduct the work necessary to ensure LID practices are fully integrated in Redmond's stormwater management practices and operations.

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 protect and reduce potential impacts to stormwater drainage and receiving waters.

S5.C.5.a Maintenance Standards

In 2016, the City adopted the stormwater infrastructure maintenance standards within Chapter 4 of Volume V of the *2012 Stormwater Management Manual for Western Washington*. These standards will continue to be applied in 2019.

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

The City annually inspects and maintains City-owned or operated flow control and runoff treatment facilities. Control structures related to ponds and bioswales are also inspected annually. The stormwater crew uses a GIS database to inspect, identify maintenance needs, and detail what facilities have been maintained. Cleaning and maintenance occurs within the timeframe prescribed by the NPDES Permit. New stormwater treatment and flow control facilities are added to the inspection list when the City takes them into ownership. In 2019, the crews will rely more fully on the newly implemented asset management system to prepare maintenance work orders.

S5.C.5.c Major Storm Event Inspections

The City typically inspects the stormwater system during and after large storm events. In 2019, as per NPDES requirements, the City's stormwater crew and City engineers will inspect "hotspots" in the stormwater system when rainfall meets or exceed the 10-year 24-hour storm (2.5 inches of rainfall in 24 hours).

S5.C.5.d Catch Basin Inspections

In 2018, the City piloted a catch basin inspection program in select drainage basins using a "circuits" approach. The City will evaluate the value of the circuit approach in 2019 and complete a full inspection of all catch basins within the City. Any catch basin that has 50% of the catch basin's storage capacity filled will be scheduled for cleaning within 6 months of the inspection as required by the permit.

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

Redmond has developed and adopted pollution prevention procedures for all activities listed under this section of the permit. In 2019, these SOPs will be reviewed and consolidated in a single, widely accessible location.

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

The City maintains a training program for all operations field staff on procedures necessary to protect stormwater drainage and receiving waters. The training also includes Redmond-specific information on water quality and IDDE awareness as discussed in the IDDE section of this plan. In 2019, these trainings will occur during "hot topic" meetings with different crews (Stormwater, Streets, Wastewater, Water)

and in more formal settings.

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

The City is implementing 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, up-to-date contaminant inventory, and a schedule to annually review the SWPPP.

The current SWPPP will be updated in 2019 to reflect new construction and practices at the Public Works and Parks Maintenance and Operation Center (MOC). As required by the SWPPP, MOC staff will continue to conduct regular inspections in accordance with the schedules provided in the SWPPP.

S5.C.5.i Record Maintenance

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

MONITORING AND ASSESSMENT

For a number of years, the City of Redmond has monitored both water quality in lakes, rivers and streams, and the effectiveness of best management practices to protect water quality. The 2013-2018 permit now requires all permittees to either pay into a regional monitoring program or conduct water quality monitoring as defined by the permit. The following details how the City will meet permit requirements related to: a) status and trends monitoring, b) effectiveness studies, and c) source identification and diagnostic monitoring.

S8. A. Annual Reporting

In the Monticello Creek Watershed, the City is conducting a street sweeping pilot project to evaluate how this activity may reduce polluted stormwater runoff and improve water quality in nearby streams. Data are being collected through late 2019. Results of the analysis are expected in early 2020.

S8.B Status and Trends Monitoring

During the 2013-2018 permit cycle, the City of Redmond chose to conduct its own status and trend monitoring, as is allowed by the permit. The City has fulfilled its obligations to meet this requirement as detailed in the permit. For information on the monitoring reports generated by this effort, please contact Peter Holte, 425-556-2822.

S8.C Effectiveness Studies

The City has chosen to participate in the Regional Stormwater Management Program (RSMP) effectiveness study in order to meet this requirement. In 2019, the cost to City of Redmond is \$21,899.00.

S8.D Source Identification and Diagnostic Monitoring

The City is required to pay into the RSMP source identification and diagnostic monitoring program. In 2019, the cost to City of Redmond is \$2,013.00.