



The City of Redmond
Stormwater Management Program (SWMP)
Plan

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INTRODUCTION

General Information about this Document

This document, the City of Redmond's Stormwater Management Program (SWMP) Plan, has been prepared 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 current NPDES Permit took effect on August 1, 2019.

The City's 2020 SWMP Plan outlines actions Redmond will take in the coming year to reduce the discharge of pollutants from the City's stormwater system into "waters of the state," including rivers, lakes, streams, and groundwater. These actions help fulfill the City's Environmental Sustainability vision, as outlined in the City's Community Strategic Plan: to be a city that "creates a healthy, sustainable environment for all generations and conserves our natural resources, affords a high quality of life, and draws from scientific evidence-based data."

Note: The City intentionally exceeds certain NPDES Permit requirements to keep our lake, river, streams, and groundwater resources safe for human contact, to sustain aquatic ecosystems/species, and to protect drinking water supplies. However, where these actions are not required by the NPDES permit, they are not described in this SWMP Plan. SWMP Plan is organized into eight chapters that align with major permit requirements.

Following this introductory section, these chapters are:

- 1) Stormwater Planning
- 2) Public Education and Outreach
- 3) Public Involvement and Participation
- 4) MS4 Mapping and Documentation
- 5) Illicit Discharge Detection and Elimination
- 6) Controlling Runoff from Development and Redevelopment projects
- 7) Municipal Operations and Maintenance
- 8) Source Control for Existing Development

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/Regulations-Permits/Permits-certifications/Stormwater-general-permits/Municipal-stormwater-general-permits/Western-Washington-Phase-II-Municipal-Stormwater>

STORMWATER PLANNING

Stormwater planning is a new permit requirement introduced in the 2019-24 NPDES permit. Although Redmond has engaged in various stormwater planning efforts for many years (e.g., the Redmond Urban Watershed Initiative, 2013 Redmond Watershed Management Plan, and continuous capital improvement planning), the new permit requirement asks the City to take a fresh look at a broad range of water quality tools available to protect receiving waters. This effort will help advance the Environmental Sustainability vision within the Community Strategic Plan and Redmond's stream restoration goals (as described in the Redmond Utilities Strategic Framework document).

S5.C.1.a Interdisciplinary Team

The City will assemble a new interdisciplinary team in 2020 to support and provide guidance regarding activities under permit section S5.C.1.a. This team will draw from and expand on the existing City Core Watershed Team.

S5.C.1.b Coordination with Long-Range Plan Updates

In 2020, the interdisciplinary team established to meet the requirement above will identify scheduled updates for the comprehensive planning documents such as the Redmond Comprehensive Plan, Stormwater Master Plan, and Transportation Master Plan. This group will determine opportunities for Stormwater Utility staff to provide input regarding stormwater management and watershed protection needs during plan development.

This interdisciplinary group will also begin to catalog the actions the City took between 2013 and 2019 during long-range planning processes to consider or address stormwater-related water quality and watershed protection concerns and priorities. This information will be used to answer questions required in the 2021 annual report.

S5.C.1.c Low Impact Development Code 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 2020, City planners in Planning and Public Works will meet quarterly to ensure that LID continues to be the "preferred and commonly-used approach to site development." Public Works Planners will also be given a chance to review all proposed municipal and/or zoning code updates to affirm that LID is still the preferred approach to site development in Redmond.

S5.C.1.d Stormwater Management Action Planning

Stormwater Management Action Planning (or SMAP) gets underway in 2020. This effort will be substantially informed by the 2013 Redmond Watershed Management Planning effort (which led to the ranking of all watersheds within City limits).

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.2.a and b, S5.C.5.b Targeted Stormwater Outreach

In 2020, the City of Redmond will implement the following activities to provide targeted stormwater-related outreach programs to the public:

1. Continue to look for ways 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). STORM is launching a dumpster outreach group and SoGgies is planning a coordinated bus ad buy.
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. Classroom programs may be emphasized in priority watershed areas.
3. Evaluate and possibly expand a pet waste cleanup campaign focused around multi-family residential units, the downtown municipal campus, and regional transit centers. Continue outreach to, and evaluation of, behavior change/outreach efforts aimed at dog owners, generally. Redmond is planning to evaluate the effectiveness of a new pet waste outreach campaign in support of the permit requirement.
4. Explore opportunities to implement targeted business outreach campaigns around various stormwater pollution prevention, waste disposal, or source control topics. Specifically, explore regional opportunities to develop a dumpster maintenance campaign. Also, provide targeted outreach to restaurants and food-related businesses, in coordination with the City's Fats, Oils, and Grease Program Administrator.
5. Continue to update City webpages, including the new Taking Action page, <https://www.redmond.gov/1225/Taking-Action>, that offer helpful pollution prevention ideas and activities to residents and visitors.
6. Look for opportunities to translate outreach materials into top languages spoken in Redmond.

S5.C.2.a.iii Creating Stewardship Opportunities

In 2020, 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 either directly or with the support of its Washington Conservation Corps crew.

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.3 Involving the Public in the SWMP

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: <https://www.redmond.gov/410/NPDES-Stormwater-Permit>. In 2019 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 will invite public input in 2020 using the same means detailed above, along with notification through our e-newsletter. 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, during development of stormwater-related policy, and through the stormwater management action planning effort. As opportunities present themselves, the City's new LetsConnect tool may be employed to engage the public in new and different ways.

MS4 MAPPING AND DOCUMENTATION

S5.C.4 Municipal Stormwater Mapping and Documentation

In 2020, the City will continue to build on its comprehensive stormwater conveyance map using 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, outfall size and material details, and spatial data. Both private and public stormwater system data are managed geospatially. Land use and drainage area delineations for each outfall have been developed and are updated regularly. In 2020, GIS staff will be focusing on confirming ownership details for any assets or structures on City boundaries or that cross between Redmond and its neighbors (e.g., interconnected pipes).

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.5.c 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 2020, the City may evaluate whether additional enforcement tools can help assure timely compliance with Redmond Municipal Code 13.06.

55.C.5.d 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. Beginning in 2014, City's stormwater maintenance crew used stormwater facility inspections as an opportunity to look for signs of illicit connections. The associated 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 2020.

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.

55.C.5.e Implement a program to address illicit discharges

The City's IDDE program is 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. 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 redesigned website, and via magnets distributed at community events, Redmond's television channel (RCTV), and many 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,

natural yard care, general awareness of stormwater, and prohibited discharges. New audiences may be targeted in the coming year, depending on need and resources available.

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 2020 and tailored for specific audiences across the City workforce.

S5.C.5.f 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 2020.

S5.C.5.g Program Recordkeeping

In 2020, the City will use the WQWebIDDE portal to track and report 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.

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, and inspects development sites during construction 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 2020.

S5.C.6.a and b Develop 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*, updated in 2019 is available at <https://www.redmond.gov/DocumentCenter/View/4764/Stormwater-Technical-Notebook-2019-PDF>. Beginning in 2020, the City will begin evaluating and, as necessary updating the Notebook to match requirements found in Appendix 10 of the 2019-24 permit.

The City expects to continue to implement its innovative approach to meeting permit Appendix 1 Minimum Requirement #5 (related to Low Impact Development) in the coming year. 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 2020, the City will implement site checklists to support LID "infeasibility analyses" by project applicants.

S5.C.6.c 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 2020. 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 public and private construction sites on a continuous basis to ensure that the proper temporary erosion and sediment control measures have been selected, properly placed, and installed correctly.

During periods of heavy residential 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.

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.

S5.C.6.d Notice of Intent (NOI)

In 2020, 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.6.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, including peer-to-peer training, will be provided in 2020 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.

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.

55.C.7.a Maintenance Standards

In 2016, the City adopted the stormwater infrastructure maintenance standards within Chapter 4 of Volume V of the *2012/2014 Stormwater Management Manual for Western Washington*. These standards will continue to be applied in 2020.

55.C.7.b Maintenance of Facilities Regulated by the City

The City verifies adequate long-term operation and maintenance (O&M) of permanent stormwater facilities and BMPs for all private projects. 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) regulated by the City. 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 *2012/2014 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 2020. This inspector also inspects older stormwater infrastructure (although this is not a permit requirement). In 2020, 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 on private sites, these facilities are added to the long-term inspection programs.

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.

55.C.7.c Maintenance of Facilities Owned or Operated by the City

Stormwater Treatment and flow control BMPs/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 occur 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 2020, the crews will continue to rely significantly on the City's asset management system (Lucity) to prepare maintenance work orders.

Major Storm Event Inspections

The City typically inspects the stormwater system during and after large storm events. In 2020, as per NPDES requirements, the City's stormwater crew and City engineers will inspect "hotspots" in the stormwater system when rainfall meets or exceeds the 10-year 24-hour storm (2.5 inches of rainfall in 24 hours). Staff will test the usefulness of recently updated maps, inspection forms, and maintenance triggers/standards developed to support this infrequent inspection program.

S5.C.5.d Catch Basin Inspections

In 2020, the City will continue to implement its catch basin inspection program. The program is designed to inspect every City-owned catch basin at least once every two years. Any catch basin filled with more than 50% sediment or requiring maintenance to function properly will be scheduled for cleaning within 6 months of the inspection.

In 2020, the City may opt to conduct a review of catch basin inspection and maintenance records to determine if some catch basins require less frequent inspection.

S5.C.7.d Practices, Policies, Procedures to Reduce Stormwater Impacts of Municipal Operations

Redmond has developed and adopted pollution prevention procedures for all activities listed under this section of the permit. In 2020, these SOPs will be reviewed and consolidated into a single, widely accessible location.

S5.C.7.e 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 2020, these trainings will occur during "hot topic" meetings with different crews (Stormwater, Streets, Wastewater, Water) and in more formal settings.

S5.C.7.g Stormwater Pollution Prevention Plan (SWPPP) for Redmond's Maintenance and Operations Center

The City implements 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. It 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 reflects 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.7.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.7.

SOURCE CONTROL FOR EXISTING DEVELOPMENT

The City is launching a new stormwater pollution prevention program in 2020. Early activities include updating City municipal code to clarify the order in which pollution prevention actions and measures shall be taken, developing a progressive enforcement policy, preparing outreach materials to inform program participants about this new effort, and developing a database or other means to store site visit records and related information. Staff will also be developing inspection forms and preparing a comprehensive inventory of businesses that may be involved in the program.

MONITORING AND ASSESSMENT

Redmond is an active member of the Stormwater Action Monitoring (SAM) consortium, which coordinates a regional monitoring program that includes (1) Status and Trends monitoring, (2) Stormwater Program Effectiveness monitoring, and (3) Source Identification and diagnostic monitoring. Redmond has opted to fully participate in SAM under the current permit cycle and is active on several SAM sub-committees. For information about SAM-sponsored monitoring projects, please visit the SAM website: <https://ecology.wa.gov/Regulations-Permits/Reporting-requirements/Stormwater-monitoring/Stormwater-Action-Monitoring>.

S8.A 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. For this permit cycle, the City has opted to participate in the regional Status and Trends monitoring program. Two "small creek" monitoring sites are within City limits.

S8.B Effectiveness and Source Identification Studies

The City has chosen to participate in the SAM effectiveness and source identification programs in order to meet this requirement.