2020-2021 CITY OF BEND STORMWATER ANNUAL REPORT

Stormwater NPDES Permit No. 102901 National Pollutant Discharge Elimination System Municipal Separate Storm Sewer Annual Report

Stormwater UIC WPCF Permit No. 103052 Underground Injection Control System Annual Report

City of Bend Utility Department

October 27, 2021

Accommodation Information for People with Disabilities

To obtain this information in an alternate format such as Braille, large print, electronic formats, etc. please contact Wendy Edde, Stormwater Program Manager at wedde@bendoregon.gov or (541)316-9185; Relay Users Dial 7-1-1, and (541)317-3046.

710 NW WALL STREET
PO BOX 431
BEND, OR 97709
(541) 388-5505 tel
Relay Users Dial 7-1-1
(541) 385-6676 fax
bendoregon.gov

CITY OF BEND

FY 2020-21 NPDES ANNUAL REPORT

Certification Regarding the City of Bend NPDES Municipal Stormwater Annual Report

"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 ensure that qualified personnel properly gather 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 the 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 knowing violations."

Jon Skidmore

Chief Operating Officer

City of Bend

October 28, 2021

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1.0 Introduction

The City of Bend is both a National Pollutant Discharge Elimination System (NPDES) designated small Municipal Separate Storm Sewer System (MS4) owner and operator, and a stormwater Underground Injection Control (UIC) owner and operator. As such, the City is required to meet and report on the requirements of two permits. The first is the NPDES Permit No. 102901 (DEQ (Department of Environmental Quality) File No. 113602) received on February 26, 2007, and the second is the Water Pollution Control Facility Underground Injection Controls (WPCF-UIC) Permit No. 103052 (DEQ File No. 112361) received on May 14, 2013 from the Oregon Department of Environmental Quality (DEQ).

NPDES PERMIT

The NPDES permit requirements are based on the federal Clean Water Act (33 U.S.C. §1342(p)), as amended, along with federal Environmental Protection Agency (EPA) regulations for MS4 discharges. The permit authorizes the discharge of stormwater from all municipal separate storm sewer system outfalls owned and operated by the City. The City has 38 outfalls to the Deschutes River based on a 2019 field survey (36 of which have been verified). These serve a portion of the City along the Deschutes River and West Hills. Privately-owned and maintained entities, such as the Old Mill District, the Bend Parks and Recreation District, and specific subdivisions in town that do not discharge to the City's MS4 system, also have outfalls to the Deschutes River. These outfalls are outside of the City's direct authority with respect to the NPDES permit.

Per item 1 of the NPDES permit's Schedule C, Compliance Conditions and Schedules, initial implementation of the approved stormwater management plan was required to begin by July 31, 2007. To meet this, the City developed the Integrated Stormwater Management Plan (2006). The ISWMP (2006) describes the activities the Program would implement during the City's first 5-year NPDES permit period. These activities include the major components of the Program: Overall Program Administration, Planning and Financing; Public Education and Outreach; Public Involvement and Participation; Illicit Discharge Detection and Elimination; Construction Site Stormwater Management; Post-construction Stormwater Management in New and Redevelopments; Municipal Operations and Maintenance; Monitoring; and Drinking

Water Protection Areas (now Underground Injection Controls). The City has applied for renewal of its NPDES permit and continues to negotiate the terms for the next five-year permit. As part of the renewal packet, the City provided the Integrated Stormwater Management Plan 2022 for consideration (see also WPCF-UIC Permit, below). The City continues to implement the Integrated Stormwater Management Plan (2006) and the Integrated Stormwater Management Plan 2022 (2012) under its administratively extended NPDES permit during this time.

WPCF-UIC PERMIT

On May 14, 2013, the City of Bend received its first Water Pollution Control Facility (WPCF) Permit for Underground Injection Controls (UIC) under the federal Safe Drinking Water Act and Oregon Administrative Rules. This permit covers the City's drywells and drill holes that inject stormwater into the ground. The WPCF permit allows the City to operate Underground Injection Control systems to manage stormwater. Starting in FY2013-14, the City began implementing the Integrated Stormwater Management Plan 2022 (2012) that was accepted by DEQ under the City's WPCF-UIC permit and was submitted for consideration as part of the NPDES permit reissuance negotiation.

ANNUAL REPORT CONTENTS

This represents the fifteenth City of Bend Stormwater Annual Report submitted to the DEQ. This annual report describes stormwater quality and pollution prevention activities implemented by the City from July 1, 2020 through June 30, 2021. As quoted from item 2 of the NPDES permit's Schedule B, Monitoring and Reporting Requirements, the annual report must contain:

- The status of compliance with permit conditions, an assessment of the appropriateness of the identified BMPs, progress towards achieving the statutory goal of reducing the discharge of pollutants to the MEP (maximum extent practicable), and the measurable goals for each of the minimum control measures;
- Results of information collected and analyzed, if any, during the reporting period, including evaluation criteria used to assess the success of the program at reducing the discharge of pollutants to the MEP;
- A summary of the stormwater activities the permittee plans to undertake during the next reporting cycle, including a schedule for implementation;

- A description of changes made to the SWMP, including changes to BMPs or measurable goals identified in the SWMP;
- Information on all new additions or removals of annexed areas that result in an expansion or contraction of the MS4's boundaries;
- Notice that the permittee is relying on another government entity to satisfy some of the permittee's permit obligations (if applicable); and,
- Number and nature of enforcement actions taken.

As quoted from subsection 4. of the City's WPCF-UIC permit, the annual Underground Injection Control System Report must:

- Include stormwater monitoring reports conducted in accordance with their Stormwater Monitoring Plan, including a spreadsheet of all data from sampled UICs provided in the analytical laboratory reports;
- Discuss any action level exceedances (outlined in Permit Table 1) and actions taken to address the exceedances;
- Describe any actions taken to implement the Underground Injection Control System Management Plan required in Schedule D, condition 5, and proposed modifications to that plan, and any additional actions taken to manage the City's injection systems to ensure groundwater protection;
- Describe any actions described in your Underground Injection Control System Management Plan that you were not able to completed and why;'
- Identify any injection systems that you closed, retrofitted, or installed during the year;
- Describe your future (in the next year) known plans to install, modify, convert, or close any underground injection systems; and,
- Provide one hard copy and one electronic copy of the annual Underground Injection Control System Report to DEQ.

The Annual Report contains detailed information on each component required by both permits, including the purpose and general strategy of the component; the tasks completed; an effectiveness assessment; and a summary of modifications proposed to the ISWMP for each component per the review conducted this fiscal year. Supporting documents produced under each task are available upon request via separate appendices. At the end of each task header through the report, a notation is included as to which permit the task applies. The stormwater quality regulatory requirements are different depending on whether the stormwater discharges through an MS4 or UIC system.

2.0 Overall Program Management and Legal Authority

This section describes the overall administrative and management support functions that the City provides to operate and manage the stormwater quality program. This section also describes activities to ensure adequate legal authority and to facilitate enforcement of the City's environmental codes related to water quality. In general, the City's stormwater staff operating within the Utility Department are responsible for the overall coordination of the Integrated Stormwater Management Plan (ISWMP) (2006) and the ISWMP 2022 (2012). However, several City departments assist the stormwater utility staff with the coordination and implementation of the tasks, taking direct responsibility for some tasks.

HIGHLIGHTS

- All program management and legal authority tasks are being met.
- Staff successfully worked remotely during the Covid-19 pandemic.
- City staff and leadership completed the biennial budget process to ensure adequate funding for the program/utility in the upcoming biennium.

TASKS COMPLETED

The following section discusses by task the compliance status, tasks completed, and effectiveness.

Administration and Coordination (MS4 and UIC)

DESCRIPTION

ISWMP (2006) Task II-1.

The Stormwater Action Team will meet as needed and at least quarterly. A list of team members along with yearly participation rates will be noted in the annual report along with meeting summaries. Participation in other work groups will be tracked and noted.

ISWMP 2022, BMP II-1.

Stormwater coordination staff across divisions and departments will meet as needed and at least four times per year.

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

The Stormwater Action Team, long ago were renamed as Stormwater Coordinators. The Stormwater Coordinators consist of multiple interdepartmental groups within the City that focus on coordinating on stormwater issues. The Stormwater Coordinators consist of a standing cross-disciplinary group called Stormwater Liaisons, Chief Operating Officer Direct Reports meetings, and subgroups of these. The meetings this year were held remotely using Microsoft Teams due to Covid-19 protocols.

Following is a listing of the main meetings held discussing stormwater quality or related processes this fiscal year, not including separate budget coordination meetings (see Appendix A):

- Stormwater Liaisons Full Meeting: October 27, 2020
- Stormwater and Development Ad Hoc Task Group: July 20, 2020, August 24, 2020, October 5, 2020
- Solid Waste Trash Enclosures Drainage Ad Hoc Task Group: July 14, 2020
- Stormwater Utility Coordination: September 17, 2020; May 17, 2021
- Stormwater Monitoring 2020-21 Review Meeting: June 24, 2021
- City View Process Clarification: Best Practices When Code Enforcement and CDD modules Collide: June 24, 2021.

Annexations. As part of coordination efforts, City staff received information on the following annexations between July 1, 2020 and June 30, 2021. The City annexed 12.1 acres in N.E. Bend for a new residential development. A map of the annexation area has been included in Appendix A.

EFFECTIVENESS

The meetings have been effective, if more challenging to have in an online format due to pandemic safety. Due to the lack of informal hallway meetings, setting time aside for set meetings has been more important this year. Adjusting to more ad hoc meeting has been useful for managing topics within specific areas given the focus required for remote meetings. Meetings have received solid representation across departments.

FY2021-22 PLANS

The City plans to continue to meet with the full Stormwater Liaison group quarterly, with the Stormwater Utility group at least quarterly, with Utility Communications team regularly as scheduled, with the Streets Coordination team quarterly, and having ad hoc task group coordination meetings as needed.

Legal Authority (MS4 and UIC)

DESCRIPTION

ISWMP (2006) Task II-2.

Evaluate the existing development rules, and documents. Identify needed updates, and work to resolve conflicts in existing ordinance, policy or code language pertaining to the creation and implementation of a stormwater program. Upon review, a final stormwater ordinance, along with appropriate development code language will be adopted and implemented.

ISWMP 2022, BMP II-2.

Track Bend Code Title 16 implementation and compliance, through quantifiable measures. Seek as a general goal to reach 60% or above permit compliance by start of FY14-15.

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

The goal of this task is to ensure that the City has the legal authority to implement the various elements of the ISWMP. Securing adequate legal authority has been a top priority in developing the stormwater quality program. On December 6, 2006, the Bend City Council adopted the Integrated Stormwater Management Plan. Since the adoption of the ISWMP, the Bend City Council has passed several resolutions establishing the stormwater utility, appeals and credit programs, and ensuring adequate funding will be available to the stormwater utility. The City adopted Bend Code Title 16 “Grading, Excavation, and Stormwater Management" on January 4, 2012, and the Central Oregon Stormwater Manual (2010) as part of both Bend Code Title 16 and the City of Bend Standards and Specifications.

EFFECTIVENESS

The City's main legal authority for stormwater quality rests in Bend Code Title 16, and the Standards and Specifications, both of which refer to the Central Oregon Stormwater Manual, which have been effective. Described tasks have been met. The implementation of City View has improved notification and tracking activities for increased effectiveness of Bend Code Title 16 and other development rule implementation.

FY2021-22 PLANS

In FY2020-21 the City Engineering and Infrastructure Department entered a contract for consultant assistance to update the Standards and Specifications and initial work started. The project is scheduled to be completed by early 2022. Additionally, City staff from multiple departments will review new permit requirements and work to improve legal authority and technical guidance where necessary.

Financing (MS4 and UIC)

DESCRIPTION

ISWMP (2006) Task II-3.

Ensure adequate funding to implement this integrated stormwater management plan and to complete a Stormwater Master Plan by Permit Year 4.

ISWMP 2022, BMP II-3.

Ensure adequate funding to implement this integrated stormwater management plan and continue to meet operation and maintenance needs.

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

Over the course of the Integrated Stormwater Management Plan (2006) planning period, the City adopted several resolutions and Bend Code Title 16 that established a stormwater utility with enterprise funding through monthly service charges based on impervious surface coverage. The City was successful in passing a new biennial budget including for stormwater through Council in June 2021. The monthly stormwater service charge rate in FY2020-21 was

$5.79/ equivalent residential unit (ERU), and the City Council passed a rate of $6.20/ ERU for FY2021-22, a 7% increase, in June 2021. The increases are in line with the funding needed for the projects outlined in the City's Stormwater Master Plan, adopted by City Council on August 6, 2014, given the sharp increases in project supplies since the Covid-19 pandemic and recent fires and other impacts to the supply chains nationally. The fee is designed to cover quantity and quality issues. The funds cover stormwater improvements for all projects, not just stormwater priorities. The City plans to conduct a rate structure review and analysis given as a main driver the desire to have flexibility to comingle private and public stormwater on project; this work was anticipated in FY2020-21 and a contractor and scope of work was developed and refined, but due to Covid-19, medical, and workload issues, actual work is scheduled to resume in late 2021.

EFFECTIVENESS

The City was successful in meeting its stormwater pollution prevention goals within the budgeted amounts on a whole, and was effective in securing adequate funding for the coming biennium by developing, reviewing, and adopting the budget. The budget process met all public review and approval requirements.

FY2021-22 PLANS

The City Utility Department plans to conduct a strategic plan update including examining future needs for staffing and budget. Additionally, the City plans to begin a Cost of Service Analysis project in late fall 2021 for the stormwater fund.

Planning (MS4 and UIC)

DESCRIPTION

ISWMP (2006) Task II-4.

Annually review the ISWMP. The results of the review and any changes to the SWMP will be reported on as part of the annual report, due by November 1 of each year.

ISWMP 2022, BMP II-4.

Annually review the ISWMP 2022 to the degree allowable by permitting requirements, plan specific activities for the coming year, and revise the *ISWMP 2022* as needed.

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

The City's GIS geodatabase includes all known City-owned stormwater facilities, an impervious surface area layer and drinking water protection area layers. A copy of the most recent (October 2020) UIC registration list is included in Appendix I. This provides information on new UICs, as well as UICs that have been closed or retrofitted. The City's UIC facilities and wellhead protection areas are included on the City's mapping services website, BOOM. Additionally, the City has street level imagery that staff can use for internal research purposes, and the map includes the 2019 river outfall inspection results.

With the WPCF UIC permit, the City submits its database along with the annual report once per year. The database is kept up to date by the Utility Data Services team. A process is in place to collect and provide the information included in the database. For more information, see Chapter 10, UIC.

EFFECTIVENESS

This is an ongoing task, and the City continues to update and improve its base map of existing structures and knowledge of its facilities as the City grows. Please see Section 8 for numbers of and details on facilities. Section 10 includes more information specific to UICs.

FY2021-22 PLANS

The City plans to submit the UIC registration database annually with the annual report by November 1 as required by the City's WPCF-UIC permit. The City plans to begin a thorough review and revision of the Integrated Stormwater Management Plan in FY2021-22 once the NPDES MS4 Phase 2 Permit is finalized and in preparation for submittal of the WPCF UIC permit application that is due to DEQ in Fall 2022.

Annual Reporting (MS4 and UIC)

DESCRIPTION

ISWMP (2006) Task II-5.

Prepare and submit annually a report of accomplishments achieved in the previous fiscal year (July 1 through June 30) and any continual improvement changes made to the DEQ by November 1.

ISWMP 2022, BMP II-5.

Report accomplishments achieved in the previous fiscal year (July 1 through June 30) and any continual improvement changes made, as allowed by permitting requirements, will be provided to the DEQ by November 1.

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

The FY2019-2020 Stormwater Annual Report was prepared and submitted to DEQ by the November 1, 2020 deadline. The Annual Report underwent staff and Stormwater Public Advisory Group review and was subsequently posted on the City's website.

EFFECTIVENESS

The annual report was reviewed by DEQ UIC and MS4 staff and was found acceptable. The traditional formatting of the annual report was challenging for meeting ADA requirements and thus modifications have been made to ensure improved compatibility.

FY2021-22 PLANS

The City plans to prepare this FY2020-2021 annual report from June through October, with internal staff and Stormwater Public Advisory Group review occurring in September and October in time for completion and final submittal by or before November 1, 2021 to DEQ and subsequent posting on the City website. City staff are always open for continuous improvement through public comment. As DEQ shifts to online and required report forms and formats, the City will work in FY2021-22 to become acquainted with the new online DEQ platform and requirements for annual reporting.

UIC Registration (UIC)

DESCRIPTION

ISWMP (2006) Task II-6.

On a map, show the location of each structure. In addition, show the connections for each system that discharges to the Deschutes River. Assign descriptive ID codes and upload information to GIS. Make GIS information available on the stormwater web site. Develop UIC

database that can easily transfer registration and decommissioning data to DEQ database. Enter data for all existing UICs. Develop process for registering new, modified, or decommissioned injection systems before they are constructed, modified, or decommissioned. Maintain an accurate database.

ISWMP 2022, BMP II-6.

Track Bend Code Title 16 implementation and compliance, through quantifiable measures. Seek as a general goal to reach 60% or above permit (Bend Code Title 16) compliance by start of FY14-15.

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

The City uses the Bend Oregon Online Map viewer to share GIS information including stormwater layers including the City owned and operated UIC facilities and the connections for the City's MS4 system to the Deschutes River. The registration database for UICs and more details on UIC decommissioning and registration is included in Section 10.

EFFECTIVENESS

The City maps its UICs, which are available online. The City provides UIC registration information with the annual report as required by the permit. When lapses in process are noted, such as reporting forms missing any information, the City staff review the database and work to collect and include any missing data, and to improve processes and checks. The City is effective in keeping its database updated, and properly tracks all the UICs the City is aware of after completing an exhaustive field search in the mid-aughts and with all new additions and decommissioning in the years since. On rare occasion staff may become aware of heretofore untracked underground injection control despite due diligence; when this occurs, the database is updated and the find is noted in the next annual report.

FY2021-22 PLANS

The City plans to continue to keep its mapping and registration database current. Additionally, City staff will conduct a Systemwide Assessment update of its UIC system in preparation for the permit re-application submittal.

RESPONSIBLE PERSONNEL

The City is required to provide updates to the personnel responsible for implementing the NPDES MS4 Phase II Stormwater and the WPCF – UIC permits. Given that the activities necessary to implement these two permits across several departments given the interaction between dispersed pollutant sources and water quality, the City Manager (Eric King, City Administration Department, phone 541-388-5505) holds overall responsibility across all tasks to ensure overall interdepartmental communication and coordination to ensure tasks are met. As such responsibility to ensure overall Program Administration, Planning and Finance along with various minimum control measures fall to the department heads supporting the City Manager, including Utility Director Michael Buettner; Community Development Director Russell Grayson; Engineering and Infrastructure Planning Department Director Ryan Oster; Streets Department Director David Abbas, Chief Financial Officer Sharon Wojda, and Communications Manager Anne Aurand. Day to day permit implementation and management responsibilities are assigned to the Stormwater Program Manager Wendy Edde (Utility Department, 541-316-9185 (cell)).

Responsible Task Leads

The following serve as responsible parties/leads for specific tasks:

- Eric King, City Manager, phone 541-388-5505, Program Administration Tasks II-1 through II-5, and overall interdepartmental coordination and collaboration.
- Michael Buettner, Utility Director, 541-317-3000, Program Administration Tasks II-1 through II-6; Public Education Tasks III-3 through III-5; Public Involvement and Participation Tasks IV-1 through IV-4; Illicit Discharge Tasks V-1 through V-3 and Tasks V-5 through V-6; Construction Site Stormwater Activities Tasks VI-1 and VI-2; Post Construction Stormwater Management Tasks VII-1 and VII-2; Municipal Operations Tasks VIII-1 through VIII-4; Monitoring Tasks IX-1 though IX-3, and Underground Injection Controls Tasks X-1 through X-3.
- Russell Grayson, Community Development Director, 541-388-5580, Program Administration Tasks II-1 though II-6; Public Education Task III-1; Public Involvement and Participation Tasks IV-2; Illicit Discharge Tasks V-5 through V-6; Construction Site

Stormwater Activities Tasks VI-1 and VI-2; Post Construction Stormwater Management Tasks VII-1 and VII-2; Municipal Operations Task VIII-5.

- Ryan Oster, Engineering and Infrastructure Planning Department Director, 541-317-3000, Program Administration Tasks II-1 through II-3; Illicit Discharge Tasks V-3; Construction Site Stormwater Activities Tasks VI-1 and VI-2; Post Construction Stormwater Management Tasks VII-1 and VII-2; and Underground Injection Controls Task X-3.
- Sharon Wojda, Chief Financial Officer, 541-693-2158, Program Administration Task II-3.
- Anne Aurand, Communications Manager, 541-388-5573, Public Education Tasks III-1, III-3, and III-5; Public Involvement and Participation Tasks IV-2 through IV-4; Illicit Discharge Tasks V-2 and V-4.
- Cheryl Howard, Volunteer Coordinator, City Administration, 541-388-5570, Public Involvement and Participation Task IV-3; Illicit Discharge Task V-3.
- David Abbas, Streets Department Director and Charles “Chuck” Swann, Street Division Manager, 541-317-3000, Illicit Discharge Task V-3 and Municipal Operations Tasks VIII-1 through VIII-4.
- Wendy Edde, Stormwater Program Manager, 541-316-9185, All Tasks.

SUMMARY OF EFFECTIVENESS

Since the adoption of the ISWMP (2006), the City has (a) formed and maintained a stormwater utility, (b) obtained reliable funding for that utility, (c) staffed the utility, currently with a program manager, a senior program analyst, a compliance specialist, 5 dedicated stormwater field staff working on the Utility collections team, 3 FTE (Full Time Equivalents) sweeper staff, 1/2 FTE management/administration staff, support to Engineering and Infrastructure Planning Department for stormwater capital projects, and additional temporary staff as needed. The City is actively coordinating internally, as well as with the public through the Stormwater Public Advisory Group and stormwater quality staff participate on other city planning task groups as invited. Additionally, the City is also actively coordinating with other municipalities in the state through the Oregon Association of Clean Water Agencies (ACWA), Pacific Northwest Clean Water Association (PNCWA), and American Public Works Association (APWA), to improve effectiveness, knowledge, and efficiencies. Finally, staff engages in trainings to ensure strong and efficient program management—stormwater utility staff participated in a multi-day Community-Based Social Marketing online seminar, Watershed-wise Based Landscaping Courses, and the ACWA Stormwater Summit among other online offerings in FY2020-21, as discussed later in the report.

3.0 Public Education and Outreach

The purpose of this component is to implement a program to distribute educational materials to the community or conduct equivalent outreach activities about stormwater discharge impacts on water resources, including both surface waters and groundwater, and the steps that the public can take to reduce such pollutants in stormwater runoff. The City is committed to providing a strong public outreach component for this program. The City's Public Education and Outreach objective is to provide the public with a basic understanding of stormwater and an appreciation for the importance of stormwater best management practices (BMPs).

HIGHLIGHTS

- City contracted for and distributed a new Oregon Watershed Approach to Landscape Design booklet to attendees of a similarly named workshop series to help promote better site landscape design. The booklets were made available at the front office of the Utility Department as well.
- City provided air time for the 2020 BendFilm/Zolo Media/ City of Bend Clean Water Works video contest grand prize winner's public service announcement (PSA) completed in August 2020 on local television channels, designed to minimize pollutant impacts of tire wear. This advertisement was intermixed with additional stormwater PSAs in second half of fiscal year.
- Developed initial content for and posted an online educational platform with specific lessons targeting stormwater education for use by 6-8th grade school aged children and interested adults: Our Water System: A Journey Through Bend | City of Bend (bendoregon.gov).

TASKS COMPLETED

The following section discusses by task the compliance status, tasks completed, and effectiveness.

Utility Bill Inserts, Brochures or Posters (MS4 and UIC) and Develop and Implement Strategic Outreach Plan Targeting Pollutants of Focus for the Public and City Employees (MS4 and UIC)

DESCRIPTION

ISWMP (2006) Task III-1.

Develop and distribute at least two stormwater information pieces to area residents per permit year on average. Distribute at least 4 information pieces.

ISWMP 2022, BMP III-1.

Develop and distribute at least one stormwater information piece to area residents per permit year. Existing outreach pieces will be made available as well. Provide City Council and at least one to two targeted employee groups per year information on the stormwater program typically in areas needing coordination improvement.

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

Three stormwater information pieces developed by the City in FY2020-21 were (a) the 2020 Clean Water Works video contest professional public service announcement video on reducing pollutants from tires; (b) the Oregon Watershed Approach to Landscape Design booklet, available under separate cover, developed by Green Gardens Group, Association of Professional Landscape Designers, and Association of Northwest Landscape Designer that the City purchased for use by our citizens, printed and distributed at workshops and an outdoor landscape event; and (c) online stormwater specific lesson plans for education: Our Water System: A Journey Through Bend | City of Bend (bendoregon.gov). (See lesson 2b).

The City of Bend is a member agency of the Oregon Association of Clean Water Agencies (ACWA).

The City's Stormwater Program Manager served as the project manager for the ACWA IDDE brochures technical development. The final graphical layout of the products was released for use in Spring 2020. Staff worked with downtown communication to release the first one on RV maintenance right before the July 4th, 2020 weekend. The seven pieces included: Food Service (fact sheet and poster); Landscape Maintenance (for the professional, and for hiring professionals); Pressure Washing and Surface Cleaning; RV Disposal; and Spills and Leaks.

The City included two articles in the Bend Current Newsletter in July 2020, including "Deschutes River Cleanup Day," and "Clean Water Works Student Video Contest Winners." The September 2020 Bend Current edition included "Newport Design Update."

In addition, the City released several City News articles related to stormwater in FY2020-21, including the following: "Open House for Newport Corridor Improvement Project" (one of the main goals of the project is to improve stormwater quality discharging into the Deschutes River), October 13, 2020; "Newport Corridor Improvement Virtual Open House" February 23, 2021; "City of Bend to Host Free Workshops on "Watershedwise Landscaping," February 25, 2021; "Scoop the Poop" Youth Video Contest, April 15, 2021. Several additional articles mentioned tips that help prevent stormwater pollution as well: "Slow the Flow This Growing Season," April 23, 2021, and "City Urges Water Conservation" June 4, 2021 (both included tips that would reduce dry weather flows); and "City Beautification Program Supports New Pollinator Pathways Projects," May 27, 2021 (mentions volunteer opportunities for litter pickup).

For City environmental and communication staff, a multiple day community based social marketing course hosted by the Clean Rivers Coalition was provided to staff on January 6-11, 2021 (see Appendix B).

For outreach to City Council, in the City Manager's Report memorandum to City Council on May 7, 2021, Council was provided an update entitled "Rubberized Chip Seal Street Preservation Treatment" that discussed work performed to consider if the new chip-seal treatment might have a negative impact on the Deschutes River because of 6PPD-Quinone and steps to be taken to safely learn more.

The City continued to distribute through passive means (at front desks, or during inspections, etc.):

(a) Low Impact Development (LID) Maintenance Fact Sheets: Porous Pavement, Sedimentation Manhole, Rain Garden, Drywell, Catch Basins;

(b) One Water brochure that includes stormwater information to new utility customers, now also on the City's website in English and Spanish;

(c) Annual Drinking Water Quality Report, which includes a summary of stormwater program activities to protect drinking water quality.

EFFECTIVENESS

The City completed all tasks for these items. The City news articles, and monthly Bend Current newsletters distribution completed electronically has a lower distribution rate than when it was sent out with utility bills, but those that receive it have opted in and are more likely to read it resulting in less paper waste. The City switched to the electronic version from the "Our City Newsletter" that used to be mailed with customer utility bills to also be able to better reach more people such as renters.

FY2021-22 PLANS

The City plans to continue to promote the educational benefits of the youth video contest videos. The City will continue to provide news and updates related to the Newport Corridor project and looks to distribute further the ACWA IDDE brochures via social media. In FY2020-21, ACWA began work to develop Spanish language versions of the IDDE brochures which the City will also use once released in FY2021-22. In late fall, the City plans to conduct some educational outreach promoting the new educational resources on the City's website.

Stormwater Pollution Prevention Website (MS4 and UIC)

DESCRIPTION

ISWMP (2006) Task III-2.

Update the website with a stormwater message in Permit Year 2, and to keep the website updates with new information in future years.

ISWMP 2022, BMP III-2.

Update the website with revised stormwater messages starting in FY2012-13, and to keep the website updated with new information in future years.

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

The City's stormwater utility website is available at www.bendoregon.gov/stormwater. We continue to promote through our advertising the Clean Water Works campaign via an easy to remember location (www.bendoregon.gov/cleanwaterworks). These are pages of the website that focus on the stormwater quality aspects of the utility. Modifications to the website to meet Americans with Disabilities Act (ADA) requirements continue with continued focus on ensuring our newest entries are ADA compatible. Current information has been added in FY2020-21 including the latest videos as part of the Clean Water Works kids video contest and competition information; an announcement of the Watershedwise Landscape workshop series, updates on Stormwater Public Advisory Group meetings, and the FY2019-20 annual report (at www.bendoregon.gov/stormannualreport).

EFFECTIVENESS

The City used Google Analytics to analyze website traffic over the fiscal year. The main stormwater pages had 5,398 views in FY2020-21, down slightly from 5,700 views in FY2019-20, with the Clean Water Works Kid's page seeing the most pageviews at 837. The annual report pages entertained 83 views for an average time per viewer of 4 minutes 49 seconds. A peak of page views at just under 250 occurred during the Kid's Clean Water Work video

contest People's Choice Award voting. Most daily page views ranged under 50-page views per day.

A major review and update of the stormwater website would be useful, and staff checked in with downtown communications staff on the possibility of improving tie ins with a major revamp of the website, but updates to the Community Development Department pages are currently in the works first. The City has received no complaints on the website for readability or content.

The City used multiple staff across departments and spent a significantly large amount of time to ensure the annual report was converted to meet ADA requirements for posting on the website. The efforts continue to update the website with new materials and revise old.

FY2021-22 PLANS

The City plans to revamp its annual report format to better meet ADA requirements should DEQ reporting forms and permit issuance not be ready for submission of the FY2020-21 annual report. City stormwater staff expects to draft and complete an initial review and edits for refreshing the website by June 2022, although actual changes may take place later given staff timing. In the meantime, standard updates of new information and the annual report will continue.

City News Broadcast, Stormwater Quality Message, and Press Releases (MS4) and Media Relations: City News Broadcast, Stormwater Quality Messages and Press Releases (MS4 and UIC)

DESCRIPTION

ISWMP (2006) Task III-3.

Post at least one stormwater quality -related message per year during each permit year.

ISWMP 2022, BMP III-3.

Post on average at least one stormwater quality-related message(s) per year during each permit year.

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

The City distributed the new "Tired of Pollution" Video and additional public service announcements (PSAs) across television stations, through BendFilm offerings when the Volcanic Theater Pub could be open, and on radio. In addition to "Tired of Pollution" that ran throughout the year, the City ran the "The Issue With Flushable Wipes" PSA in November and December for the holidays, the Original Clean Water Works 2015 video in January, and Lucie's Flow Rivers video in February. Specifically, in the fall/winter, from November 23, 2020, through February 28, 2021, the City ran 70 video spots on KTVZ; and 18 spots on KFXO), 196 spots on KOHD, and 123 spots on KBNZ. In the spring the City ordered 68 spots between April 12, 2021 and May 2, 2021 from KOHD, another 68 spots from KBNZ. On radio, the City ran 68 spots on KQAK, 68 spots on KPWK, and 20 spots on KBND and 40 spots on KMTK. The video spots that aired in the spring included Clean Water Works 2015 and Tired of Pollution 2020. These spots ran during the morning hours (6 am – 12 am all days of the week. The radio spots that aired include "Storm Water, Clean Water, Rain;" and "Illicit Dumping."

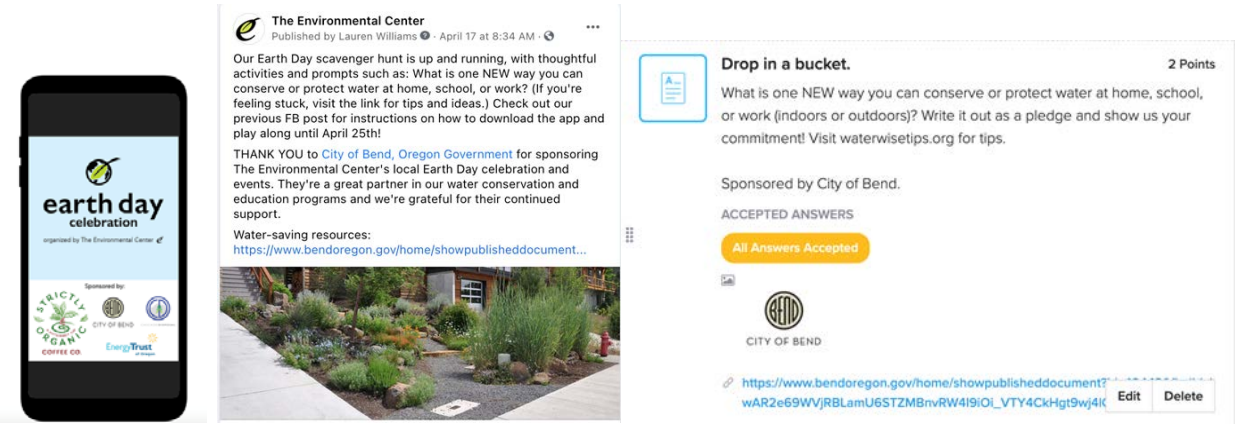


Illustration: Goosechase Scavenger Hunt Activity for Earth Day.

The City helped sponsor Earth Day events and advertising. The City also participated in the online version of the Environmental Center's Earth Day events by providing information and financial sponsorship support for their Goose Chase scavenger hunt app. The Environmental Center advertised the app and related pollution prevention messages through their social media channels as well. The City was recognized as a sponsor on the press releases and advertising. The Earth Day celebration advertisements were placed in the GO quarter section, and the Source advertisement encouraged readers to: "Participate in activities and events

featuring film, art, learning opportunities, and a virtual parade" for the period of April 16-25, 2021.

EFFECTIVENESS

The fall/winter spots (November 23, 2020 – February 28, 2021) had a net reach of 51,533 for KTVZ, and 23,662 for KFXO. The spring television spots ran during good times in the morning, with many airings during the news and prime times. The City only received 61 spots on KBNZ of the agreed 68 but these were all no charge.

The City maintains a very thorough stormwater website. Additional improvements to the website are underway, as older material is being checked and updated, and a larger update is planned. That said, a major review and refresh of the website is needed, and staff checked in with downtown communications staff on the possibility of improving tie ins with a major revamp of the stormwater website, but updates to the Community Development Department pages are currently in the works first. And the City has received no complaints on the website for readability or content.

The City did not place Love Your River advertisements in the Bend Park and Recreation Guides this year as the booklets were not printed due to Covid-19 shut-downs for public safety. The City will look to restart again when Bend Park and Recreation District starts issuing printed guides again.

The Earth Day goose chase activities and related educational outreach were not as effective for stormwater quality as planned given that the bendoregon.gov/cleanwaterworks website was submitted for inclusion but was removed in final documents by the host to keep the focus more on water conservation.

FY2021-22 PLANS

The City plans to revamp its annual report format to better meet ADA requirements should DEQ reporting forms and permit issuance not be ready for submission of the FY2020-21 annual report. City stormwater staff expects to draft and complete an initial review and edits for refreshing the website by June 2022, although actual changes may take place later given staff timing. In the meantime, standard updates of new information and the annual report will continue.

Stormwater/Watershed Diorama (MS4) and School/Enrichment Activity Outreach: Stormwater/Watershed Diorama (MS4 and UIC)

DESCRIPTION

ISWMP (2006) Task III-4.

Purchase and make available the Stormwater/Watershed diorama for educational opportunities.

ISWMP 2022, BMP III-4.

Make available the Stormwater/Watershed diorama and videos for educational opportunities.

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

The City has two educational dioramas -- a watershed plastic model; and a groundwater one showing how underground injection controls work. The City promoted both dioramas for free lending at Teacher's Night Out at the High Desert Museum in the fall and distributed information on additional supplies available for lending.

In FY2020-21, the City engaged the services of the Environmental Center to provide school educational outreach to 3rd-5th grade students in the Bend-LaPine Schools via the "Water, Water" program as part of the EarthSmart Sustainability Series. The Environmental Center was again offered the use of the watershed diorama model as part of their educational effort. The series covers drinking water, wastewater, and stormwater components. In the fall 2020, the Environmental Center had the lessons reviewed by an outside consultant, the Avarna group for relevance, responsibility and responsiveness, and some updates were made to the lesson plans as a result. Students did not return in person in the fall and so lessons were adjusted to an outdoor based format. The pollution lesson was changed to a graphic activity about watershed pollution. The Environmental Center also piloted a pilot program, Aguas Frescas, for Latinx students, reaching out to 12 students in grades 7-12 with watershed and water system outreach.

EFFECTIVENESS

The City was effective in making the dioramas available given the situation at hand, and Environmental Center staff were able to use the watershed diorama for student outreach. The Teacher's Night Out event was held online in 2020, with City staff able to give a short 5-minute conference online seminar overview of offerings and providing electronic versions of the handout with our lending library including the dioramas. Given the Covid-19 pandemic shutting down schools for a major portion of the year and enforcing social distancing, these dioramas were understandably not put to strong use this year. However Environmental Center staff reached out to four schools for in-class lessons taught virtually, teaching 233 individual students in FY2020-21. In addition, Environmental Center staff reached out to 15 K-5 students in a Juniper Elementary School after-school program to teach them how watersheds work. The Environmental Center staff also taught 13 students about watersheds as part of the Spring Break program, and taught 40 students per week over a four-week period about watershed and water quality in their summer program.

The Environmental Center staff used Pear Deck to check student understanding. In relation to pollution prevention efforts, here are some of the responses that were shared with the City as reported by the Environmental Center:

"What are some actions you can take to prevent pollution in our watershed?"

"I can pick up any litter I see in my neighborhood, or city. I can also clean up the beaches when I go to Hawaii!"

"Pick up trash around before the wind blows it in!!!!!!!!!!!!!!!!!!!!"

"Stop leaving trash on ground and no fertilizer "

"If we see rain in the forecast we go out and pick up litter before it rains"

"Stop using toxic pesticides or fertilizer in your garden or even on a farm."

"Plant trees so their roots can hold soil down."

"Make sure we pick up dog poop before it rains so it doesn't get to our water"

"Use animal friendly sops, fertilizer"

FY2021-22 PLANS

The City will note their availability again at Teacher's Night Out and both remain available both directly to teachers and to the local environmental education groups such as Upper Deschutes Watershed Council and the Environmental Center. The City is looking towards revamping and upgrading its online educational offerings for school children and will place emphasis on that area this year than contracting to have an in-school program through its previously contracted partner, in great part due to the issues and continued uncertainty related to Covid-19, and those online offerings offer a wider audience including interested adults. The City may consider expanding its lending library to include high quality gloves for clean-up events.

Performance Standards (MS4 and UIC) and Implement Performance Standards (MS4 and UIC)

DESCRIPTION

ISWMP (2006) Task III-5.

Develop draft performance standards starting in Year 4 to obtain internal review, and finish by midyear in Year 5 for inclusion in the permit package.

ISWMP 2022, BMP III-5.

This task will be deemed complied with if the City has substantially met the performance standards per the ramp-up schedule included in Appendix B of the ISWMP 2022.

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

The City prepared the performance standards in the original five-year permit term and staff are currently implementing them, including the following specifically related to Public Education and Outreach.

Coordination with Existing Opportunities/Activities.

- "Stay sufficiently informed about the programs and materials being developed by Oregon Association of Clean Water Agencies (ACWA) and/or other suitable programs and groups by regularly attending or tracking ACWA or other appropriate stormwater, groundwater and public outreach committees."

- "Distribute and/or make readily available outreach and educational materials to appropriate audiences within the City. This includes, but is not limited to schools, volunteer committees, neighborhood associations, community groups, business groups and /or other environmental groups."

City Staff and Officials

- "Identify, develop, and communicate at least annually, information about the City's stormwater quality program to city management and elected officials so that they are well informed about the requirements, their role in implementing the local stormwater program, and the City's progress."
- "Train new employees involved with stormwater pollution prevention activities on their role in implementing the local stormwater program."

Procedures and Training for Handling Telephone Calls from the Public About Stormwater Pollution Prevention

- "Establish procedures for answering, tracking, and efficiently routing stormwater- related telephone calls to the appropriate staff for handling. "
- "Train staff assigned to answering or responding to telephone calls on the established procedures. "
- "Promote the use of a City telephone number to facilitate public reporting of illicit discharges. "

EFFECTIVENESS

Having performance standards and separate strategic education outreach campaign together with an original ISWMP (2006) and an ISWMP 2022 makes tracking tasks more challenging and repetitive than one consolidated plan. This could be improved by streamlining into one ISWMP.

FY2021-22 PLANS

The City will work to update the Integrated Stormwater Management Plan in FY2021-22, including education tasks needed to meet the new NPDES MS4 individual permit, anticipated to be completed in fall FY2021-22, and the WPCF-UIC permit consolidated within the Stormwater Management Plan update.

SUMMARY OF EFFECTIVENESS

The City met or exceeded the measurable goals for implementation of requirements permit activities. The focus this year again was the successful continuation of the Clean Water Works Youth Video contest partnership program, this year focused on dog waste given increased impacts being seen as more people access the outdoors with their pets more often given Covid-19 adjustments and the associated pollutants and human health issues related to

improperly managed dog waste. The educational video opportunity is recognized as a compatible activity with remote learning.

In addition, the full booklet “Oregon Watershed Approach to Landscape Design” contains a wealth of information for individuals to view their individual property as a mini watershed and to use low impact development techniques to improve their site-specific situations. As detailed in Section 7.0, the related workshops were well attended and well regarded. All attendees received electronic copies of the outreach piece, which is also now available at the front desk of the Utility Department. City staff also worked hard to draft improvements to the City’s educational pieces online; and expects to complete those efforts enough to promote publicly in FY2021-22.

4.0 Public Involvement and Participation

The goal of the public involvement and participation (PIP) component is to work with City residents, public employees, businesses, and government officials concerning the importance of and methods for controlling pollutants in urban runoff. Ultimately, community involvement in implementing pollution prevention practices and in evaluating and documenting conditions within the watershed is the only hope of achieving meaningful change in the quality of urban runoff.

HIGHLIGHTS

- Engaged as a sponsor and participated in another Deschutes River Clean up event successfully modified for Covid-19 pandemic safety precautions.
- In a continued innovative partnership with a nonprofit (BendFilm), a for profit media group (Central Oregon Daily), and the City of Bend, area 4th/5th-12th grade students interested in film vied for prizes in creating a 30-second public service announcement targeting pollutants from dog waste.
- Engineering and Infrastructure Planning Department staff held public meetings for CIP (Capital Improvement Project) projects that contain stormwater improvements, including the Newport Project.
- The Stormwater Public Advisory Group met and provided input on the Streets Department proposal to try a recycled tire-based chip seal considering the recent findings of the source of 6PPD-Quinone impacts to Coho and steelhead. The Streets Department will keep the operations out of the MS4 area and utility staff will work towards monitoring the initial installations to learn more about the risk from the application.

TASKS COMPLETED

The following section discusses by task the compliance status, tasks completed, and effectiveness.

Public Advisory Committee (MS4)

DESCRIPTION

ISWMP (2006) Task IV-1.

Conduct at least semiannual meetings of the Public Advisory Committee.

ISWMP 2022, BMP IV-1.

Conduct at least semiannual meetings of the Public Advisory Group.

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

The Stormwater Public Advisory Group (PAG) met three times in FY2020-21 (October 14, January 21, and April 22) with the planned June 29 meeting having to be delayed until the new fiscal year July 2021 due to record high temperatures impacting a planned field trip to the Newport Corridor construction site project.

EFFECTIVENESS

City staff exceeded the compliance metric for this task. The purpose of the PAG is to inform staff on how to improve its stormwater programs and activities, rather than providing input directly to the City Council. The PAG is extremely effective in providing staff viewpoints from different perspectives, allowing for distinctive improvements to approaches and products. The Stormwater PAG was effective in reviewing and providing input on policy and next-steps with regards to the Streets Department new chip seal overlay product that includes recycled tires, and the potential for impacts to the Deschutes River and resident steelhead given recent studies related to tire oxidation and the impacts of 6PPD-quinone. As a result of the review the Streets Department has refocused the locations of their pilot efforts to allow more time for additional study.

FY2021-22 PLANS

The City plans to continue to meet with the Stormwater Public Advisory Group bimonthly to quarterly as appropriate, and have them focus on annual report review, Integrated Stormwater Management Plan update review, and review of items requested as part of the increasing density adaptations the City is making with PAG input.

Public Meeting (MS4)

DESCRIPTION

ISWMP (2006) Task IV-2.

Hold a Public Meeting in Permit Year 1. A similar meeting will be held in Year 4 prior to submittal of the permit application for the second permit period.

ISWMP 2022, BMP IV-2.

Hold a Public Meeting by Permit Year 4 or 5 for the mid-period revision, and again in FY20-21 or FY22-23 in time for the next permit period submittal.

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

City staff met these original public meeting goals for permits. This year, two public meetings were held for the Newport Corridor project that includes improving stormwater quality as a main goal of the project.

EFFECTIVENESS

City staff exceeded the compliance metric for this task with the project specific public meetings that pivoted to online public meetings effectively. A Newport Corridor Improvements Survey in 2020 of area residents and businesses found the following results:

- Most respondents travel to the Newport Avenue corridor by automobile (96%). However, many also bike (63%) and walk (58%).
- 58% report visiting the corridor daily, and nearly 9 of 10 respondents say they travel there at least weekly.
- Survey respondents say the most important corridor characteristics are: safe & easy travel (65%); quality of stormwater going into the Deschutes River (61%); access to businesses (57%); and pedestrian safety (52%).
- The most popular corridor improvement goals are:
  - 55% safe vehicle travel
  - 45% pedestrian safety and accessibility
  - 45% bicycle safety/accessibility
  - 41% attractive streetscape design

FY2021-22 PLANS

The City will seek public input on the revised Integrated Stormwater Management Plan once drafted in conjunction with input from the Public Advisory Group.

Stormwater Quality Volunteer Opportunities (MS4)

DESCRIPTION

ISWMP (2006) Task IV-3.

Provide support materials to interested volunteers for the identified opportunities.

ISWMP 2022, BMP IV-3.

Provide support materials to interested volunteers for the identified opportunities.

COMPLIANCE STATUS

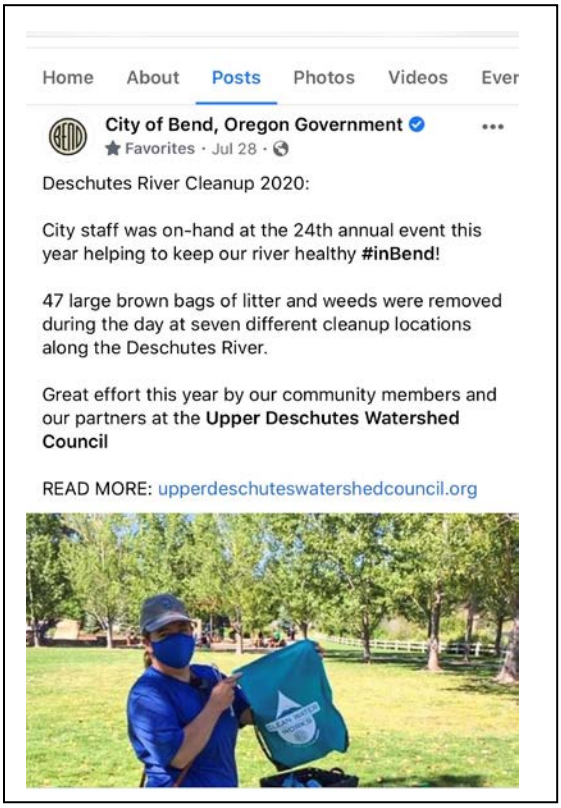
Fully Compliant.

TASKS COMPLETED

The City hosts the Clean Water Works Youth Video Contest to create 30-second commercials on a stormwater topic. This effort had strong turnout this year considering Covid-19 implications. See www.bendoregon.gov/CleanWaterWorksKids to view the winning entries.

The City continues to provide stormwater drains markers, and trash/sediment cleanup supplies to volunteers interested in marking storm drains and cleaning the city. This year two volunteers marked storm drains with the Das Markers.

DAS Marker.



Facebook post noting Deschutes River Cleanup Activities.

The City also title sponsors the Upper Deschutes Watershed Council's yearly Deschutes River Cleanup (see Appendix C for an article in the City Utility Newsletter on the topic).

PAG members (see Task IV.1) are also volunteers.

EFFECTIVENESS

The Clean Water Works Youth Video contest had strong representation across schools considering the challenges with the Covid-19 pandemic affecting the school year with seven entries this year. BendFilm and Central Oregon Daily also donated time and effort. Two teachers make it a concerted portion of their curriculum given the educational component. Despite the Covid-19 pandemic limiting in-person outreach at Teacher's Night Out, this year the City received 7 entries for the video contest.

We also had two volunteers this year for storm drain marking. They marked or remarked just under 50 drains in October, 2020. One volunteer, a recent hydrogeology graduate, gained experience in his field by also preparing a review of stormwater best management practice requirements for solid waste handling (trash dumpster area) facilities across the west coast.

The City has an entire program focused on enlisting volunteer support, and stormwater is listed distinctly in the offerings:

https://www.bendoregon.gov/government/departments/human-resources/volunteer-program

The Upper Deschutes Watershed Council's Kolleen Miller reported an effective cleanup event in July 2020. The event was the one event that the Bend Park and Recreation District allowed to continue during the pandemic, so having an event at all was a remarkable success even though the number of volunteers had to be limited and no divers were allowed to ensure public safety.

FY2021-22 PLANS

The City plans to again support the Deschutes River Cleanup event in FY2021-22, with the event scheduled for July 31, 2021. The City purchased compostable doggie bags and recycled dog bag holders to provide as giveaways at the event and suggested including a riparian planting effort to help provide shade for fish refugia and help reduce water temperatures along the Deschutes. Planning occurred in FY2020-21, and as a result UDWC procured native plants and the City staff prepared to lead a planting detail along a section of the river approximate to Riverbend Park.

As Covid-19 pandemic response allows, the City will promote additional volunteer opportunities as well.

Performance Standards (MS4)

DESCRIPTION

ISWMP (2006) Task IV-1.

Prepare draft performance standards starting in Year 3 to obtain internal review, and finish in Year 4 for inclusion in the permit package.

ISWMP 2022, BMP IV-4.

Implement the performance standards per ISWMP 2022 schedule in Appendix B (of the ISWMP 2022).

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

The City completed the preparation of performance standards and began implementation on time, and is currently implementing all performance standards, including the following specific to public involvement and participation.

Storm Drain Inlet Stencils and Signs.

- "The City will have an active program to install stencils/storm drain markers on publicly owned storm drain inlets. This includes installation by municipal staff, contractors, volunteers, and/or community groups."
- "As a goal, stencils and signs will be maintained sufficiently to be legible."

Coordination with Public Schools (K-12).

- "The Stormwater Program Manager will either be responsible for distributing, or delegating the distribution of, information about school-based outreach and educational materials to public schools within the City. This may include disseminating information on how to obtain copies of materials and providing lending opportunities for the watershed diorama and may include working with outside groups who work directly with school children providing pollution prevention and water education."

Local Community Outreach Program.

- "The City will participate in community outreach activities from the areas listed below for the purpose of communicating the general stormwater pollution prevention message, complementing regional or statewide coordinated specific messages for target audiences, and facilitating the proper management and disposal of targeted pollutants. The City will participate in at least three activities annually.

  (a) Distributing local, regional, or statewide information through other venues (e.g., local newsletter, local magazine, mailing to target group, computer web site or network, local telephone directories, etc.).

  (b) Initiating new community events or playing a major role in planning and staging a community or city-wide event. Examples include, but are not limited to, Earth Day, Stream Stewardship Day, or other festival or fair, business mixer, seminar or workshop for a target group, contest, or coordination with businesses to provide pollution prevention discounts (e.g., recycled car wash discount).

  (c) Developing and raising watershed awareness

  (d) Coordinating with local volunteer groups to conduct outreach."

EFFECTIVENESS

City staff have met the compliance metric for this task. The Stormwater Public Advisory Group was highly effective in pivoting to online meetings and still analyzing the potential impact of and understanding the interest in using recycled tire road base for chip seal. The PAG was effective in supporting a pilot program doing so outside the MS4 area to allow more time for study without impacting surface stormwater and river water quality. Similarly, the stenciling program continued, in addition to the permanent stamped stormwater utility access hole covers being placed with the “Only Rain in the Storm Drain” distinguishing message. The city pivoted and resiliently provided educational outreach and actively sponsored and participated in the Deschutes River Cleanup event despite the pandemic.

FY2021-22 PLANS

The City plans to continue implementing the performances standards and will review and incorporate the activities more seamlessly into the updated Integrated Stormwater Management Plan to be developed in FY2021-22.

SUMMARY OF EFFECTIVENESS

The City exceeded its goals for public participation this year. The partnership with Central Oregon Daily/Zolo Media and BendFilm continues to be excellent in helping to get the word out about both clean water and the contest to both students and the public. The film contest entrants must learn the subject matter well to be able to effectively convey it to the public in a 30-second commercial. The People’s Choice Award contest continued to be effective at leading people to the Clean Water Works website. In 2020 staff effectively adjusted to the loss of Munch ‘n’ Movies to buying airtime on local television and this year also at a small movie theater. The local Regal cinema is not cost effective as national contracts have gotten prime times, and McMenamin’s that shows movies as well only provides their own advertising prior to showing. The City as of spring 2020 is now also working with the Tin Pan theater (seats about 20 per showing) to provide a cost-effective venue for displaying these public service announcements, in addition to television buys.

Whereas on the printed version of the Bend Park and Recreation Guide was not created this past year, the City’s print advertising effectiveness was not as strong this year because of

Covid-19. The Bend Park and Recreation Guide does remain a strong avenue for print advertising, however in the future so the City will continue to track.

Similarly, the outreach for Earth Day was limited by Covid-19 concerns, but City staff worked again with Environmental Center staff to pivot and provide an alternative via Goose Chase that attracted participants to compete in several scavenger hunt activities that could be conducted with proper distancing. As part of this effort, the City was included as a sponsor for the Earth Day Celebration events and noted as such in print advertisements in the Go! Section and the Source Weekly as well as in online advertising. The Environmental Center was also contracted to do work for the Utility Department for school children. The Goose Chase scavenger hunt item for the City included encouraging participants to actively pledge to engage in activities to protect or conserve our waters, actively encouraging public participation.

5.0 Illicit Discharge Detection and Elimination

The purpose of this component is to eliminate discharges of pollutants from illicit connections and illegal dumping into the storm drainage system. This chapter describes the activities conducted during FY2020-21 to address illicit discharges.

HIGHLIGHTS

- The City finished and distributed a new "Landscape Maintenance for Healthy Waters and Happy Customers" fact sheet. The City posted the RV waste brochure on its social media channels just prior to the long July 4th holiday weekend in 2020 to help reduce illicit discharges.
- All reports of Illicit Discharges were investigated and followed up in a timely manner.
- The City transitioned to a new online reporting system for Illicit Discharges.

TASKS COMPLETED

The following section discusses by task the compliance status, tasks completed, and effectiveness.

Public Education on Illegal Discharges and Improper Disposal (MS4 and UIC)

DESCRIPTION

ISWMP (2006) Task V-1.

Develop or acquire public education materials in Year 1 of the permit period and determine an effective means of distribution. As part of this effort, the City will target business categories representing the greatest risk from a stormwater perspective and will research the effectiveness of workshops, self-inspection checklists, business license renewal requirements, and green-program award type programs in determining effective means of distribution. The materials will be distributed to all public employees in Year 2 of the permit period. The materials will be distributed to half of the businesses in Year 2 and half in Year 3 of the permit period and yearly thereafter.

ISWMP 2022, BMP IV-1.

Continue to develop or acquire public education materials and determine an effective means of distribution (with prioritization). As part of this effort, the City will target business categories

representing the greatest risk from a stormwater perspective and seek to use effective means of distribution. The City will work to coordinate with other programs (e.g., Industrial Pretreatment Program and the Water Conservation Program related to landscape irrigation). Progress will be deemed satisfactory if all task deadlines are met.

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

Distributed an educational letter and fact sheet (Landscape Maintenance for Healthy Waters and Happy Customers) to all 173 landscape maintenance professionals registered in the City business licenses database (see Appendix D).

EFFECTIVENESS

The City exceeded its goal by providing an outreach letter and fact sheet to 100% of the licensed landscape professionals working in the Bend area.

FY2021-22 PLANS

The City plans to provide the waste oil storage BMP (Best Management Practices) outreach to restaurant owners in FY2021-22. And City staff will update the Illicit Discharge Manual formatting to be ADA compatible and repost on the website.

Illicit Discharge Reporting Mechanism (MS4 and UIC)

DESCRIPTION

ISWMP (2006) Task V-2.

Establish a procedure for responding to reports of illicit discharges and advertise an illicit discharge reporting e-mail link on the stormwater pollution prevention web site and reporting telephone hotline.

ISWMP 2022, BMP V-2.

Continue to provide and advertise an illicit discharge reporting email and/or phone link on the stormwater pollution prevention web site and outreach.

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

The City maintains several ways for the public to report an illicit discharge including: Advertises Utility Department phone number 541-317-3000, Online Citizen Service Request (CSR) Form and a new Code Enforcement Complaint Portal.

The City is transitioning to a new Code Enforcement Portal as its primary tool for collecting complaint information, tracking IDDE follow-up and streamlining the enforcement processes. See Annual Report FY2017-18 Appendix D for a copy of the existing standard operating procedure (SOP).

EFFECTIVENESS

The City continues to improve its reporting mechanisms and targeted public education on illicit discharges. This year the City received 36 IDDE reports, 27 from the public and 9 from City staff (see Appendix D). The City completed followed up on all reports and issued two Notice of Violations.

FY2021-22 PLANS

Staff will work to update the existing IDDE SOPs (Standard Operating Procedure) to better align with this new software and workflows (See Annual Report FY 2017-18 Appendix D for a copy of the existing SOP).

The City plans to provide educational outreach to restaurant owners in FY2021-22. And City staff will update the Illicit Discharge Manual formatting to be ADA compatible and repost on the website.

Post Warnings About Illicit and Illegal Discharges (MS4 and UIC)

DESCRIPTION

ISWMP (2006) Task V-3.

In Year 1 the City will determine whether to use stencils (volunteer friendly but temporary), thermoplastic markers, or other options). Should the City decide to use stencils, the City will provide appropriate storm drain markers for volunteers in Permit Year 2. Bend will require

developers to provide storm drain labels in Permit Year 3 (after implementing ordinance and procedure changes).

ISWMP 2022, BMP V-3.

Include storm drain message permanent marking requirements in standards and specifications. Organize volunteers to paint or post markers, as appropriate. Markers to be posted (at least 50 per year on average).

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

Per the Standards and Specifications (2010), all new and replaced stormwater utility access hole covers include a permanent imprinted, “Only Rain in the Storm Drain.”
The City installed 111 new curb inlets catch basins with this permanent imprint in FY2020-21.

The City has an ongoing volunteer storm drain-marking program, with the installation of round, plastic semi-permanent markers that are affixed to existing catch basins. This marker includes a general “Don’t Pollute” message. Two volunteers working as a team inspected and installed or replaced over 40 markers along with providing notes on existing marker conditions from several areas in town.

Additionally, City staff installed/replaced another 24 markers this year. Of those, staff replaced 10 existing markers that were damaged or missing as part of its QA/QC program.

EFFECTIVENESS

The City has successfully integrated a method of providing a permanent stormwater quality message on all new public utility access hole lids and curb inlet drainage facilities. There was

some confusion with public utility access hole covers with the message being placed on private facilities leading to maintenance responsibility confusion in the field.

Staff are currently working to improve this area by having clear requirements that marking of private storm drains be with a different look to help distinguish between the two.

The City did have two volunteers affix storm drain markers in October 2020. The City has successfully marked more than 50 per year on average.

FY2021-22 PLANS

The City plans to continue marking efforts. The City also plans to work towards updating the catch basin grate detail as part of the Standards and Specifications update process to include a pollution prevention message that will be cast directly and permanently onto the grate's surface.

Post Illicit Discharge Prevention Information on Web Site (MS4 and UIC)

DESCRIPTION

ISWMP (2006) Task V-4.

PAC (now Stormwater Public Advisory Group) to provide input on what to post on web site; SWAT (now Stormwater Coordinators) to approve and City will post the information online.

ISWMP 2022, BMP V-4.

Stormwater PAG, public or staff to provide input on what to post on web site; Stormwater Coordinators to approve. City to post information.

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

Staff continues to coordinate outreach materials with the Stormwater Public Advisory Group and Stormwater Coordinators. Stormwater related materials are in a central location at: (www.bendoregon.gov/stormwater). The page has five main categories, including "Get Involved" which links to a location to report illicit discharges.

EFFECTIVENESS

Staff continues to coordinate outreach materials with the Stormwater Public Advisory Group and stormwater coordinators. Stormwater related materials are in a central location at: (www.bendoregon.gov/stormwater). The page has five main categories, including “Get Involved” which links to a location to report illicit discharges.

FY2021-22 PLANS

The City plans to conduct a review and make improvements to its website, including updating the Stormwater Illicit Discharge Manual to meet ADA standards in winter 2021-22.

Stormwater System Map (MS4 and UIC)

DESCRIPTION

ISWMP (2006) Task V-5.

Develop an approach and acquire the tools necessary to map in the first year, and to map 25% of the drainage system per year in the first four years of the permit.

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

The City developed a GIS geodatabase in FY2008-09 for all known stormwater facilities. The geodatabase is updated regularly as appropriate. A public map viewer is available online that includes locations of catch basins, storm drainage pipe and UICs. This viewer is located at: (https://www.bendoregon.gov/services/resources/mapping-services).

EFFECTIVENESS

The City has successfully conducted an in-field inventory and ongoing maintenance to keep the data map updated. The geodatabase includes directions of pipe flows as well as swales, UICs, and other features. The City stormwater facilities are fully mapped and current efforts keep it updated.

FY2021-22 PLANS

City has found several newly installed UIC in the database that are missing depth/diameter attribute information, City staff will work to collect this information and refine the data entry process to capture this data moving forward. City staff will work to update the systemwide assessment per the WPCF permit requirements.

Illicit Discharge Ordinance and Implement Illicit Discharge Regulations (MS4 and UIC)

DESCRIPTION

ISWMP (2006) Task V-6.

Develop a draft ordinance in Year 12 through 3 of the permit period, finalize, and implement the ordinance by Year 5 of the permit period.

ISWMP 2022, BMP V-5.

Continue to implement the illicit discharge sections of Bend Code Title 16 per the schedule in the Code.

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

On January 4, 2012, the Council adopted a stormwater ordinance adopting Bend Code Title 16. Chapter 16.20 of the ordinance covers Illicit Discharge Controls. In FY2012-13, the City finalized the Illicit Discharge Best Management Practices Minimization Manual. Additionally, as part of the ordinance effort, interdepartmental staff worked through roles and responsibilities in 2012. The Stormwater utility takes primary responsibility for illicit discharge inspection, response, and follow-up.

EFFECTIVENESS

The City has successfully developed a stormwater ordinance, Bend Code Title 16, and the Illicit Discharge Manual. The City continues to implement the code, provide education materials, and issue violations when voluntary compliance cannot be reached. has successfully conducted an in-field inventory and ongoing maintenance to keep the data map

updated. The geodatabase includes directions of pipe flows as well as swales, UICs, and other features.

FY2021-22 PLANS

The City plans to update the IDDE standard operating procedure in FY2021-22 to account for changes resulting from City View code enforcement module changes. The City plans to review the new NPDES MS4 permit to determine if any changes to the ordinance or regulations will be needed to optimize implementation. The City plans to include some updates to the Standards and Specification in the last half year of 2021 that will help prevent illicit discharges.

Program to Detect and Address Illicit Discharges (MS4 and UIC)

DESCRIPTION

ISWMP (2006) Task V-7.

Evaluate the existing program and identify additional program requirements and resource and training needs in Year 3. Additional resources and training will be acquired in Year 4. The program implementation will begin in Year 5.

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

The Utility Department works closely with Operations staff, Building Inspectors, Engineering Inspectors, and Industrial Pretreatment Program staff to coordinate IDDE efforts. When a spill or illicit discharge is noted, the Stormwater Analyst investigates to attempt to find and properly address the source.

The City uses an online program to track staff training, exam results and to ensure stormwater performance standard trainings are occurring. In FY2020-21, 147 Utility staff were trained and completed 1,041 trainings on the following topics: Concrete Use and Disposal; Winter Road Care; Leaky Equipment and Fueling; Spill Prevention, Control and Cleanup; Utility/Road Repair & Maintenance; Pressure Washing and Surface Cleaning; Vehicle and Equipment Washing; and Paint Use and Disposal. The trainings are provided as a series of stormwater-

performance standard specific trainings and are implemented throughout the year to appropriate staff.

Staff continue to conduct inspections of the City's 15th Street and Boyd Acres Corporation Yards in conjunction with quarterly Safety Inspections. This year City staff update the inspection form to include more specific information on the sites stormwater system, see Appendix D for a copy of the new inspection form.

EFFECTIVENESS

The City continued to use its tracking system, maintaining a spreadsheet of stormwater-specific follow-up actions, tracking 36 events in FY2020-21 (see Table 5.1 IDDE Summary FY2014-15 through FY2019-20 below). Construction site IDDE and erosion complaints are tracked in a separate database (See Chapter 6).

See Appendix G for a complete list of all staff that received training on the performance standards, including specific training on illicit discharge detection and notification. Of the 36 IDDE reports this year, 9 (or 25%) were from City staff. Given the size of the stormwater program, it is useful to have extra eyes in the field and staff across disciplines who know what to look for to protect water quality.

FY2021-22 PLANS

The City plans to continue with the Target Solutions trainings and will investigate again the potential use throughout the City for the Illicit Discharge general training sheet. Staff will review the anticipated new NPDES MS4 permit to being planning for any modifications to the program to detect and address illicit discharges.

Minimize Landscape Irrigation Runoff (MS4 and UIC)

DESCRIPTION

ISWMP (2006) Task V-8.

In Year 1 and Year 2 determine efforts most effective in minimizing irrigation runoff by examining existing water patrol and smart (climatologically based) controller efforts, and examining review and approval process for proper design and installation of irrigation

systems. Funding mechanisms to also be determined. Determine methods to improve. Implementation of approved ideas are scheduled to begin in Year 3 and continue in Year 4.

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

Stormwater staff work closely with the water conservation group to minimize dry weather flows from irrigation runoff. The water conservation group responded to 40 irrigation dry weather flow complaints. A copy of the WaterWise Tracking database has been included in Appendix D. The water conservation group temporally paused its sprinkler inspection program, due to staffing levels, the group anticipates re-offering this program in FY2021-22

EFFECTIVENESS

The work of the water conservation program has resulted in increased efforts towards improving landscape irrigation efficiency and reducing landscape irrigation runoff. These efforts directly reduce dry weather flows that can carry pollutants to the storm drain.

FY2021-22 PLANS

The City plans to continue to team with the water conservation team on landscaping concepts that overlap such as outreach events and media outreach to minimize landscape overwatering that results in dry weather flow that can carry pollutants to the storm drain system.

Performance Standards and Implement Performance Standards Related to Illicit Discharge Controls (MS4 and UIC)

DESCRIPTION

ISWMP (2006) Task V-10.[1]

Prepare draft performance standards starting in Year 3 for obtaining internal review, and finish in Year 4 for inclusion in the permit package.

[1] (Note: Task number V.9 was omitted in error in the original ISWMP (2006).)

ISWMP 2022, BMP V-6.

Implement the performance standards per the ISWMP 2022 schedule.

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

Performance standards have been completed and incorporated into the ISWMP 2022 (see the Performance Standard Tables at the end of this chapter). The ISWMP 2022 was approved by DEQ as part of the WPCF-UIC permit issuance. Full Performance Standards implementation is occurring for each of the following.

Prepare for Illicit Discharge Screening and Investigations.

- Receive information on non-stormwater discharge reports.
- Assure that needed follow-up, elimination, and cleanup of illicit discharges are conducted.
- Provide other staff with information about the status of source identification and elimination. In particular, staff who identify an illicit discharge will be informed about its outcome.
- Make sure the required reporting is completed.
- Distribute information to the City's management and elected officials, as requested, about the resources needed to implement these performance standards.
- Facilitate the implementation of these performance standards; and be responsible for sharing activities and findings with the Stormwater Coordinators
- Train at least biennially City staff who maintain and repair the municipal storm drain conveyance system. Train other municipal staff who conduct field work where illicit discharges are likely to occur, to recognize illicit discharges and the procedures for responding to these discharges. Train all new staff who fill positions as described above, about illicit discharge recognition and response procedures.
- Keep maps of the completed municipal storm drain system sufficiently accurate to be used for tracing illicit discharges.
- Train City staff assigned to conduct illicit discharge investigations on the knowledge and skills necessary to be effective. They will be familiar with guidance developed by the City and DEQ staff and these performance standards.

Conduct Field Screening.

- Begin program to identify evidence of illicit discharges to the municipal storm drain conveyance system, using municipal maintenance and other local field staff while they are conducting their routine work. Report on any evidence of illicit discharges identified during these field screening activities to the Stormwater Program Manager or designee for follow-up.

Conduct Field Investigations

- Verify whether an illicit discharge has occurred, using information provided as part of field screening and complaints received from the public or other agencies. The goal will be to initiate follow-up activities within twenty-four business hours from the time the Stormwater Program Manager receives the report.
- When an illicit discharge has occurred, find the source, and eliminate it, as soon as possible. Trace the source(s) of the illicit discharge using storm drain maps, inspecting utility access holes, and making surface observations. Record and maintain findings, as appropriate.
- Continue to inspect and follow-up illicit discharges until:

  a. The source of the illicit discharge is found and eliminated; or

  b. The discharge has stopped and cannot be traced to a source"
- "If the City identifies three or more illicit discharges in a fiscal year within an area served by any major outfall or a UIC within a two-year time of travel or wellhead protection area, additional illicit discharge investigations will be conducted in the area(s) served by the major outfall(s)/UIC during the subsequent fiscal year or sooner. These additional investigations will include one or more of the following, as appropriate:

  a. Periodic above ground surveillance of the area for visual evidence of illicit discharges.

  b. Additional inspections of businesses, if appropriate.

  c. Additional periodic investigations of outfalls, UICs, waterbodies, and open channels for evidence of illicit discharges; and/or

  d. Additional targeted educational outreach in the area."

Follow-Up to Field Screening and Investigations

- "When a party responsible for an illicit discharge is found, provide the responsible party with:

  a. educational information about the impacts of his or her actions,

  b. the requirements of the local stormwater ordinance,

  c. options for proper discharge or disposal, and/or

  d. educational materials describing BMPs.

  When the source of an illicit discharge has not been found, distribute educational outreach materials to residents and/or businesses located in the immediate vicinity of the illicit discharge."
- If the discharge is traced to a business, the Stormwater Program Manager, or delegated staff, will distribute appropriate educational and BMP information.
- The goal of follow-up investigations will be to stop the illicit discharge(s) as soon as practicable and protect water quality to the maximum extent practicable.

- Begin enforcement procedures, if appropriate, as per the enforcement authorities as set forth in the City's municipal ordinances.

  a. Investigate and record reported spill reports and/or complaints about incidents within the City.

  b. Become familiar with existing spill prevention, containment, response, and clean-up programs that cover the city's jurisdiction.

  c. Coordinate illicit discharge prevention, elimination, and clean-up activities with existing programs.

  d. Establish a mechanism for obtaining information about spill incidents from other agencies and departments within the municipality so that source identification and follow-up activities can be coordinated.

Document and Report Completion

- Document the number and types of illicit discharge incidents reported and follow-up investigations conducted within the agency's jurisdiction. (This does not include information from fluid spills from automobile accidents.)
- Collect information for annual reporting including:

  a. Number of illicit discharges identified as part of staff investigations;

  b. Number of illicit discharges reported by other city staff and the public; and

  c. Follow-up activities.

EFFECTIVENESS

The City's implementation of the performance standards is in full compliance with the ISWMP 2022.

FY2021-22 PLANS

The City plans to continue to implement the performance standards throughout FY2021-22.

SUMMARY OF EFFECTIVENESS

The City has made considerable progress including improved legal authority and clarifications through the illicit discharge ordinance and associated Illicit Discharge Manual. The City is now transitioning to a new code enforcement software to better track Illicit Discharge complaints and enforcement activities. This new software includes inspection scheduling and automated enforcement letters and Notices of Violation (NOVs). The City continues to effectively use the online citizen service request and the new Code Enforcement Online Portal to respond to illicit discharge reports. Table 5.1 provides a summary of illicit discharge reports, follow-ups, and enforcement actions over time. Staff are trained annually on BMPs to reduce illicit discharges

and encourage them to report all spills and Illicit discharges observed in the field. An illicit discharge summary table was provided in Table 5.1. Locations of Storm Drain Markers are included in Figure 5-1.

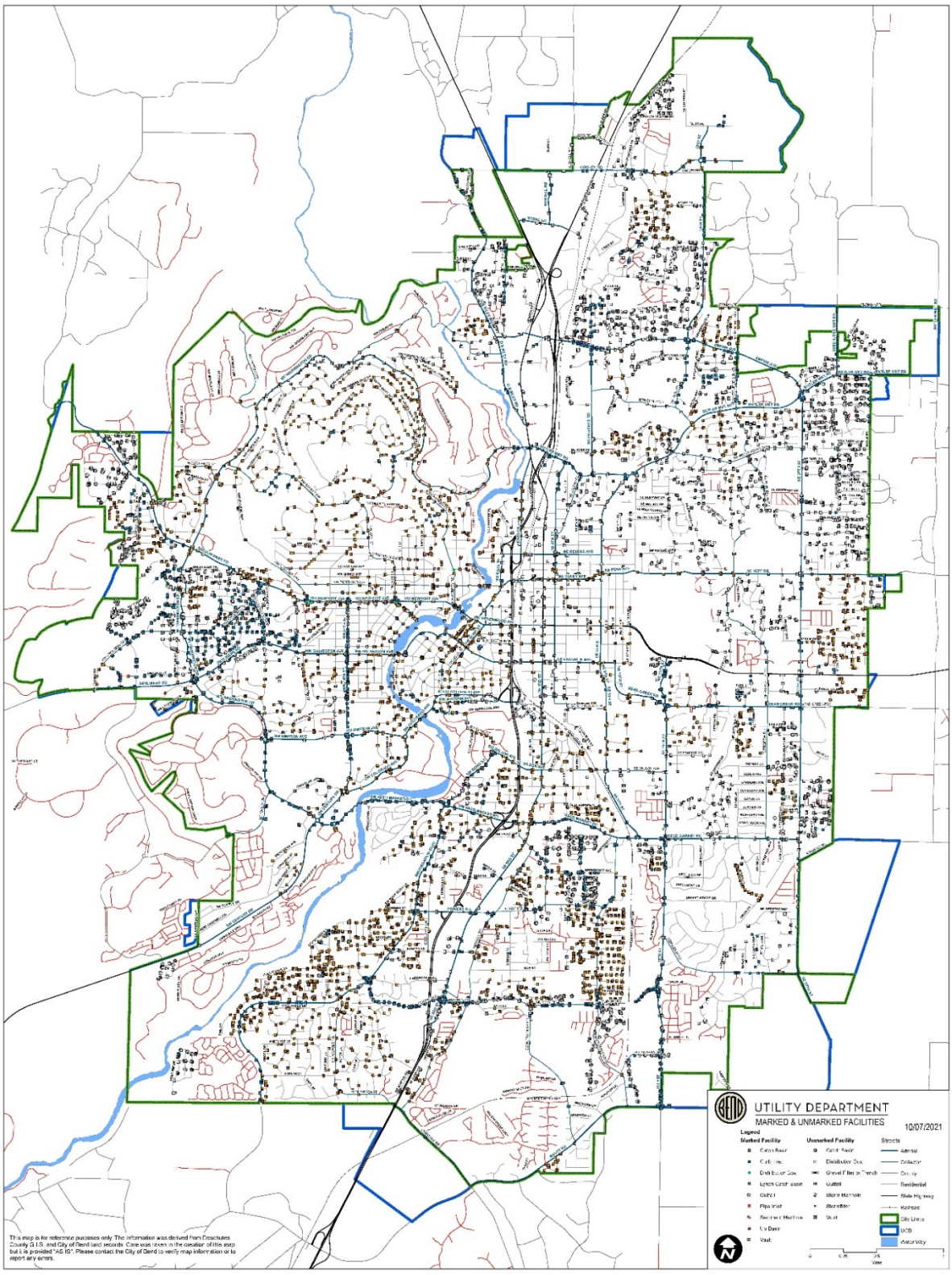
TABLES AND FIGURES

Table 5.1 IDDE Summary FY2014-15 through FY2020-21

FY	ID Total # of Reports	# of Confirmed Illicit Discharge Events.	# of Events Where Educational Materials were Provided	# of Verbal Warnings	# of Written Warnings	# of Notice of Violations Issued
FY14-15	56	48	45	30	1	1
FY15-16	48	37	35	24	2	4
FY16-17	33	26	24	19	1	3
FY17-18	25	17	20	14	2	1
FY18-19	32	19	20	15	2	0
FY19-20	35	27	17	13	1	2
FY20-21	36	24	27	16	1	3

Note that in FY2016-17 the stormwater program added a new Stormwater Compliance Specialists to focus on construction site inspections. The new inspection program began tracking construction related complaints in a separate database, thus reducing the breadth of IDDE complaints starting in FY2016-17.

Figure 5-1 Storm Drain Marking Map



6.0 Construction Site Stormwater Activities

The objective of this component is to control pollutants discharged to municipal storm drains from new and redevelopment construction activities to the maximum extent practicable. Several of the pollutants of concern within the Deschutes River are directly attributed to sediment loading. The City sees it as a priority to reduce stormwater related sediment contributions into the river within its jurisdiction. Sediments are a major pollutant that can come off uncontrolled construction sites and have the potential to clog stormwater facilities (e.g., drywells, drill holes, and swales) and negatively impact the Deschutes River, which is 303(d) listed for sediment and turbidity within the City of Bend.

Construction sites that disturb or are part of a common development that disturb one or more acres and discharge stormwater directly to a surface water body are already regulated through the state-administered NPDES 1200-C permit program. Many construction sites within the City limits are either smaller than one acre or the stormwater discharges do not drain to a surface water. As part of the Bend Code Title 16 Stormwater Ordinance, approved grading plans are required for all development activities that are adding 5,000 square feet (about the area of a basketball court) or more of impervious surface or one or more UICs. Additionally, the Bend Code Title 16 Performance Standards require that sediment must be prevented from reaching the storm drain system for all construction sites regardless of size. In these cases, sediment is treated as an illicit discharge.

HIGHLIGHTS

- The City sponsored a Certified Erosion and Sediment Control Lead Training, the second portion of which was held in early FY2020-21.
- The City conducted a construction site erosion and sediment control program including plan review, site inspections, education, and enforcement. In November-December 2021, staff began implementation of the City View system for tracking permitting, plan review, and erosion and sediment control permits and inspections.
- Staff conducted 505 Erosion and Sediment Control (ESC) inspections and provided educational support at 36 pre-construction meetings.
- Compliance was achieved by issuing 79 verbal warnings, three written warnings, two Notice of Violation letters, and two Stop Work Orders (SWO). One of the SWOs resulted in a Voluntary Compliance Agreement due to long-term compliance issues with the property in question.

TASKS COMPLETED

The following section discusses by task the compliance status, tasks completed, and effectiveness.

Evaluate and Update Regulatory Authority and Procedures and Implement the Stormwater Regulations (MS4 and UIC)

DESCRIPTION

ISWMP (2006) Task VI-1.

Evaluate existing legal authority in Permit Year 1. If necessary, the ordinance, or other regulatory mechanism and procedures will be updated and adopted in the second permit year.

ISWMP 2022, BMP VI-1.

Implement the illicit discharge, erosion and sediment control and pollution prevention sections of Bend Code Title 16 and the Standards and Specifications.

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

The Stormwater Compliance Technician continues to work with city inspectors, engineers, contractors, and developers to implement Bend Code Title 16 (January 2012). The Technician continues to be responsible for educating, inspecting, regulating, and enforcing construction site stormwater ESC compliance.

In FY2019-20, the City began a routine review of the Design Standards, Construction Specifications, and the Development Codes, however, due to COVID-19 updates to the design standards and specifications were delayed and are scheduled to be considered next fiscal year. Work continued in FY2020-21 and is scheduled to be completed in mid-year FY2021-22. Some clarifications to construction site activity related standards and design drawings for improved effectiveness are anticipated.

Stormwater staff implemented the Erosion and Sediment Control (ESC) Compliance Standard Operating Procedure (see Appendix E of the FY2019-20 annual report). The standard operating procedure outlines an equitable approach for addressing ESC inspections and enforcement needs related to implementation of City of Bend (COB) Code Title 16 and COB Standard and Specifications.

In the middle of this fiscal year, the City unveiled its new permitting and code enforcement software, CityView. This new system replaced the E-Plans permitting system and provided an online portal for the public to submit code enforcement complaints. CityView offers a central location for project proponents to upload documentation, schedule inspections, and track the progress of their permit(s). For code enforcement complaints, the public now can upload documentation and track the progress of their complaint(s). Staff attended several training courses to learn how to use the software. Staff utilized CityView to review ESC plans, complete site inspections, and coordinate code enforcement activities related to construction site stormwater. Staff also met as needed to understand and refine processes and procedures to improve the effectiveness of the software to meet municipal and customer needs.

EFFECTIVENESS

City staff have worked to upgrade the City's software systems including permitting, and the CityView program is now in use. The CityView system has assisted staff by providing additional notification of permit review and issuance for projects requiring erosion and sediment control inspections. This update to the City's permitting software has also improved oversight of construction site stormwater activities by adding clarity to inspection and enforcement processes.

New and redeveloped properties continue to be inspected for erosion and sediment controls and proper housekeeping. The Stormwater Compliance Technician continues to be responsible for educating, inspecting, regulating, and enforcing construction site stormwater ESC compliance.

FY2021-22 PLANS

The City plans to make periodic modifications to the ESC Compliance Standard Operating Procedure as needed, including incorporating CityView changes. Stormwater staff plans to continue to incorporate CityView processes to improve ESC compliance. Updates to the Standards and Specifications are expected to be completed mid fiscal year. In FY2021-22, the City will review the new NPDES MS4 permit and evaluate the needed modifications to regulatory processes and strategies to implement the new permit.

Construction Site Educational Materials (MS4 and UIC)

DESCRIPTION

ISWMP (2006) Task VI-2.

Develop or acquire public education materials in Year 1 of the permit period. The materials will be distributed to construction site operators in Year 2 and 3 of the permit period.

The plan sheet will be developed in Year 4, and will be distributed and incorporated into standard operating procedures in Year 5

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

In FY2020-21, the City provided educational materials during and, in follow up to, ESC inspections performed on construction sites. The City continued to make available on its website the “Single Family Example Drainage Plan” to project proponents to help with implementation of Bend Code Title 16, along with a “Suggested BMPs for Single Family Construction Sites—Example Erosion and Sediment Control Plan.” The City has several construction site references on its website: www.bendoregon.gov/cleanwaterworks.

References include:

• Single Family Example Drainage Plan

• Suggested BMPs for Single Family Construction Sites—Example Erosion and Sediment Control Plan

• Sediment Fact Sheet for Businesses

• Maintain Construction Site BMPs Poster

• Erosion and Sediment Control Fact Sheet

• Grading Clearing & Erosion Permit Flow Chart

• Drainage Submittal Flow Chart

• ACWA Construction Site Stormwater Guide

- Sample Erosion and Sediment Control Plan - Single Family Residential
- Stormwater Maintenance Agreement
- Central Oregon Stormwater Manual
- Construction Stormwater Pollution Prevention (NPDES Webcasts)
- Construction Stormwater Pollution Prevention Plan Development.

EFFECTIVENESS

The City has met the schedules for this task in addition to providing additional education materials. The City is effectively working with DEQ to explore confusion and ensure its map for areas outside of state construction permit 1200C areas is updated as necessary to help increase understanding and efficiency in directing appropriate projects to the potential need for the state permit.

FY2021-22 PLANS

The City plans to continue to improve the layout and availability of resources on its website, including working to provide cross references to assist interested parties navigating the Permit Center to quickly obtain helpful information. The City plans to refine its map to help with understanding potentially applicable areas for state 1200C permit compliance, and work with DEQ to host a joint workshop in FY2021-22 to area contractors and staff on erosion and sediment control and proper housekeeping, and ensuring understanding of local and state permit requirements.

Construction Site Inspections and Violation Hotline (MS4 and UIC)

DESCRIPTION

ISWMP (2006) Task VI-3.

Identify a department to monitor the hotline in the third permit year, set up, and publicize the hotline by the fifth permit year.

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

ESC complaints, referrals, and general inquiries were routed to the City's Stormwater Compliance Technician to coordinate case compliance. Case activities included site investigations, re-inspections, follow up correspondence, and enforcement. Details regarding case activities can be found in the Inspection Tracking Logbook attached in Appendix E.

The Stormwater Compliance Technician also performed tasks under project permits to coordinate permit compliance. ESC is required on all City-issued construction permits. Engineering inspectors and the Stormwater Compliance Technician inspected for ESC measures on permits, providing guidance and warnings as needed. All infrastructure projects were visited by an Engineering Inspector and/or the Stormwater Compliance Technician.

Staff-initiated activities on permitted projects included initial inspections, routine inspections, re-inspections, correspondence, and final inspections. Staff noted ESC deficiencies as well as violations while onsite and provided necessary corrections. If progress towards compliance was not documented by staff then enforcement was escalated through coordination with City inspectors and the City's ROW Construction Manager. Long-term compliance deficiencies can be enforced with the issuance of a civil penalty in coordination with the City of Bend legal team. An example Notice of Violation and a Voluntary Compliance Agreement can be found in Appendix E.

EFFECTIVENESS

Both commercial construction activity and single-family home starts have stayed elevated compared to prior years. To meet compliance goals, the Stormwater Compliance Technician and Engineering/Building Inspectors provided verbal and written education, warnings, and enforcement measures to meet construction site stormwater management goals. The Stormwater Compliance Technician can issue a Stop Work Order until the problem is remedied, which prevents a project from progressing. This procedure proved to be an effective way to encourage contractors to repair ESC deficiencies in a timely manner.

With a continued high construction activity workload, the Stormwater Compliance Technician continues to devote a focus on construction site ESC inspections, therefore increasing compliance effectiveness and helping with complaint response. The Stormwater Compliance Technician along with other Utility staff conducted 505 ESC inspections and provided

educational support at 36 pre-construction meetings, a much higher number than in previous years. Compliance was achieved by providing education and pre-construction meetings, issuing 79 verbal warnings, three written warnings, two Notice of Violation letters, and two Stop Work Orders. These events were recorded in the Inspection Tracking Log Book (see Appendix E).

FY2021-22 PLANS

The City plans to continue to refine processes through CityView. The ESC Compliance Standard Operating Procedure will be updated as needed to better guide ESC inspection procedures, coordination with City departments, and escalation of enforcement.

Construction Site Education (MS4 and UIC)

DESCRIPTION

ISWMP (2006) Task VI-4.

The Stormwater Action Team (SWAT), with input for the Public Advisory Committee (PAC), will determine the best way to set up an education program for staff and the public. Provide education and implementation materials to planning and engineering staff. Provide education and implementation materials to inspectors. Provide education and implementation materials to construction industry personnel.

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

In June 2020, the City of Bend Utility Department began hosting a virtual Certified Erosion and Sediment Control Lead (CESCL) Training geared towards construction contractors, engineers, and developers. The second part of the two-part training was completed in FY2020-21. The class had 25 sign-ups and attendees. The City contracted with K2 Environmental LLC (Limited Liability Company) to organize the training, and registration. The City had planned to charge a small fee and host both the full training and a reissuance training, but with Covid-19 challenges, the City decided to host just the full training for free. Staff had been hopeful to have the second part of the training in person, but given new Covid-19 spread concerns

approval was gained to have the second day training online as well. Given these efforts, there was a delay between the two days and not all who originally signed up could attend. But a substantial number did attend at least one of the days, including some outside of Central Oregon given the online format.

City staff provided education to the development community during construction site ESC inspections. Educational materials were also provided, as necessary, in follow up to inspections.

EFFECTIVENESS

Although COVID-19 presented some unique challenges pertaining to education, the City was successful in attending and providing virtual education opportunities to meet its biennial training requirements for this task. The CESCL Training was evaluated by 9 of the 25 total attendees. Overall, the training was well received by those that attended.

A copy of the CESCL announcement, workshop evaluation summary, and attendee list have been included in Appendix E.

The City's LEAP (Leading Effective Applications and Processes) efforts came to fruition in FY2021-22. These involve implementing CityView software that will provide better tracking, and an improved customer service portal thus increasing efficiency and customer experience.

FY2021-22 PLANS

The City plans to develop more targeted, audience-specific trainings and educational events to increase knowledge and awareness of proper use and installation of Best Management Practices (BMPs) to manage stormwater on construction sites. In FY2021-22, the City plans to co-host a Central Oregon specific training with DEQ staff participation.

Performance Standards and Implement Performance Standards Related to Construction Site Controls (MS4 and UIC)

DESCRIPTION

ISWMP (2006) Task VI-6.

Prepare draft performance standards starting in Year 3 to obtain internal review, and finishing in Year 4 for inclusion in the permit package.

ISWMP 2022, BMP VI-2.

Implemented the performance standards per the ISWMP 2022 schedule in Appendix B.

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

Performance standards have been completed and incorporated into the ISWMP 2022. The ISWMP 2022 (November 2012) was approved by DEQ as part of the WPCF-UIC permit issuance to begin in FY2013-14 and was considered by the DEQ as part of the NPDES permit reissuance, expected in FY2021-22. A summary of the New Development, Redevelopment, and Construction Site Controls Performance Standards are available below and the City works to fully implement these.

Development Plan Review and Permitting.

- "Obtain adequate legal authority to implement stormwater quality control measures for development, redevelopment, and construction activities as part of the development plan review and approval process." The City has Bend Code Title 16 that provides appropriate legal authority to meet this performance standard.
- "Require developers and owner/builders of projects that include permanent stormwater facilities to ensure ongoing operation and maintenance of the facilities, as part of project approval documents."
- "Require developers and owner/builders of projects with potential for significant erosion and planned construction activity to plan, prepare for and implement effective erosion and sediment controls."
- "Ensure municipal capital improvement projects also include stormwater quality control measures during and after construction, as appropriate for each project."
- "Inform developers and owner/builders of projects that disturb a land area of one acre or more in an area that drains to a surface water body of the state requirement to obtain coverage under the DEQ 1200C permit."
- "Require developers and owner/builders to control stormwater quality impacts of their projects by using appropriate BMPs. Encourage projects with significant stormwater pollution potential to mitigate impacts through site planning or design practices and/or post construction controls. For such projects, the developer and owner/builder will be encouraged to avoid, minimize, and mitigate, in that order, the potential adverse impacts to water quality."
- "Review and refine, if necessary, the stormwater ordinance requiring site planning or design practices and/or post construction controls to protect water quality."

- "Review, and as appropriate, incorporate policies and implementation measures into the General Plan and Development Code to help preserve and enhance water quality and protect sensitive areas. General Plan and Development Code amendments will be adopted periodically as part of the City's ongoing General Plan and Development Code updates."

Erosion and Sediment Control.

- "Maintain an erosion and sediment control program that includes requirements for minimum performance standards, sufficient enforcement authority, training and tools for inspectors, and information for developers and contractors."
- "As a condition for issuing a grading permit, require developers and owner/builders to prepare, submit for review and approval, and implement effective erosion and sediment control measures as per City regulations."

Construction Inspection.

- "For development projects with significant erosion potential, require that erosion and sediment control measures are implemented through a construction inspection process. Measures will be implemented in accordance with local ordinances and project conditions of approval, including the approved erosion and sediment control plan. Measures will also be maintained as needed during construction."
- "Through a construction inspection process, require that construction contractors properly store, use, and dispose of construction materials, chemicals, and wastes from construction sites and prevent illicit discharges to the storm drains and watercourses."
- "As part of normal inspections, municipal inspectors will review construction sites for adequacy of stormwater quality control measures. The municipal inspectors will prioritize assistance and guidance to onsite inspectors based on the following criteria:

  a. Project's potential impact on stormwater quality;

  b. Size of the project;

  c. Site topography and soil characteristics;

  d. Season in which the construction phase occurs; and

  e. "Nature of the construction activity."
- "Require that each active construction site either be stabilized or have supplies and roll-out plans for immediate stabilization to be deployed prior to a major storm to minimize erosion and discharges of sediment from disturbed areas. As part of normal inspections, municipal inspectors will review to make sure these requirements are being met."
- "Review the inspection of construction sites with erosion and sediment controls following complaints or reports of sediment or pollutants being discharged in the public right of way."

Education and Outreach.

- "Distribute appropriate educational and training materials to city staff, contractors, construction site operators, developers, and owner/builders such as:

  a. Construction BMPs including erosion and sediment controls;

b. Available guidance on the DEQ 1200C permit, if applicable;

c. Site planning or design measures and post construction controls; and

d. Information provided by DEQ staff regarding State and Federal permit and approval requirements for related project activities.

Distribute this information and guidance materials to developers and owner/builders early in the application or design review process, or have available on the City's website as appropriate for the type of project."

- "Train, at least biennially, appropriate construction inspection staff on inspection procedures, documentation, and enforcement related to stormwater pollution prevention."
- "Train, at least biennially, staff from planning, building, and public works staff on planning procedures, policies, design guidelines, and BMPs for stormwater pollution prevention and control."
- "Distribute appropriate educational and outreach materials provided by the DEQ to those utility contractors (water supply, cable, phone, electrical, etc.) seeking encroachment and/or grading permits from the municipality."

EFFECTIVENESS

The City's implementation of the performance standards is in full compliance with ISWMP 2022. The City will review the performance standards again for the next Integrated Stormwater Management Plan when the upcoming NPDES permit conditions are finalized.

FY2021-22 PLANS

The City plans in the next iteration of the ISWMP to separate out the construction site performance standards from the post construction performance standards for easier reporting.

ENFORCEMENT ACTIONS

The City can provide education, warnings, red tags (stop work orders), and monetary citations to violators. Most often, the Stormwater Compliance Technician and Building/Engineering inspectors work to educate as part of standard operating procedure and this collaborative approach quickly resolves any potential issues. In FY2020-21, two formal Notice of Violation letters were issued, two Stop Work Orders were posted, and the City entered into a Voluntary Compliance Agreement. There were several opportunities where education and warnings resulted in compliance without the need for escalating enforcement. These events were recorded in the Inspection Tracking Log Book (see Table 6.1 and Appendix E).

SUMMARY OF EFFECTIVENESS

The City has successfully implemented the tasks in this component. Staff have continued to focus on education and coordination efforts, both internally and externally to ensure effective implementation of Bend Code Title 16, the Standards and Specifications, and the Central Oregon Stormwater Manual. The City has improved the program this year with the addition of the CityView permitting software by increasing notification of projects requiring ESC inspections. The City has continued to integrate the Stormwater Compliance Technician at all levels to handle ESC compliance tasks along with inspection needs. The adoption of Bend Code Title 16 provides adequate enforcement authority. Feedback from trainings is used to refine effectiveness and selection of future trainings. The City develops and distributes new education materials as the needs present themselves, and is working towards improving enforcement staffing. In FY2020-21, Utility staff completed 505 construction site Erosion and Sediment Control Inspections, attended 36 preconstruction meetings, issued two formal Notice of Violation (NOV) letters, and coordinated two Stop Work Orders (SWO) up from 213 construction site Erosion and Sediment Control Inspections, 27 preconstruction meetings, and one formal notice of violation letter conducted in FY2019-20. A summary of the enforcement actions taken each fiscal year since 2016 can be found below in Table 6.1. Of the 128 active construction sites inspected in FY2020-21, 98% were able to come into compliance without resorting to a SWO or NOV. One SWO resulted in the City entering into a Voluntary Compliance Agreement due to long term compliance issues that had not been resolved.

TABLES AND FIGURES

Table 6.1 Enforcement Action Summary

Fiscal Year	# of Active Construction Sites Inspected	# of ESC Inspections	# of Pre-Construction Meetings Attended	# of Verbal Warnings	# of Stop-Work Orders	# of Notice of Violations issued
FY2016-17	43	106	20	53	0	1
FY2017-18	90	223	36	54	1	1
FY2018-19	69	248	35	64	0	1
FY2019-20	53	213	27	70	0	1
FY2020-21	128	504	36	83	2	2

7.0 Post-Construction Stormwater Management and Redevelopment

The objective of the Post-construction Stormwater Management in New Development and Redevelopment chapter is to minimize the discharge of pollutants in stormwater from new developments and redevelopments within the City limits.

HIGHLIGHTS

- Completed design and began construction of the Newport Corridor project, within the City's MS4 area, to adequately size and repair infrastructure around South Awbrey Butte to the river in a manner that reduces flows and properly treats stormwater using UICs, planters, and other bioretention and treatment. City engineering staff continued to host public meetings and send regular written project updates to the interested public.
- Completed work on time and on budget of the Infiltration Study geotechnical update to incorporate data collected since and to increase understanding since the initial infiltration study was completed in 2006.
- Continued working towards providing flexibility to allow mixing of private and public stormwater within a single subdivision so as not to impact water quality given density needs and height restrictions. Refined scopes of work and ensured budget to help implement measures providing technical support to these efforts, to be implemented in FY2021-22.
- Performed inspections on City-owned green stormwater infrastructure. In total, 113 facilities were inspected under the O&M verification program in FY2020-21.
- City staff hosted a series of five webinars in March 2021, for both staff and the public entitled "Watershed-wise Landscaping."

TASKS COMPLETED

The following section discusses by task the compliance status, tasks completed, and effectiveness.

Participate in Regional Stormwater Control Manual and Tailor to Bend and Implement the Stormwater Regulations (MS4 and UIC)

DESCRIPTION

ISWMP (2006) Task VII-1.

In Year 1 through 2, City staff will review the draft regional manual sections pertaining to post construction controls and provide comments as requested. In Years 2 and 3, City staff will

tailor necessary portions of the manual to the specifics within Bend and distribute via posting the information to the website and providing to planning, engineering, and inspection departments for distribution. Implementation will begin in Year 3 through Year 5 and continue ongoing.

ISWMP 2022, BMP VII-1.

Continue to implement the regulations related to post-construction controls of Bend Code Title 16 and the City Standards and Specifications

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

The Central Oregon Stormwater Manual (2010) (COSM) has been adopted as part of Bend Code Title 16 and the City's Standards and Specifications. Links to the COSM are available on the City's website https://coic2.org/community-development/water-resources/.

The City continues to implement the Newport Corridor project, a main goal of which is to improve stormwater quality to the Deschutes River, meeting standards and specifications for drainage. The stormwater elements include the installation of 31 planters, 12 water quality structures, 7 drywells with 5 sediment basins serving for spill control pretreatment, 25 curb inlets, and 15 catch basins. The project is requiring the removal of 87 trees for construction safety and right-of-way concerns given a 60-foot right-of-way with sidewalk goals, with 39 new trees being replanted.

The City continues implementation efforts of both the Standards and Specifications and the Bend Code Title 16. Additionally, City stormwater staff continues to participate in the design team to address the stormwater runoff for various projects. Staff continued to provide input on other CIP and internal maintenance projects as well. Utility engineers are managing a water project on the east side of Mirror Pond and are incorporating the addition of two drywells as part of the project to reduce stormwater flows to the river in the area.

The City succeeded in tailoring its preferred post-construction facilities by area and including them in the last Standards and Specifications update.

On the private development side, stormwater and engineering staff have continued to regulate post-construction controls through Bend Code Title 16 and the City Standards and Specifications. Plan review and drainage inspections have been implemented into the private development workflow for the Stormwater Compliance Specialist.

EFFECTIVENESS

Obtaining a DEQ review of the revised COSM (2010) and adopting the manual as part of the City's Standards and Specifications and Bend Code Title 16 helped encourage its widespread use and provided the City enforcement authority to require its use. Other municipalities that have adopted the manual include Deschutes County and the City of Redmond, so it is serving as a regional guide. The COSM may need to be reviewed to consider DEQ's current risk-evaluation on stormwater UICs and new post-construction control requirements coming out of the anticipated NPDES Phase II MS4 permit once finalized.

The City is effective at implementing regulations in Bend Code Title 16 as it pertains to post-construction controls by providing plan review and drainage inspections for private development. In FY2020-21, staff conducted a review and provided improved guidance in the form of a flow chart for trash enclosure source control compliance guidance.

The City continues to implement post construction controls as part of retrofit projects, and was effective in securing budget increases to continue implementing the capital improvement projects outlined in the Stormwater Master Plan, adopted in August 2014. Delays in implementation area result of competing demands.

FY2021-22 PLANS

The City plans to update technical review and start working to address changes in the new NPDES MS4 permit, anticipated to be reissued in Fall 2021.

Operation and Maintenance (MS4 and UIC)

DESCRIPTION

ISWMP (2006) Task VII-2.

In Year 1 City staff will determine responsibility for maintenance of controls by development type, and will begin updating local regulations, ordinances, and guidance to set up a program

requiring operation and maintenance. A tracking program will be set up by Year 2. An O&M verification program that may include inspections of a subset of installed controls will begin in Year 4.

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

City staff has determined that, in general, private developments are required to maintain private stormwater facilities and the City maintains City stormwater infrastructure. Maintenance responsibility for regional controls will be considered on a case-by-case basis. In the past two years, with drainage, density, and development pressures, the City managers and Public Advisory Group are asking for more flexibility to allow private stormwater to be retained within a subdivision through commingled facilities. This requires coordination to develop new processes for tracking, communicating, and ensuring effective operation and maintenance.

City staff has incorporated long-term operation and maintenance considerations within Bend Code Title 16 (See Annual Report FY2011-12 Appendix A), Bend Code Title 16: section 16.15.040). The code requires all new commercial development to submit a signed private maintenance agreement that will be recorded on the title of the property (see Annual Report FY2013-14, Appendix F for an example). In FY2019-20, the City received 33 new maintenance agreements for a total of 205. The Stormwater Program has copies of both private stormwater plans and these private maintenance agreements saved on SharePoint by tax lot number.

For City-owned facilities, field staff use the INFOR asset management software along with GIS mapping to assist with maintenance tracking and facilities asset management. Field staff also continues to conduct a review of public stormwater facilities to determine which need to be improved/replaced as part of their everyday maintenance activities. The City's operations and maintenance field staff inspects the public stormwater facilities such as catch basins, sedimentation utility access holes, drywells, and drill holes and provides maintenance generally yearly and at least biennially for more see Section 8).

With the addition of the Stormwater Compliance Technician, the City has improved its O&M verification program by specifically focusing on the O&M of City-owned green stormwater

infrastructure (i.e., landscaped stormwater facilities). This effort utilizes inspection and reporting sheets (see Task VII.3). This fiscal year, stormwater staff expanded the list of data collected for each facility to include pertinent water use data as well as identification of the party, or group responsible for maintenance. The Stormwater Compliance Technician completed 113 inspections under this expanded effort (see Appendix F for the Inspection Tracking Log). The O&M verification program is tracked on SharePoint.

On the private side, the City continues to conduct project review and electronic record keeping. The City continued efforts to capture new private stormwater facilities into their own database for easier retrieval and data analysis.

EFFECTIVENESS

Acquiring maintenance agreements are useful for implementing Bend Code Title 16. In the future, additional guidance on proper maintenance, considering adding visuals to the maintenance descriptions in the COSM or other guidance, may help improve understanding of proper maintenance, especially with increasing flexibility for comingled drainage designs—staff will work to update the maintenance agreement in the coming year. Preventative maintenance routes have been established in the INFOR system, and are being used to schedule and track routine maintenance operations.

The O&M verification program expanded this fiscal year to include additional data relevant to reaching other City goals and objectives. This has proven to be an efficient way to capture field data. The inspections of public stormwater facilities have been conducted and outstanding maintenance and installation deficiencies have been identified. The findings will help improve future maintenance of installations as program staff share findings with operations and engineering staff.

FY2021-22 PLANS

In FY2021-22, the City plans to focus inspections on private stormwater facilities for property owners enrolled in the credit program. The City plans to continue to also inspect private stormwater facilities as complaints and requests are submitted.

Evaluate and Update Plan Review and Inspection Programs (MS4)

DESCRIPTION

ISWMP (2006) Task VII-3.

Evaluate existing procedures and identify needed changes in Permit Year 1, to make needed changes and draft guidance in Year 2 and to implement the revised programs in Permit Year 3, and continue implementation ongoing.

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

City staff took actions in several areas in FY2020-21.

Inspections. The Stormwater Compliance Specialist has improved inspection documentation of post-construction stormwater controls while also leading the stormwater post-construction control inspection program. In FY2020-21, Stormwater staff participated in warranty inspections of vegetated stormwater facilities, such as the new retention basin at North Star Elementary.

Staff attendance at the in June 2020 and previously has helped provide guidance in training and program development. The Stormwater Compliance Specialist and Stormwater Program Manager have been trained in past years via the Vegetated Private Water Quality Management Training hosted by Clean Water Services and Portland Community College. The Stormwater Compliance Specialist coordinated closely with building and private engineering inspectors.

Plan Review. Additionally, staff conduct plan reviews of CIP projects and private projects through weekly red line meetings. Stormwater program staff have commented on several internal CIP projects as well as private projects to ensure stormwater considerations are being properly met. The Utility review focuses on infrastructure. Additionally, City staff coordinated between Utility, Building, and Private Engineering Divisions to increase understanding of compliance requirements for solid waste source controls. Multiple meetings and development

of an analysis packet that included a flow chart clearly proving a visual pathway for depicting requirements and options was helpful for improving coordination efforts among divisions and the development community.

Private Database. To protect its drinking water and surface water resources, the City of Bend Utility Department continued its pursuit to collect location information for new private stormwater facilities. In the past, the City has also worked to collect existing private facility data. In this effort, location data was referenced from several sources including field crew observations, archived building permits, as-built files, and planning files. These newly created and edited stormwater layers are currently exported once a month into a usable format for the City's map viewer so that it is accessible to and viewable for City stormwater staff. Field verification of digitized building documents would be useful to build over time. Additional facilities continue to be added based on utility/data services staff receiving approved plans to install new stormwater facilities as part of a construction or reconstruction project.

Considerations are needed to continue to build the next steps of the database. Given the current existing gap between all collected facilities and those that are missing from the new database, creative solutions may need to be drawn up to capture the remaining lots; none of these solutions can be handled in the short-term.

Physically archived building files have been properly scanned (digitally archived) for easier, more efficient consumption of documents currently stored solely in a physical paper format by the City of Bend. Historical building and planning permits contain a lot of pertinent information. It is also beneficial to consider that when looking farther back in time through these historical documents, plot layout might not have remained static, meaning stormwater facilities might not have been tracked or adjusted accordingly on these documents.

Staff recognized the need and took a step back from field work to begin reworking the work plan for the next steps of the process, which is to field verify facilities on sites without plans. To start this process, the Stormwater Program Manager took an ASCE course in the fall/winter on managing GIS work. With the Covid-19 pandemic adjustments, budget cutbacks to temporary staff, and staff changes/injuries, FY2020-21 progress continue to be limited, but new staff are interested to help and plan; and data for new projects is being collected

especially given the subdivisions combining private and right-of-way stormwater. Data services and stormwater staff met multiple times in spring 2021 to work through needs and approaches.

EFFECTIVENESS

Inspection and Plan Review. The City focused efforts this year on coordinating with City View technology and interdepartmental communication in continuing to work through implementation of Bend Code Title 16 with respect to fine-tuning inspection and enforcement pathways given the significant reorganizations and changes internally as city growth continues to increase. With the hire of the Stormwater Compliance Specialist in 2017, the City has developed more effective stormwater facility inspection forms along with an inspection tracking spreadsheet and standard operating procedures (see Appendix F in the FY2019-20 annual report). In addition, staff worked towards including the Compliance Specialist for final and warranty inspection acceptance prior to turnover to the utility department for ongoing operations and maintenance including a presentation in FY2020-21 to Engineering and Infrastructure Planning staff meeting on these efforts.

The weekly red line reviews have helped Utility Department staff be more involved in infrastructure plan review and able to provide comments to ensure proper stormwater requirements are met.

Private Database. In recent years, the City has accomplished significant work by reviewing all existing commercial and industrial plans to develop the basis of its new private post-construction control database. Data from new projects continues to be entered. Initial meetings with data services staff have been useful for understanding needs and importance; additional coordination meetings will be effective in continuing to build the database.

FY2021-22 PLANS

The City plans to continue to work towards building the private database in FY2021-22 by sharing and revising a workplan to work in better coordination with the data services division, who have relocated to the Office of Performance Management outside of utilities in the summer 2021.

Post-Construction Control Education (MS4 and UIC)

DESCRIPTION

ISWMP (2006) Task VII-4.

Educate developers, residential do-it-yourselfers and others involved in development and re-development about acceptable stormwater management and operation and maintenance practices. As part of this effort, the City will participate in a regional grant request for Low Impact Development education through coordination with the COIC. Conduct a biennial workshop and make information available on the website.

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

In March 2021, the City provided the following series of interrelated webinars on Watershed-Wise landscaping that incorporated both stormwater pollution prevention, soil health, and water conservation into the education offering:

- Watershed Wise Landscaping, March 4, 2021
- Compost: Building the Soil Sponge, March 11, 2021
- Irrigation & Water Use Efficiency, March 18, 2021
- Garden Design Workshop, March 20, 2021
- Rainwater Capture Workshop, March 25, 2021.

Green Gardens Group was contracted to provide the series and conducted registration. Each online seminar was an hour long except for the Garden Design Workshop, which was 1.5 hours long. Registration was capped by the vendor at 95 for each and several had waiting lists. Materials are available in Appendix F.

The five stormwater facility maintenance factsheets for Drywells, Rain Gardens, Permeable Pavements, Sedimentation Manholes, and Catch Basins are shared with project proponents and facility owners as appropriate, such as during inspections. (See Appendix F of the FY2018-19 for copies of the factsheets).

In addition, staff continues to make available the following outreach guides on its website at bendoregon.gov/stormwaterbmp, and several are available through the Permit Center:

- Better Site Design Walking Tour Booklet and Points to Ponder
- Considering Stormwater at the Conceptual Planning Stage Brochure
- Example Drainage Plan—Single Family Residential (2013)
- Central Oregon Stormwater Manual (2010)
- Oregon Rain Garden Guide
- Central Oregon Plants for Stormwater Facilities (May 2013 update)
- Stormwater Maintenance Agreement
- Links to EPA website low impact development materials

The City helped distribute “The Oregon Rain Garden Guide” and OSU (Oregon State University) Waterwise Gardening in Central Oregon guide (https://catalog.extension.oregonstate.edu/em9136/viewfile) that includes a stormwater management section and supplemental plant list for Central Oregon rain gardens developed in part by PAG members and local experts, providing copies at outreach events (i.e., Deschutes River Cleanup (July 2020). The full color guide includes information specific to Central Oregon.

The City also promotes the City of Bend Waterwise Landscape Guide, which includes the additions of rain gardens and permeable pavement in the infiltration planting plan figure and a two-page spread on stormwater management.

EFFECTIVENESS

City staff successfully surpassed the requirements of this task, and continued to pivot well with the needs for social distancing. The City focused its education efforts on the Watershed wise landscape design series and realized excellent participation.

Incorporating stormwater design considerations into the Water-wise Gardening in Central Oregon Guide (February 2017) and City of Bend Waterwise Landscape Guide helps users consider stormwater drainage and design earlier in the planning process, allowing for more opportunities to affectively address the issues in a sustainable manner. Coordination with water conservation efforts has proven useful and has increased effectiveness.

Having continuing education credits available is an incentive to draw the engineering community to online seminar trainings that provide access to national expertise.

The distribution and availability of our outreach guides has provided a convenient and effective way for the public to access stormwater LID information at will.

FY2021-22 PLANS

Given the number on the waiting list, the City plans to reevaluate running the workshop series again this year if fund savings from other endeavors and collaboration with water conservation team activities and funding makes an extra run doable. City staff plans to provide a Central Oregon Stormwater Manual refresher as well later in the year.

Performance Standards and Implement Performance Standards Related to New Development and Redevelopment Controls (MS4 and UIC)

DESCRIPTION

ISWMP (2006) Task VII-1.

Prepare draft performance standards starting in Year 3 to obtain internal review, and finishing in Year 4 for inclusion in the permit package

ISWMP 2022, BMP VII-1.

Implement the performance standards per the ISWMP 2022 schedule.

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

Performance standards have been completed and incorporated into the ISWMP 2022. The ISWMP 2022 was approved by DEQ as part of the WPCF-UIC permit issuance with implementation. Implementation efforts are included in the Performance Standards implementation status. A summary of the implementation status for the Performance Standards incorporated into ISWMP 2022 and accepted by DEQ under the City's WPCF-UIC permit is included below. The City engages in several performance standards related to post-construction controls. In addition to the performance standards listed below, see also the "Development Plan Review and Permitting" Performance Standards in Section 6.0.

Targeting Inspections to Achieve the Most Benefit.

- *"Develop and update as needed, an operation and maintenance review plan or standard operating procedure (SOP) that describes the following:*

  a. The inspecting divisions/department.

  b. The division/department that will conduct the stormwater follow-up and/or enforcement.

  c. How information and resources will be coordinated among agencies/departments.

  d. Priorities for inspecting stormwater facilities. Identify target businesses, if any, with high potential to discharge pollutants to the municipal storm drains or within wellhead protection areas.

  e. Proper recordkeeping procedures. The O&M review plan or SOP shall be tailored to the amount of staffing and financial resources available given program priorities."

  Engineering PMs/inspectors inspect municipal facilities through construction and warranty. Storm facilities are then brought into the City's Infor database for inspection and ongoing maintenance by Utility operations staff. See also Tasks VII.2 and VII.3.

- *"Educate business owners and operators about stormwater pollution prevention, separate from the inspection program."*

  See Section 3.0 Public Education and Outreach.

- *"Respond to complaints or referrals from others about a facility. The response may include actions such as:*

  a. Interviewing the caller concerning the specific nature of the problem;

  b. Referring the caller to the DEQ staff for compliance questions concerning the State requirements (i.e., 1200 Z permit, etc.).

  c. Referring the caller to another agency if the facility is outside the City's jurisdiction;

  d. Calling the facility and providing appropriate BMP information.

  e. For substantive complaints not covered above, schedule a facility inspection or site visit as soon as possible."

  Complaints are directed to O&M, regulatory for illicit discharge, engineering as appropriate for applicable calls, and to appropriate outside agencies if outside the City's jurisdiction. The City Utilities Department tracks customer service requests through INFOR.

- *"Inspect and distribute appropriate BMP information to businesses per the operation and maintenance review plan priority. Frequency of inspection should be commensurate to the businesses' potential to flood or discharge pollutants to City facilities and available staffing levels."*

  See Task VII-3 and VII.4

- *"Re-evaluate the City's priorities for operation and maintenance of permanent stormwater facilities. Update the operation and maintenance review plan as needed. Coordinate with other city inspectors (e.g., IPP (Industrial Pre-Treatment Program) or fire) to coordinate and minimize the number of inspections per business.)"*

We discuss maintenance agreements as needed per the Stormwater Liaisons and as needed. Our current focus is to fully develop the database of private stormwater facilities, but in instances of spills, etc. staff coordinate closely with IPP, fire, county health, and others as appropriate.

Preparing for Inspections.

- *"Train appropriate City facility inspectors so that each inspector possesses the knowledge and skill necessary to conduct effective stormwater inspections. This includes identifying potential pollutant sources that may be exposed to stormwater runoff and non-stormwater discharges to the storm drains."*

  See Task VII.4.

- *"The appropriate City's inspection staff will be responsible with being knowledgeable about the following:*

  a. Stormwater regulations and requirements, including the City's ordinance and applicable state permits;

  b. Impacts of non-stormwater discharges to the river. surface water and groundwater;

  c. Inspection techniques and procedures;

  d. Follow-up and enforcement procedures; and

  e. Stormwater BMPs.

  The inspectors and managers will obtain periodic training to support inspection activities and to continue to improve program implementation."

  See Task VII.4.

Conducting Inspections.

- *"Inspectors will review the facility layout to locate the storm drain system and/or stormwater drainage path."*

  See BMP tasks above and Appendix F materials. Inspectors have been trained through Clean Water Services training.

- *"Inspectors will review/inspect the following areas if access to the area is safe and drains to a stormwater management facility or area from which stormwater flow may ultimately leave the site.*

  a. Outdoor process/manufacturing areas;

  b. Outdoor material storage areas;

  c. Outdoor waste storage/disposal areas;

  d. Outdoor vehicle and heavy equipment storage and maintenance areas;

  e. Outdoor parking areas and access roads;

  f. Outdoor wash areas;

  g. Surface discharge outlets from rooftop equipment; and

h. Outdoor drainage from indoor areas.

i. The status of onsite stormwater facilities.

These areas will be inspected for 1) their need for maintenance; 2) their potential to discharge pollutants from non-stormwater discharges to public facilities, and 3) pollutant exposure to stormwater."

See BMP tasks above and Appendix F materials. Inspectors have been trained through Clean Water Services training.

- *"Inspectors will notify the Stormwater Program Manager of potential to discharge pollutants from non-stormwater discharges, and pollutant exposure to stormwater from a business."*

  Stormwater inspector meets with Stormwater Program Manager as part of a stormwater team meeting or via one-on-one meetings at least weekly, and such notification items when they arise are discussed.

- *"When a business that impacts stormwater quality is identified, the City 's Stormwater Program Manager will either be responsible for conducting, or delegating, the following:*

  a. Communicate stormwater requirements.

  b. Distribute facility representatives with appropriate stormwater BMP information, educational materials, and inter/intra-agency referrals as needed. Ask the facility representative whether employees have been trained about how to prevent stormwater pollution.

  c. Inform the facility representative of any problems or violations found. A schedule for correcting problems identified during the inspection, and a means for verifying their implementation will be discussed with the facility representative. This information will be noted and tracked.

  d. Document and track inspection activities, follow-up, and enforcement activities for reporting to the DEQ in annual reports."

Achieving Facility Compliance.

- *"If a problem is identified during an inspection, the Stormwater Program Manager will either be responsible for performing, or delegating a follow-up site visit or initiating a self-certification process where the facility representative certifies in writing that the problem has been remedied within the time specified by the Stormwater Program Manager."*

  See BMP tasks above and Appendix F materials. Inspectors have been trained through Clean Water Services training.

- *"Begin enforcement procedures, if appropriate, as per the enforcement authorities as set forth in the City's municipal ordinances."*

  See BMP tasks above and Appendix F materials. Inspectors have been trained through Clean Water Services training.

EFFECTIVENESS

The City has been effective in implementing the performance standards.

FY2021-22 PLANS

The City plans to review the performance standards and incorporate the activities into the next integrated stormwater management plan to be drafted in FY2021-22.

SUMMARY OF EFFECTIVENESS

The City is implementing the tasks in this section. Overall, City staff participated in attending and providing multiple workshops and presentations related to post-construction controls. The City has updated and actively implemented the development rules and legal authority to require and maintain adequate post-construction controls. The Stormwater Compliance Specialist has continued to perform maintenance verification inspections of post-construction stormwater facilities. The City is implementing the performance standards and is meeting or exceeding the approved schedule. Additionally, the City has been successful in securing funding for capital improvement projects described in the Stormwater Master Plan. While the City has reviewed the ISWMP 2022 this year, the City is hesitant to update the plan until the City secures its final NPDES MS4 Phase II Permit; however, the City seeks to continually improve.

In FY 2020-21, staff started but did not complete work on updating an alternative maintenance agreement and other procedures to allow for increasing flexibility to different approaches to comingle stormwater to increase flexible approaches such as regional controls keeping the 100-year storm within a subdivision; providing recommended improvements to standards and specifications updates; working to complete technical guidance on permeable pavements; and working together with Data Services to improve the processes for collecting data for and updating the private control database. Staff did make progress and will continue efforts in FY2021-22. An updated maintenance agreement is expected by the end of 2021; a scope of work has been drafted and a contractor is onboard to help provide technical guidance in the biennium; standards and specifications updates are expected to be completed by December 2021.

8.0 Municipal Operations and Maintenance

The objective of this component is to maximize the removal of pollutants during routine maintenance and minimize the discharge of pollutants to watercourses and injection systems. Routine maintenance activities include street sweeping, inspections and cleaning of storm drainage facilities and litter control. The City public stormwater system as of June 2021 has 5,522 drywells, 965 drill holes, 4 drain fields, 242 swales, and 11,126 catch basins in addition to the over 70.6 miles of storm pipe, mostly connection pipes between catch basins, sediment maintenance holes, and underground injection controls. This component also includes reviewing corporation yard practices and making recommendations to improve the quality of stormwater runoff from these facilities.

HIGHLIGHTS

- The street sweeping program collected 6,887 cubic yards of material.
- Stormwater Operations maintained: 7,083 catch basins, 3,418 UICs (dry wells and drill holes), 827 Sediment Manholes removing 400 yards of material.
- Installed the final drywell inserts at the Bend Airport, finishing the drywell portion of the multi-year UIC retrofit effort.
- Installed the first drill hole insert, starting the multi-year drill hole portion of the UIC retrofit effort.

TASKS COMPLETED

The following section discusses by task the compliance status, tasks completed, and effectiveness.

Street Sweeping (MS4 and UIC) and Parking Lot Sweeping (MS4 and UIC)

DESCRIPTION

ISWMP (2006) Task VIII-1.

Track the amount of materials collected via street sweeping activities, monitoring the build-up of litter and sediment between sweepings in Permit Years 2 and 3 and make a schedule recommendation in Permit Year 4. Starting in Permit Year 4, Bend will implement the recommendation. The cleaning plan will include a monitoring component.

ISWMP 2022, BMP VIII-1.

Implement a street sweeping program per the Sweeping Plan and meeting the performance standards per their schedule. Meet the street sweeping performance standards per their schedule. Implement Street Sweeping/Water Main Flushing Coordination Pilot Program.

ISWMP 2022, BMP VIII-2.

Monitor the build-up of litter and sediment between sweepings of Public-owned parking lots in Permit Years 2 and 3 and make a schedule recommendation in Permit Year 4. Starting in Permit Year 4, Bend will implement the recommendation. The cleaning plan will include a monitoring component.

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

The City continues to implement its Sweeping Operations Plan and in FY2019-20 created a stormwater quality specific plan (see Annual Report FY2019-20 Appendix G). The City operates 6 sweepers in total, 3 mechanical brooms and 3 air machines. The Stormwater Utility funds three FTEs sweeper positions. In FY2021-22 the Fleet Manager will continue to work with the IT (Information Technology) department to integrate this new GPS system into the existing call out software.

The City continues to utilize door hangers to quickly notify residents of trees or other obstacles that prevent both sweepers and stormwater crews from accessing the curb line.

In September 2020, City staff performed a pilot project to determine if using WaterSmart software to send out voluntary pre-notifications of sweeping day would help citizens clear the streets for smoother more efficient sweeping (three curb mile car lengths are lost for every car parked on the road). The area chosen included public streets within the area with corner boundaries of 14th & Newport Ave. RB to 14th St & Galveston RB to Skyliner Rd to Lemhi Pass, NW Lemhi Pass to Lemhi NW Crossing RB to Shevlin Park Rd to 14th St Newport RB. The following group messenger was sent to 554 accounts (in an area with approximately 900 total WaterSmart accounts because for the pilot program staff excluded phone accounts) thus, via text (364 accounts) and email (190 accounts): “Street sweepers will be sweeping the

streets in your area to improve cleanliness and protect our stormwater quality. Our efficiency increases threefold for every vehicle off the street that we do not have to drive around. The Stormwater Utility urges you to please help us provide a clean street for you by doing your best to move any vehicles or recreational structures (basketball hoops) off the streets between 9 AM – 12 Noon on Tuesday September 15."

Staff and volunteers took vehicle counts to compare effectiveness (see Table 8.1).

EFFECTIVENESS

This year the City sweeping program collected 6,887 cubic yards of material and traveled 28,492 miles. The sweeping program is now mainly focused on sweeping the streets within the MS4 area multiple times a year given its a high priority area, while still covering the entire City at least once a year. The removal of this material reduces clogging of stormwater facilities and keeps pollutants out of the Deschutes River and away from our underground drinking water aquifers.

Sweeping in the areas that drain to the river continues to be of the highest importance from a stormwater quality perspective because the river is listed for sediment/turbidity. See Figure 8-1 below for a summary of sweeping efforts from FY2010-11 through FY2020-21.

The initial pilot study suggests that a brief text/email notification can potentially result in significant improvements to street sweeper efficiencies in their ability to sweep the curb. The initial results showed a 16% reduction in the number of vehicles on the road in one neighborhood. Additionally, the notification helps educate residents with regards to street sweeping and stormwater quality.

FY2021-22 PLANS

The City plans to continue to support street sweeping efforts with a focus on the MS4 area. In FY2021-22, City staff plan to conduct a routine review of the Sweeping Plan and update, as necessary. The City will continue to look for opportunities to continue the sweeping pre-notifications.

Litter Collection and Material Disposal (MS4)

DESCRIPTION

ISWMP (2006) Task VIII-3.

Establish a Clean Lots/Litter Task Group within Public Works, identify where improved cleaning is needed most and develop cleaning plan and budget. Order additional equipment if necessary.

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

The City continues to provide street-side litter receptacles in the downtown core area that are emptied by the local garbage/recycling company three times per week in the winter and four times per week in the summer. The Downtown Bend Business Association (DBBA) maintains these receptacles with routine cleaning and repair on an as-needed basis per an MOU (Memorandums of Understanding) with the DBBA and the City.

EFFECTIVENESS

The City assists in the collection and disposal of litter in the Downtown area. City stormwater crews routinely inspect stormwater facilities, removing trash and debris. The City also participates in and sponsors the Upper Deschutes Watershed Council's Deschutes River Cleanup event in July of each year that focuses on trash removal.

FY2021-22 PLANS

The City plans to continue to support existing efforts and address any concerns should they arise. The City plans to continue to provide and support volunteer efforts for litter control, including again sponsoring the Upper Deschutes Watershed Council's Deschutes River Cleanup event among other efforts.

Landscape Maintenance Practices (MS4 and UIC)

DESCRIPTION

ISWMP (2006) Task VIII-4.

Establish a Landscaping Task Group within Public Works. Identify opportunities to improve practices and develop landscaping guidance. Host a workshop on stormwater requirements and BMPs (in FY2010-11). Implement improved practices.

ISWMP 2022, BMP VIII-3.

Ensure updated Standards and Specifications are implemented properly. Incorporate at least 5 stormwater surface controls (bioretention, filter strip, etc.) in right of way areas over ISWMP 2022 planning term. Properly maintain.

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

The Stormwater Compliance Specialist completed 113 inspections of landscaped stormwater facilities and noted landscape maintenance items. In coordinating with the Water Conservation Group, the Specialist also began developing an effort to inventory landscaped stormwater facilities to collect additional landscape data during inspections, combining with sprinkler water waste/dry weather flow reduction efforts.

EFFECTIVENESS

The City is continuing to promote and install new stormwater surface controls in the right-of-way via low impact development green infrastructure, especially in areas that drain to the river. At present (June 2021), the City has 242 public landscaped stormwater facilities.

FY2021-22 PLANS

The City plans to continue to construct the Newport Corridor project, currently under development. The stormwater elements on this project include the installation of 31 bioretention planters, 12 water quality structures, 7 drywells with 5 sediment basins serving for spill control pretreatment, 25 curb inlets, and 15 catch basins.

Improved Catch Basin/Storm Drain Facilities Cleaning (MS4 and UIC) and Improve Storm Drain Facilities Cleaning (MS4 and UICs)

DESCRIPTION

ISWMP (2006) Task VIII-5.

Establish a Catch Basin Task Group within Public Works and identify opportunities to improve maintenance practices. Develop improved maintenance procedures and implement those procedures.

ISWMP 2022, BMP VIII-4.

Collect data through maintenance management system. Review and refine maintenance schedule if appropriate. Develop and implement improved maintenance procedures.

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

In FY2020-21, stormwater operations staff maintained 7,083 of 9,214 catch basins, 3,418 of 6,487 UICs (dry wells and drill holes), 827 of 913 sedimentation utility access holes, removing 400 yards of material from the stormwater system. In addition to routine cleaning and inspections, field crews completed 19,696 work orders, including tasks such as catch basin cleaning, catch basin replacements and unplugging clogged drill holes. Field crews continue to use the INFOR Assets Management Program.

Crews also maintain swales, detention basins, and bio-retention facilities quarterly, performing 981 inspections. Additionally, the Utility Department works with a landscape contractor to provide maintenance at multiple swale facilities throughout Bend.

EFFECTIVENESS

The City's Stormwater Maintenance Program is on schedule to meet its routine inspection and cleaning performance standard to inspect and clean as necessary storm drain facilities at least biennially. FY2020-21 efforts resulted in the removal of 400 yards of material from the system. A strong inspection and cleaning program is critical for both stormwater quality as well as for facility longevity to prevent clogging and premature replacement needs; thus, City staff have

an informal goal of working to inspect each facility yearly. Given staffing shortages in part because of the Covid-19 pandemic, not every facility was inspected in FY2020-21 although regulatory compliance was fully maintained. See Figure 8-2 below for a summary of FY2010-11 through FY2020-21 Storm Facility Cleaning data.

FY2021-22 PLANS

The City plans to continue efforts to meet this task in FY2021-22, and will consider long-term staffing needs as part of strategic planning exercises and cost of service analysis planned given the increasing number of facilities to operate and maintain each year. Spill Prevention, Response Materials, and Training (MS4 and UICs).

DESCRIPTION

ISWMP (2006) Task VIII-6.

Identify spill-prone locations and develop and implement improved spill response procedures. Provide spill response kits and training to applicable employees in Permit Year 4 (FY2010-11).

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

Utility and street department staff receive annual training on spill response and clean up. Stormwater staff inspect corporation yards quarterly for spills and maintain spill-kits supplies at both locations.

EFFECTIVENESS

The installation of drywell inserts on high-risk UICs helps reduce spill impacts because staff are given the ability to contain the material in a sump during a spill incident. After a multi-year effort, by FY2020-21, there was only one remaining open top drywell. City staff successfully worked to upgrade this drywell in FY2020-21 to complete the multi-year effort, started in 2014, several years ahead of schedule and under budget. The City now turns to upgrading spill controls on drill holes, a more challenging prospect given the smaller drill hole resides in the low point of the drainage area, but staff were able to secure money to begin the effort in FY2020-21 and install a prototype.

The spill trailer allows staff to quickly block off storm drains and contain spill events. Annual training helps staff understand how to respond to spill situations, when to report a spill and the importance of protecting storm drain from spills.

FY2021-22 PLANS

Staff will continue to provide spill response training for utility staff. Staff will also continue to make sure spill kits and the spill response trailer are well stocked.

Illicit Dumping (MS4 and UICs)

DESCRIPTION

ISWMP (2006) Task VIII-7.

Illicit dumping on City property can cause serious stormwater contamination. This BMP involves identifying locations of, and creating and implementing BMPs for City-controlled property where illicit or illegal dumping is likely to occur and contaminate stormwater runoff

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

Crews sweep the downtown corridor where there is high pedestrian traffic at a more frequent rate than other areas of town. City staff are trained to report illicit discharges to the appropriate stormwater personnel. In FY2020-21 staff reported 9 of the 36 illicit discharges. The City continues to focus outreach efforts on its “Clean Water Works” campaign and storm drain marking program (see the Public Education and Public Participation chapters of the annual report for more information). In July 2020, the City shared the RV fact sheet to help prevent illicit discharges.

EFFECTIVENESS

The City has implemented educational and inspection best management practices to help reduce the number and severity of illicit dumping incidences. RV waste is becoming or may become a larger concern for illicit dumping considerations given a higher proportion of individuals financially constrained who are living in such vehicles if convenient and inexpensive methods to drain tanks are not made readily available.

FY2021-22 PLANS

The City plans to update the IDDE standard operating procedure. CDD will work to update the standard catch basin grate detail for to include a permanent pollution prevention message. City staff will work to resend out the RV education fact sheet and potentially others in FY2021-22.

City-owned Corporation Yards, Industrial and Commercial Facilities (MS4 and UICs)

DESCRIPTION

ISWMP (2006) Task VIII-8.

Develop checklists of BMPs for City-owned commercial and industrial facilities in Year 2 and provide it to facility managers. Initial reviews to determine the status of BMP implementation (e.g., wash areas, loading areas, garbage area, storage areas, food preparation and use areas) would be held in Year 3 and a meeting to discuss areas of improvement and schedules for improvement to be implemented by Year 5.

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

City staff continued to conduct municipal self-audits to improve water quality on corporation yard sites, performing quarterly inspections at both the Boyd Acres and 15th Street. (See Appendix G for an example inspection). Stormwater crews have installed Drywell-Catch Basin Inserts in all the open topped drywells at the Boyd Acres Corporation Yard.

EFFECTIVENESS

City staff continued to effectively conduct municipal self-audits to improve water quality on corporation yard sites, performing quarterly inspections at both the Boyd Acres and 15th Street and quickly following up on any issues needing attention.

FY2021-22 PLANS

The City plans to continue quarterly inspections in FY2021-22.

Detect and Correct Cross-connections and Leaks (MS4)

DESCRIPTION

ISWMP (2006) Task VIII-9.

Post cross-connection and leak detection and prevention information for sewer connections and septic systems on stormwater pollution prevention web site. Establish cross-connection and leak detection prevention team, determine areas within City where septic systems are still in use. Provide education on septic system maintenance, how to determine and address leaks to septic system owners; and encourage hookup to City sewer. Set up repair program for cross-connections and leaks as identified.

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

All new sewer and stormwater lines are CCTV (Closed Circuit Television) to verify no cross connections were made during construction. Dry weather flow inspections were completed on all MS4 outfalls in FY2019-20. The City is actively working to reduce the number of septic systems within the City limits. To date, 157 properties have connected to sewer through the Septic to Sewer Program, and the City has provided public sewer to 335 properties overall so far from various projects from March 2019 to October 1, 2021. These projects include the Southeast Interceptor, Desert Woods and Neighborhood Extension Project, and the Via Sandia, East Lake, and Orion Sewer Project.

EFFECTIVENESS

Implementing CCTV inspections for stormwater together with smoke tests in the sanitary sewer have been effective for ensuring that cross-connections are addressed. Septic to sewer and sanitary sewer connections will help reduce potential for cross connections/contamination to stormwater facilities.

FY2021-22 PLANS

The City will continue the existing CCTV program and continue implementing the Septic to Sewer project.

Promote Commute Alternatives for Municipal Employees and the Public (MS4 and UIC)

DESCRIPTION

ISWMP (2006) Task VIII-10.

Implement a transportation demand management program (TDM) for city staff to encourage alternative modes of transportation and reduce single occupancy vehicle trips. Plan and Implement mass transit service (e.g., bus service (BAT (Bend Area Transit))).

ISWMP 2022, BMP VIII-5.

Implement a Transportation Demand Management Program as separate funding allows city staff to encourage alternative modes of transportation and reduce single occupancy vehicle trips.

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

Due to the ongoing pandemic the TDM incentive program was temporally paused. The City has developed a return to office plan and will continue to offer the TDM program when staff return to the office. The City had started the Bend Area Transit bus service in the mid-aughts. In the intervening years, the bus system has developed to now be operated by Central Oregon Intergovernmental Council with a system now called Cascades East Transit. However, the City is making progress on its Neighborhood Greenways project to promote safe bicycling and pedestrian use. Phase 2 construction was completed in FY2020-21.

EFFECTIVENESS

Due to the ongoing pandemic the TDM incentive program was temporally paused. This resulted in a high percentage of City staff working remotely. Across the City, travel trips per day were well down from normal levels given pandemic response, which equates to a reduction in automobile related pollutants including automotive fluid spills from accidents, heavy metals (brake pad wear, wheel weights), grease and oil, atmospheric deposition of

exhaust particles, microplastics and oxidizer chemicals from tire wear, and sediments from tire tracking.

FY2021-22 PLANS

The City plans to continue the TDM program if/when staff are allowed to fully return to the office and undergo normal operations.

Performance Standards and Implement Performance Standards (MS4 and UIC)

DESCRIPTION

ISWMP (2006) Task VIII-11.

Prepare draft performance standards starting in Year 3 to obtain internal review, and finishing in Year 4 for inclusion in the permit package.

ISWMP 2022, BMP VII-2.

Implemented the performance standards per the ISWMP 2022 schedule in Appendix B.

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

The performance standards in each of the following categories were met.

Storm Drain Facilities Performance Standards.

ROUTINE INSPECTION AND CLEANING

- "When cleaning storm drain inlets and lines, remove the maximum amount of material at the nearest access point to minimize the potential for discharges to watercourses."
- "Inspect and clean as necessary, storm drain facilities (catch basins, UICs, inlets, culverts, and v-ditches) at least biennially. The inspections and needed cleaning will preferably occur prior to winter."

RECORD KEEPING

- "When cleaning storm drain inlets and lines, remove the maximum amount of material at the nearest access point to minimize the potential for discharges to watercourses."

- "Inspect and clean as necessary, storm drain facilities (catch basins, UICs, inlets, culverts, and v-ditches) at least biennially. The inspections and needed cleaning will preferably occur prior to winter."

SPILL RESPONSE (MULTIPLE AGENCIES INVOLVED)

- "If non-hazardous materials are spilled, maintenance staff will contain the spill area immediately and clean when practical to prevent additional release and discharge of pollutants into the storm drain system."
- "Maintenance staff will establish a response/removal procedure for non-hazardous materials after work hours (e.g., per spill plan)."
- "Maintenance staff will coordinate to determine the most appropriate follow-up response (e.g., tracking the source of a spill, identifying product labels, contacting Building and Planning Departments, contacting Stormwater Program Analyst with records and for educational follow-up, sending a clean-up bill to the responsible party, etc.)."
- "Work with local Fire and Police Departments to obtain summaries or copies of spill reports to the Stormwater Manager or his/her designee."
- "Maintenance staff will be aware and up to date on the City's around-the-clock immediate response/removal procedure for hazardous or unknown materials."

DISPOSAL OF MATERIAL

- "Store material removed from storm drainage facilities on a concrete pad or other type of impermeable material away from storm drainage facilities. Drain wastewater to the sanitary sewer or allow it to evaporate, preventing discharges to the storm drain system. Dispose of the material at an appropriate facility. Contact collections utility's staff prior to any new type of discharge in sanitary sewer."

Municipal Maintenance Performance Standards

STREET SWEEPING FREQUENCY

- "Clean streets according to the City's Sweeping Plan."

PROBLEMS ASSOCIATED WITH EFFICIENT STREET CLEANING

- Maintain a consistent sweeping schedule.
- "Obtain copies of garbage and recycling collection schedules and work with water utility personnel to understand schedules of major water line flushing effort to improve coordination (e.g., to prevent conflicts with sweeping on days when collection barrels are in the road or to sweep pollutants off streets prior to major water line flushing)."
- "Take appropriate measures to keep curbed areas clear during street cleaning. Measures may include, but are not limited to, developing, and distributing newsletters and/or other public education materials notifying residents and businesses of street sweeping schedules; setting out temporary or permanent street signs; sending announcements through neighborhood association chairs, or website postings."
- "Provide adequate staff for conveniently reporting trees interfering with street cleaning."

STREET CLEANING OPERATION TO MAXIMIZE POLLUTANT REMOVAL

- "Provide a clean looking street. Conduct tandem driving in areas of heavy load to minimize dirt tracks, trails, or debris to degree practicable given weather and winter road safety measures."
- "Check street cleaning equipment for proper adjustment."
- "Operate street cleaning equipment at the speed specified by the manufacturer."

STREET CLEANING MAINTENANCE TO MAXIMIZE POLLUTANT REMOVAL

- "Regularly inspect and maintain street cleaning equipment."
- "Replace worn components as required to maximize efficiency."

SPILL RESPONSE

- "Report spills observed on streets immediately for quick response by appropriate personnel."
- "Respond to spills in accordance with appropriate response procedures. This includes appropriate measures to block storm drain inlets to prevent and minimize discharges from entering storm drainage facilities in the event of an accident, spill, or emergency fire-fighting activity."

RECORD KEEPING

- "Track miles swept using a broom odometer or by tracking mileage."
- "Track volume or weight of material removed for street cleaning."
- "Report summary of sweeping data in annual report."
- "Document and track areas where spills were reported and coordinate with the City's illicit discharge control field surveys."
- As needed, identify and target areas for: 1) more frequent cleaning throughout the year or just prior to the rainy season; 2) additional efforts to remove vehicles; 3) distribution of public education materials to discourage illegal dumping, etc."

EDUCATION/TRAINING

- "Train annually, municipal staff, as appropriate, responsible for street sweeping to identify and report illicit discharges, and to comply with the other street sweeping performance standards."

Operations and Maintenance of Pump Stations Performance Standards

VISUAL INSPECTIONS

- Revised Per Annual Report FY2017-18: "Visually inspect wet wells or forebays from exterior once per month and inspect wet well interiors or forebays at least once per year for oil spills or other noticeable pollutant discharge."

MAXIMIZE REMOVAL OF POLLUTANTS PRIOR TO DISCHARGE

- "Conduct at least one comprehensive cleaning of wet wells annually to remove sediment prior to the start of the rainy season to minimize discharge of sediment. Clean wet wells with a vactor, if possible."
- "If there is a large potential for pollutant discharge, have a spill kit readily available."
- "If any spill is reported or observed, try to remove the material at the nearest access point. As practical, shut down the pump station if the material may reach it. (A storm event may necessitate operation of the pump station.) As possible, prevent spill from discharging."
- "Store oil absorbent materials in appropriate maintenance vehicles."
- "Track spills upstream to try and locate the source(s) of pollution. Document spill incidents as part of the illicit discharge program. Implement enforcement, as appropriate."

DISPOSAL

- "Dispose of screenings at a landfill, sediment at a location that will not re-enter the storm drain system or receiving waters through erosion, and oil-absorbed materials at a site licensed to accept hazardous waste."

EDUCATION/TRAINING

- "Educate all personnel responsible for maintaining stormwater pump stations about these performance standards. City staff will conduct or provide at least one training session annually to educate pump station personnel about these performance standards and illicit discharge identification and reporting."
- "Conduct drills as part of the training, as appropriate."

Litter Control Performance Standards

SERVICES

- "Pick up litter receptacles located on City-owned property on a frequent enough basis to minimize or prevent spillage."
- "Provide an adequate number of litter receptacles on City-owned property. The City will make every effort to contain litter in receptacles."

EDUCATION AND ENFORCEMENT

- "Encourage participation in and assist with the litter removal activities associated with the Stream Stewardship Day or other similar clean-up event."
- "Encourage public education efforts to include an anti-littering message."

Winter Road Care Performance Standards

WINTER ROAD CARE TO MINIMIZE POLLUTANT CONTRIBUTION

- "City will consider full long-term social costs and environmental/public safety risks when determining winter road care strategies."

- “The City will use alternative materials, such as basalt application, as much as possible and appropriate to minimize the use of chemical deicier (e.g., Mag Chloride), especially in sensitive areas.”
- “Chemical deicers will be properly stored and handled per the chemical storage performance standards.”
- “Any solid deicers used shall be properly covered to prevent contact with stormwater, and be stored outside of the 100-year floodplain.”

SPILL RESPONSE

- “Report spills observed on streets immediately for quick response by appropriate personnel.”
- “Respond to spills in accordance with appropriate response procedures.”

RECORD KEEPING

- “Track amount of product used per month (chemical deicer and basalt sanding).”

EDUCATION/TRAINING

- “Train at least biennially, municipal staff and contractors, as appropriate, responsible for winter road care and chemical deicer (e.g., MgCl2) application to minimize overuse, to vary amounts to reflect site-specific characteristics, such as road width and design, traffic concentration, and proximity to surface waters and sensitive areas; to identify and report illicit discharges, and to comply with the other winter road care performance standards.”

Corporation Yards Performance Standards

GENERAL STANDARDS/TRAINING

- “Prepare and maintain a current Corporation Yard Stormwater Pollution Prevention Plan (SWPPP).”
- “Prepare spill containment kits and store them in locations that have potential for spills (e.g., fueling areas, etc.). Conduct training annually, or as appropriate, on how to use the kits.”
- “Mark or stencil inlets to the storm drainage system with a "protect our waters-no dumping"-type message.”
- “Survey the facility annually for compliance with the performance standards. Any performance standard that has not been implemented will be identified in the annual report, along with a schedule for implementation.”
- “Post educational materials about these performance standards and best management practices in appropriate areas.”
- “For each corporation yard, assign one person the primary responsibility for ensuring that performance standards are implemented and that all persons using the facility are aware of these performance standards.”
- “Describe activities conducted to educate staff regarding the performance standards in the annual report.”

GENERAL HOUSEKEEPING

- "Dispose of often, material removed from streets and storm drainage facilities to eliminate exposure to rainwater and runoff to the storm drain system."
- "Keep chemical storage areas neat and orderly."
- "Inspect the yard at least semiannually to ensure that there are no illicit discharges to the storm drain system. Train employees to report potential pollutant discharges when noticed to ensure pollutant discharges are controlled to the MEP."
- "Sweep the corporation yard at least bimonthly."
- "Stockpile materials away from streets, gutters, storm drain inlets, or water channels when possible."

REFUSE HOLDING AREAS

- "When materials removed from storm drainage facilities are stored on site, store the materials on a concrete pad or other type of impermeable material away from storm drainage facilities. Use covers or other methods as appropriate to prevent blowing away of debris. Drain wastewater to the sanitary sewer, only upon approval from the local sanitary sewer agency, or allow it to evaporate to prevent discharges to the storm drain system. Dispose of the material at an appropriate facility."

AUXILIARY STORAGE AREAS/YARDS

- "Store chemicals in appropriate areas to prevent pollutant discharge to the storm drains."

CHEMICAL STORAGE

- "Keep all containers containing hazardous materials or waste closed when not filling or emptying. Properly label containers using the NFPA or HMIS system (or other appropriate system as approved by City management). Protect the storage area from vandalism."
- "Review the Spill Prevention Plan and/or other appropriate materials (e.g., MSDS) for hazardous materials storage requirements."
- "Store paint and other chemicals in an approved covered containment area. Design the floor so that spilled materials will be contained and easily removed."
- "If any material containers (not limited to hazardous material containers) are stored outside, keep the containers in a contained area that prevents discharge to the storm drain system from spills or exposure to rain. Ensure that all the containers are closed with tight-fitting lids. Design the area to prevent "run-on" of stormwater and runoff of spills."
- "When never-before-used materials are purchased, review the Material Safety Data Sheet (MSDS) to ensure that incompatible materials have the appropriate separation."

CHEMICAL USAGE

- "Ensure that necessary safety equipment and spill containment kits are readily accessible in areas where chemicals are used. Inspect safety equipment (e.g., eye wash) regularly to ensure they are operational."
- "Review MSDSs."

- "Minimize use of chemicals. Use water-based paints and non-toxic chemicals as much as possible."

OIL BASED PAINT

- "Wipe paint out of brushes. Filter and reuse thinners or dispose of as hazardous waste. Dispose of the excess paint as hazardous waste or recycle. If there is too much paint to dry, recycle the paint or dispose of properly."

WATER BASED PAINT

- "Rinse paint out of brushes and discharge rinse water to the sanitary sewer. Recycle or dry excess paint in cans and dispose of the cans in the trash. If there is too much paint to dry, recycle the paint or dispose as hazardous waste."

AUTOMOTIVE FLUIDS

- "Collect used fluids and recycle or dispose at an appropriate facility."

PESTICIDES

- "Refer to the State of Oregon pesticide applicator requirements for pesticide mixing, application, storage and disposal requirements."
- "Consider using integrated pest management methods. Given a choice, use the least toxic pesticides and herbicides that will accomplish the job."
- "Apply pesticides at appropriate times to maximize their effectiveness and minimize their potential to run off."
- "Mix only as much pesticide as needed. Do not mix or load pesticides next to storm drain inlets or watercourses."

SOLVENT/CLEANING SOLUTIONS

- "Properly recycle or dispose of used solvents/chemicals."

WASHING VEHICLES/EQUIPMENT

- "Clean all vehicles/equipment on designated wash areas that discharges washwater to landscaping, the sanitary sewer or recycling system. (Wash areas might be off-site to ensure discharge to the sanitary sewer or recycling system.)"
- "Ensure wash area and sump (if applicable) are large enough so that all washwater drains to the sanitary sewer or recycling system. If necessary, re-grade area or install dikes to convey the washwater."
- "Visually monitor the wash area to make sure it is consistently used."

FUEL DISPENSING AREAS

- "Store spill containment kits nearby. If spill occurs, use dry methods to clean and follow procedures in the Hazardous Materials Business Plan and/or Spill Prevention Plan."
- "Train employees in proper fueling, cleaning, and spill response procedures."
- "Discourage mobile fueling. If mobile equipment is fueled with a mobile fuel truck, have spill kits available and choose an area away from storm drain facilities, sanitary sewer systems, and waterbodies for fueling."

- “Design new fueling area(s) to prevent "run-on" of stormwater and runoff of spills.”
- “Install signs reminding people not to "top off" tanks.”
- “Consider covering fuel-dispensing areas. Prohibit fueling over open ground; ground should be covered by concrete or asphalt protected with a sealant.”

FLEET MAINTENANCE/VEHICLE PARKING AREAS

- “Inspect equipment for leaks on a regular basis. Use drip pans under leaking vehicles. Repair vehicles with significant leaks.”
- “Drain and replace motor oil and other fluids in a covered shop area. If fluids are changed outdoors, designate an area where there are no connections to the storm drains, watercourses, or the sanitary sewer. Select a designated area where spills can be easily cleaned up or drain to a closed pan and return to shop for proper disposal.”
- “Periodically dry sweep the area.”
- “Schedule outdoor repair activities for dry weather, if possible. Prevent repair supplies or work material from entering storm drains or watercourses.”
- “Clean equipment as it comes in for repairs using proper collection and disposal methods when necessary. Inspect equipment as it comes in for routine maintenance and clean if needed.”

Road Repair and Maintenance Performance Standards

GENERAL PRACTICES/TRAINING

- “Schedule excavation and road maintenance activities for dry weather, if feasible.”
- “Equipment repairs and fueling or maintaining vehicles and equipment will be conducted in accordance with the Corporation Yard Performance Standards.”
- “Recycle used motor oil, diesel oil, concrete, broken asphalt, etc. whenever possible.”
- “Distribute educational and outreach materials, as appropriate, to those utility contractors (e.g., water supply, sewer, cable, phone, electrical, etc.) seeking encroachment and/or grading permits from the City.”
- “Train at least biennially municipal staff and contractors conducting road repair and maintenance to comply with these performance standards.”

ASPHALT/CONCRETE REMOVAL

- “After breaking up old pavement, remove and recycle as much as possible to avoid contact with rainfall and stormwater runoff.”
- “Take measures to protect storm drain inlets prior to asphalt breaking or concrete sawing operations (e.g., place sand bags or filtering barrier around inlets). Clean afterwards by sweeping or removing as much material as possible. Do not wash down to the storm drain.”
- “During saw-cutting operations, block or berm around storm drain inlets using sand bags or an equivalent appropriate filter device, or absorbent materials such as pads, pillows, or socks to contain slurry, or wet/dry vacuum the slurry. If slurry enters the storm drain system, remove the material immediately.”

- "Remove saw-cut slurry (e.g., with a shovel or vacuum) before leaving at the end of the day."

PATCHING AND RESURFACING

- "To minimize runoff from patching and resurfacing activities, materials will not be stockpiled in streets, gutter areas, or near storm drain inlets or waterbodies unless these areas are protected (i.e., stockpiled material should be covered to minimize stormwater runoff.)"
- "Cover and seal manholes and storm drain inlets before applying seal coat, slurry seal, etc."
- "Never wash excess material from exposed aggregate concrete or similar treatments into a street or storm drain inlet. Designate an unpaved area for clean-up and proper disposal of excess materials."
- "Use only as much water as necessary for dust control to avoid runoff."
- "Sweep up as much material as possible and dispose of properly."
- "Clean up spills and leaks from other equipment and work site areas using "dry" methods (absorbent materials and/or rags). Properly dispose of absorbent materials and rags. If spills occur on dirt areas, the contaminated soil will be removed properly and on a timely basis."
- "After the job is complete, remove stockpiles (asphalt materials, sand, etc.) and other extra materials as soon as possible."
- "If it rains unexpectedly, take appropriate action to prevent pollution of stormwater runoff (e.g., divert runoff around work areas)."
- "Wash down of streets is only permitted if runoff is controlled or contained, or appropriate best management practices are followed."

SIGNING AND STRIPING

- "Have spill kits or store spill absorbent materials on trucks to be used in the event of a spill."
- "Contain and clean up waste materials and dispose of them properly according to the MSDS."

EQUIPMENT CLEAN-UP/STORAGE

- "Clean sprayers, patch and paving equipment at the end of the day. Use approved collection methods and dispose or recycle waste materials at an approved facility."
- "If stored outdoors, cover sprayers, patch and paving equipment, if they contain pollutants, to prevent rainfall from transporting pollutants to the storm drain system."
- "Flush paint sprayer supply lines at the corporation yard. Use approved collection methods and dispose or recycle waste materials at an approved hazardous waste facility."

EFFECTIVENESS

The City has met its goal of completing the performance standards for inclusion in the ISWMP 2022 and implementation. The City is effectively implementing the performance standards as part of the ISWMP 2022 implementation.

FY2021-22 PLANS

The City plans to review the performance standards in FY2021-22 and incorporate the activities into the new Integrated Stormwater Management Plan that City staff will develop over the course of the year to address the new NPDES MS4 permit requirements and in preparation for the WPCF-UIC permit resubmittal. In reviewing the performance standards, the City will include updates such as the new name for MSDS as “Safety Data Sheets (SDS)” now.

SUMMARY OF EFFECTIVENESS

As demonstrated herein, the City has been able to refine its collection and cleaning programs to be more efficient (see Figures 8-1 through 8-4). The City has also been effective in installing several new landscaped drainage controls in the right-of-way. Crews are maintaining the system, and are making improvements to existing UICs to prevent pollutants from entering the UIC as well as to include emergency shut-off devices in the most high-risk areas to help facilitate quick and safe closure in the case of spills. Outreach and coordination to ensure pollution prevention at corporation yards continues and the City is working to be more effective with its staff trainings by incorporating Target Solutions software. The City permit remains administratively extended. While it has been six years since the City has submitted the ISWMP 2022 the City is hesitant to update this plan until the final permit conditions are known; however, the City is committed to continual improvement. For example, street sweeper crews are working with the Fleet Department to incorporate improved effectiveness using GPS tracking in their sweepers, advanced notification, and working to continue to refine their stormwater sweeping plan for improved water quality.

TABLES AND FIGURES

Table 8.1 Street Sweeping Notification Pilot Program Results

Vehicle/Equipment	Pre-Survey September 14, 2020 (10 AM – 1 PM)	Post-Notification Survey September 28, 2020 (9:10 AM – 10:50 AM)	Difference
Vehicles (including boats or trailers)	250	211	39 (16% reduction)
Basketball Hoops on Street	12	9	3 (25% reduction)

Figure 8-1 Street Sweeping Summary

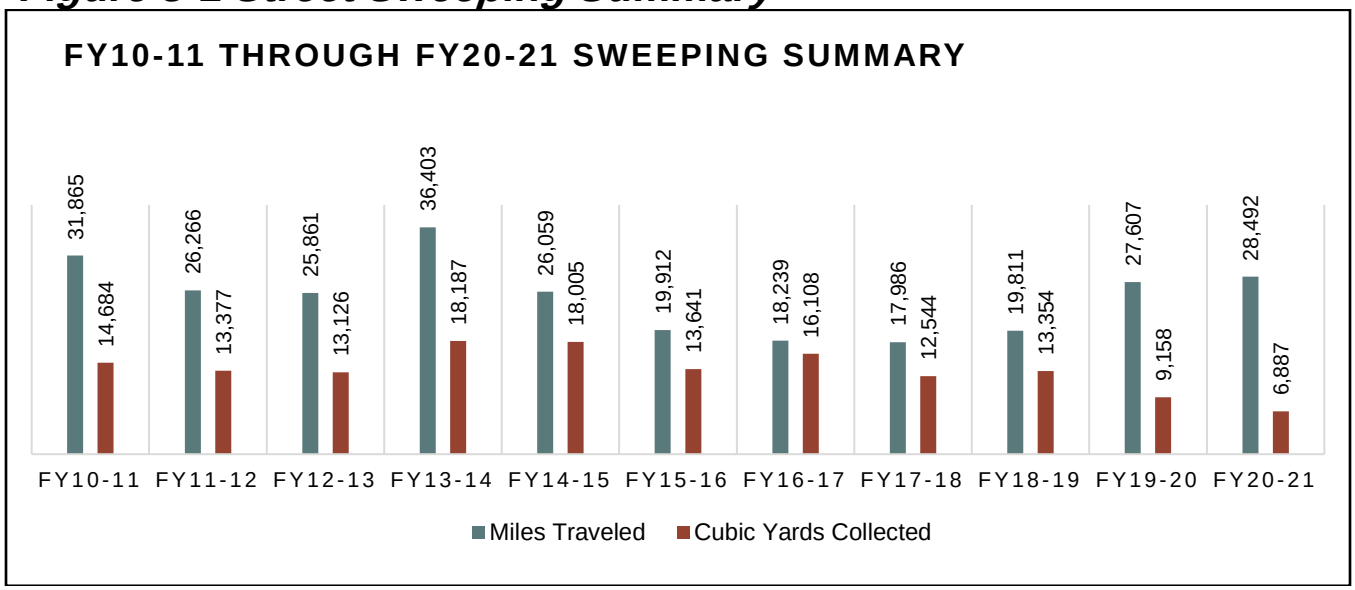


Figure 8-2 Storm Facility Cleaning Summary

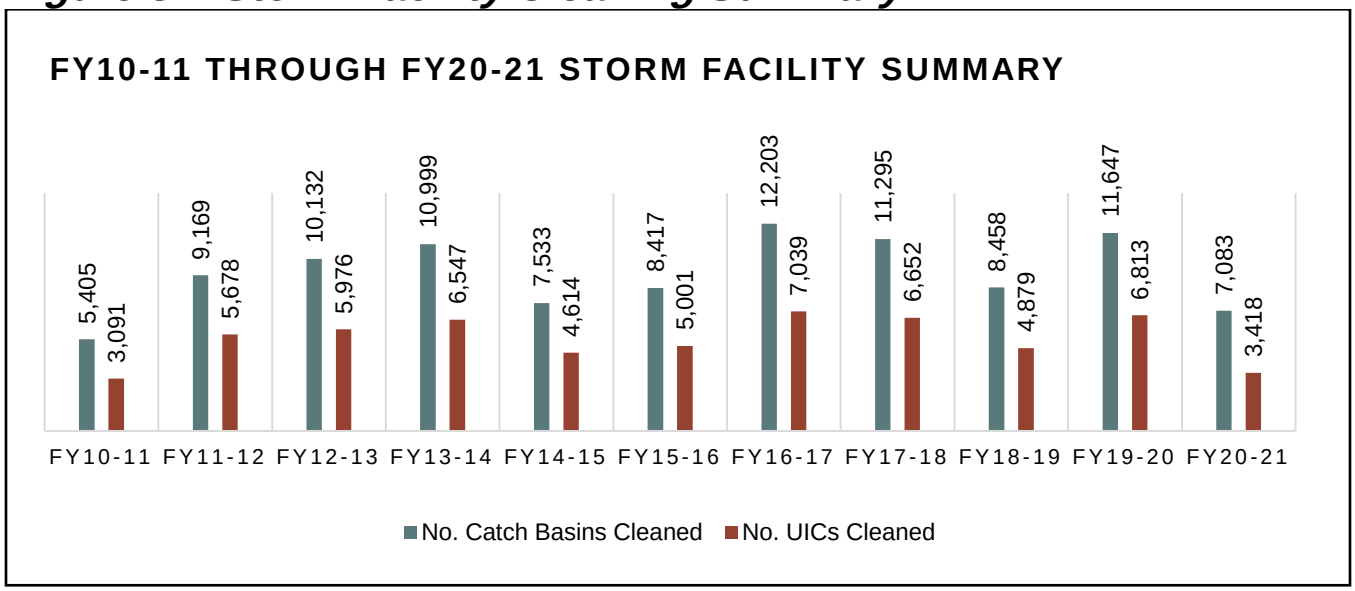


Figure 8-3 FY20-21 Winter Road Care Summary

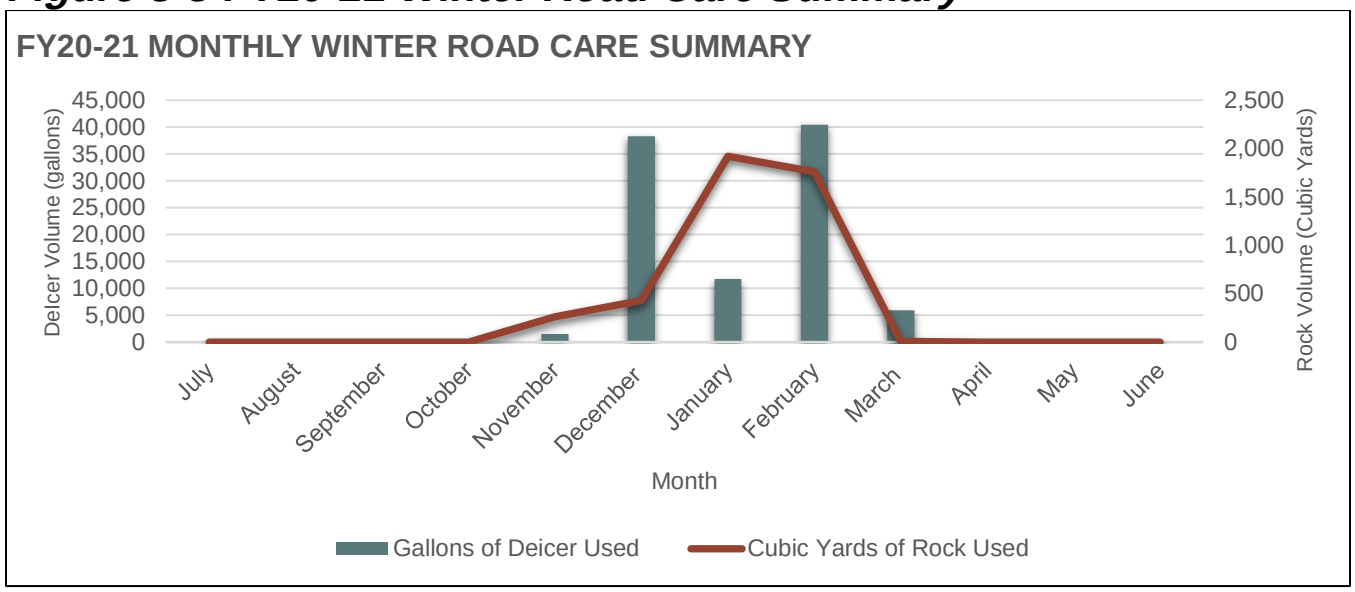
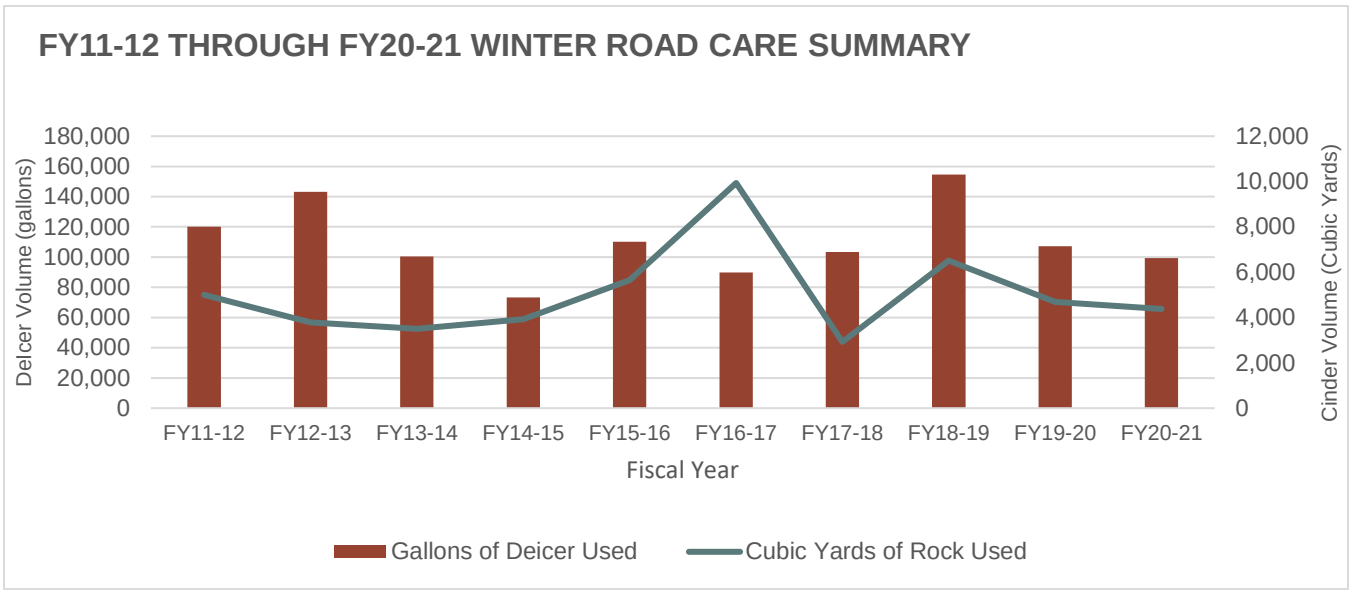


Figure 8-4 Winter Road Care Summary



9.0 Monitoring

As a Phase II NPDES MS4 permittee, the City of Bend is not required to monitor stormwater discharges to the river, but is required to monitor stormwater drainages to UICs as part of its WPCF-UIC permit, received in May 2013.

HIGHLIGHTS

- The City collected two stormwater runoff samples from each of the six representative monitoring locations; all analytes monitored were within compliance levels meeting the City's UIC WPCF permit monitoring requirements.
- The ambient river water quality monitoring program continues to collect and compile data through a new contract entered in FY2019-20 and has completed a summary report.
- City field sampling staff are assisting engineering staff to attempt to collect flow monitoring data on the Newport line.
- The City's lab is NELAP certified for drinking water.

TASKS COMPLETED

The following section discusses by task the compliance status, tasks completed, and effectiveness.

Monitor Stormwater Discharges to the Deschutes River (MS4) and Monitoring the Deschutes River (MS4)

DESCRIPTION

ISWMP (2006) Task IX-1.

Fund and implement the Upper Deschutes Watershed Council monitoring plan. Analyze and report results.

ISWMP 2022, BMP IX-1*.*

Fund and implement a river water monitoring plan update starting in FY2018-19 through FY2022-23. Analyze and report results.

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

In 2004, the City and the Upper Deschutes Watershed Council (UDWC) first began a multi-year monitoring program to gather data on the presence or absence of pollutants of concern in the Deschutes River within the Bend Urban Growth Boundary (Deschutes River Miles 172 to 159). This baseline report was completed in FY2009-10. The City hired ESA to provide a data analysis update in FY2018-19. The City continues to collect and has developed a multi-year contract to continue to review and analyze the data. This baseline data combined with the ongoing monitoring is useful for comparing and monitoring river health over time and helps evaluate effectiveness of pollution prevention efforts keeping in mind that it is an open state system and the epitome of the effectiveness evaluation for the river.

In FY2018-19 the City reviewed and compiled river monitoring data from 2008-2017. That report entitled “City of Bend Ambient River Water Quality Monitoring: Deschutes River 2008-2017” was included in the FY2018-19 annual report, Appendix H.

As part of an ongoing program, the City continues to collect and compile river monitoring data. The City entered a multi-year contract in FY2019-20, and the FY2017-20 compilation and analysis of data has been completed. A copy is being provided separately to DEQ staff along with this annual report.

EFFECTIVENESS

The completion of the multi-year monitoring report in FY2009-10 along with the updated report in FY2018-19 and this fiscal year continue to provide the City with valuable information. These documents help the City understand baseline conditions, water quality trends, and help in analyzing the overarching goal of effectiveness of the MS4 stormwater program, which is seeing improvements in the surface waters through town. The Deschutes River is an open state system with many various influences affecting it including flow control, impoundments, atmospheric, natural geologic, and anthropogenic impacts to it, but the ambient water quality work shows the status of the river through town.

FY2021-22 PLANS

City staff will continue to conduct ambient river water quality monitoring per their monitoring plan including sites throughout the City of Bend. The City plans to continue with the contract with ESA to compile and analyze the data collecting during the year.

Enhanced Drinking Water Well Monitoring (UIC)

DESCRIPTION

ISWMP (2006) Task IX-2.

Form an enhanced Monitoring Task Group and develop an enhanced monitoring plan. Obtain funding for enhanced monitoring and prepare annual monitoring reports (write up in section of NPDES annual report may suffice).

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

As part of the early year efforts, the City prepared a groundwater protectiveness study to model the impacts of contaminants in the vadose zone below UICs. This study along with similar ones conducted throughout the state helped informed the requirements of the WPCF UIC permits. The City continues to monitor drinking water quality as required under the Safe Drinking Water Act. The results of this monitoring are summarized in the City's annual Consumer Confidence / Drinking Water Quality Report, available at https://www.bendoregon.gov/government/departments/utilities/water/water-quality-reports, which includes a section on stormwater pollution prevention efforts.

EFFECTIVENESS

The City is meeting the Safe Drinking Water Act groundwater requirements through its regular well monitoring. The latest Water Master Plan update is expected to be completed in FY2021-22. The City continues to collect data to help determine water quality changes over time.

FY2021-22 PLANS

City staff continue to conduct ambient river water quality monitoring per their monitoring plan including sites throughout the City of Bend. The City plans to continue with the contract with ESA to compile and analyze the data collecting during the year.

Stormwater Monitoring for UICs (UIC)

DESCRIPTION

ISWMP (2006) Task IX-3.

In the early years (FY2007-08 through FY 2011-12), form UIC monitoring task group and develop monitoring Plan. Obtain funding for UIC monitoring. Implement monitoring and prepare semi-annual monitoring reports.

ISWMP 2022, BMP IX-2.

Develop monitoring plan by UIC permit due date and submit to DEQ for review/approval. Sample the stormwater discharge to the underground injection systems at the location specified in the monitoring plan. Comply with the sampling frequency established in the stormwater monitoring plan unless circumstances beyond the City's reasonable control prevent such. Review monitoring results per the action levels in WPCF Permit. Schedule A Table 1. In case of exceedance of individual or geometric mean samples, take corrective actions per WPCF Permit Condition A.3., and A.4. Provide monitoring reports results in annual report. Should any action level exceedance occur, planned, and implemented corrective actions will be reported.

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

The City continues to implement the UIC monitoring plan. With each sample a lab report is released. The City's plan calls for two samples per each of six sites each year. These lab reports from the semi-annual monitoring are summarized and incorporated into the annual report.

The City has developed and implemented a Stormwater Monitoring Plan. The plan is reviewed yearly. A copy of the most recent plan was included in FY2018-19 Annual Report in Appendix H.

Stormwater staff record weather forecasts and monitoring activities in a field monitoring notebook, the notebook has been included in Appendix H.

The City collected two stormwater samples at each of the six representative sample locations identified in the Monitoring Plan; all analytes monitored were within compliance levels (See Appendix H).

EFFECTIVENESS

The City has successfully implemented the stormwater monitoring plan, tracked weather forecasts, and deployed samplers based on those forecasts.

The City collected two sample events from each of the six representative monitoring locations outlined in the monitoring plan. A summary of those results and the lab reports have been included in Appendix H. All analytes monitored were within compliance levels.

FY2021-22 PLANS

City staff plans to continue to monitoring stormwater entering UICs per the monitoring plan. The City is looking into adding or adjusting some location(s) to facilitate additional studies as well.

Implement Performance Standards (MS4 and UIC)

DESCRIPTION

ISWMP (2006) Task IX-4.

Prepare draft performance standards starting in Year 3 to obtain internal review, and finish in Year 4 for inclusion in the permit package.

ISWMP 2022, BMP IX-2.

Implement the performance standards per the ISWMP 2022 schedule in Appendix B.

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

Performance standards have been completed and incorporated into the ISWMP 2022. The publicly reviewed ISWMP 2022 was submitted in December of 2012 and approved by DEQ as part of the WPCF-UIC permit issuance. Monitoring performance standards are being implemented as described below.

Facility Procedures.

- *"Maintain a NELAC accredited facility for stormwater-related laboratory testing."*

  The Oregon Environmental Laboratory Accreditation Program (ORELAP) assesses proficiency testing for laboratories. ORELAP has issued an accreditation certificate for the City of Bend Water Quality Lab for drinking water through August 23, 2021. The stormwater testing conducted by the City is for the UIC regulations per the Safe Drinking Water Act. Although stormwater sampling is separate, the accreditation speaks to the fact that the City maintains proper QA/QC and operational procedures.

Preparing for and Conducting Monitoring Activities.

- *"Maintain sampling plans and quality assurance plans, as appropriate."* Completed.
- *"Conduct appropriate recordkeeping and reporting."* Completed, see Appendix H.

EFFECTIVENESS

The City has successfully implemented the stormwater monitoring plan, tracked weather forecasts, and deployed samplers based on those forecasts.

The City collected two sample events from each of the six representative monitoring locations outlined in the monitoring plan. A summary of those results and the lab reports have been included in Appendix H. All analytes monitored were within compliance levels.

FY2021-22 PLANS

City staff plan to continue to meet the performance standards for monitoring. As part of the update to the integrated stormwater management plan, City staff plan to reexamine the performance standards and draft updates as appropriate.

SUMMARY OF EFFECTIVENESS

The City has successfully developed and implemented a UIC monitoring plan tailored to Central Oregon climate challenges and updates this plan as needed (say, if a site is not receiving enough runoff to take a sample). The City has increased the effectiveness of its stormwater monitoring efforts using automated grab samplers in conjunction with hand grab samples, and through efforts to analyze the data collected.

This year the City met its requirements by collecting two stormwater runoff samples from each of the six representative monitoring locations, all analytes monitored were within compliance levels meeting the City's UIC WPCF permit monitoring requirements.

Analysis of ambient water quality data is becoming more regular given the City has entered a contract to provide report updates, for increased efficiency.

The City's laboratory maintained its National Environmental Laboratory Accreditation Program (NELAP) that was created by the National Environmental Laboratories Accreditation Conference certification for drinking water.

10.0 Drinking Water Protection Areas Investigation, Re-Delineation and Management and Underground Injection Control

This section covers reporting of activities listed under Chapter 10 of the Integrated Stormwater Management Plan 2022 entitled “Underground Injection Controls,” and Chapter 10 of the original ISWMP (2006) entitled “Drinking Water Protection Area (DWPA) Investigation, Delineation and Management.” One of the highest priorities for the City is protecting its drinking water wells from contamination. To do this, the City needs to know where and how it should focus its protection efforts and to meet Underground Injection Control (UIC) requirements that are protective of groundwater. The purpose of this section is to provide the information the City needs to do this, especially with respect to the City’s stormwater underground injection controls (UICs). For this reason, the title of this chapter changes between the Integrated Stormwater Management Plan (2006) and the ISWMP 2022, from “Drinking Water Protection Area Investigation, Delineation and Management,” to “Underground Injection Controls,” respectively. This chapter of the annual report covers both the ISWMP (2006) and ISWMP 2022 respective chapters.

HIGHLIGHTS

- Completed implementing the open-grate drywell retrofit plan, installing a final new drywell insert at the Bend Airport.
- Began work on the more resource intensive open-grate drill hole retrofit effort, installing a first prototype, and modifying design slightly to enhance future constructability efforts. City crews developed a design to include spill control protection and modify the open top drill hole to reduce tampering threat by installing a sediment utility access hole overtop the existing drill hole. Initial funding established for additional installations.
- UIC registration database was prepared and submitted to DEQ with the FY2019-20 annual report.

TASKS COMPLETED

The following section discusses by task the compliance status, tasks completed, and effectiveness.

Drinking Water Protection Area (DWPA) Delineation (UIC)

DESCRIPTION

ISWMP (2006) Task X-1.

Existing DWPAs need to be confirmed or replaced with new DWPAs that are based on the best available information. In FY2007-08 to FY2008-09, investigate the existing drinking water protection area delineations and, if necessary, re-delineate.

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

Task was completed in past years, submitted to OHA, and accepted. This information is available on Bend Oregon Online Mapping (BOOM), our online mapping program. The City continues to improve the well location database. In FY2019-20 staff worked with a consulting firm to review new private well information from the FY2018-19 inspections and update the database. This update was completed in FY2020-21 and the revised private well 500' buffers were added to the City's internal map viewer.

EFFECTIVENESS

The revised delineation allowed for increased accuracy, allowing for improved resolution of the regional groundwater model. While the municipal supply wells and DWPA remain unchanged, the City continues to improve its private well database. The City maintains a layer of private well locations and 500' buffers for all known well locations.

FY2021-22 PLANS

This task has been completed; no plans for specific activities to occur exist in FY2021-22.

Drinking Water Protection Plan (UIC)

DESCRIPTION

ISWMP (2006) Task X-2.

Determine how the City will most effectively manage development activities with the drinking water protection areas and provide education to entities that they are in sensitive areas

through tasks such as identifying contaminant sources within the drinking water protections areas, developing targeted education materials, working to incorporate more stringent development design standards as appropriate, distribution educational materials and reviewing and refining emergency response SOPs and community partnerships for threats within drinking water protection areas. Continue development of a drinking water protection plan. The focus of this task will be to identify real and potential contaminant sources within the DWPAs, designate which are private and which are public sources, and develop and provide targeted educational materials on minimizing potential contaminant sources for those agencies, businesses, and residences within existing DWPAs. Work to incorporate more stringent design guidelines, as appropriate, for new or redevelopment within the DWPAs. Review potential threats and work with appropriate agencies to develop or refine emergency response standard operating procedures and communication pathways as appropriate.

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

In FY2017-18, the City updated its Systemwide Assessment as required in the WPCF UIC permit and submitted it to DEQ. More stringent requirements are required for areas within drinking water protection areas. The Stormwater Program Manager has worked with the Stormwater Coordinators group to develop guidance for targeting treatments by the area (drainage to river, wellhead, etc.). These changes were incorporated in the last standard and specifications update.

EFFECTIVENESS

The City has been effective in performing all required work in this area. In the past, the City prepared an initial source water assessment and the (5 year) update. The source water assessment includes contaminant sources. Staff have also worked with ACWA for UIC education; included drinking water protection area locations in the City's mapping system; and more stringent development standards in Bend Code Title XVI and the Standards and Specifications.

FY2021-22 PLANS

City staff are looking to provide technical assistance for site design and will work to include the targeted treatments by area into the online technical tools by discussing them in the consultant scope of work during the first quarter FY2021-22.

Groundwater Vulnerability Study (UIC)

DESCRIPTION

ISWMP (2006) Task IX-3.

Participate with Central Oregon Intergovernmental Council (COIC) regarding the review and possible pursuit of a United States Geological Survey (USGS) Groundwater Vulnerability Study proposal. The proposal would be for the USGS to assess the aquifer vulnerability and phase would focus on analyzing the intrinsic susceptibility of the aquifer system in the area, including analyzing existing water quality data and examining the geology of the unsaturated zone, and of the age and sources of water to different parts of the system. A second phase of the anticipated proposal would combine the susceptibility knowledge from the first phase with groundwater sampling and analysis for contaminants to better understand the aquifer's vulnerability.

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

The City participated on the COIC work group and working together with the City of Redmond to complete a Groundwater Protectiveness study that informed the requirements of the City's WPCF UIC permit and other similar permits in the Bend area.

EFFECTIVENESS

This task was completed on schedule and has been a useful tool for protecting Bend`s groundwater supply.

FY2021-22 PLANS

This task was completed and no work is anticipated in FY2021-22.

Complete Systemwide Assessment (UIC)

DESCRIPTION

ISWMP (2006) Task X-1.

Collect necessary data to refine Systemwide Assessment per permit requirements/ request. Submit to DEQ.

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

In FY2017-18 the City has reviewed and updated the initial Systemwide Assessment and submitted it to DEQ in June 2018.

EFFECTIVENESS

The City was effective in improving data quality in its update of the Systemwide Assessment that was accepted by DEQ.

FY2021-22 PLANS

City staff are working to prepare another update of the System Assessment to be completed in 2022 in preparation for the WPCF-UIC permit reapplication packet.

UIC Registration (UIC)

DESCRIPTION

ISWMP (2006) Task X-2.

Continue to update and maintain accuracy of the stormwater geodatabase as needed and provide required updates to DEQ of UIC registration database.

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

The City's mapping system is continually updated. The updated UIC registration database is submitting to DEQ along with the annual report (See Appendix I). Table 10.1 provides

information on new UICs installed in FY2020-21. Table 10.2 summarizes decommissioned UICs in FY2020-21. Table 10.3 contains a list of anticipated new UICs in FY2021-22 and beyond. Table 10.4 summarizes anticipated UIC decommissioning in FY2021-22.

EFFECTIVENESS

The database is kept up to date. The registration database in Appendix I includes the most complete information, including updates to UIC data, and information on spill and gross pollutant control best management practices installed.

FY2021-22 PLANS

City staff will review the UIC database in conjunction with the system wide assessment update and make improvement recommendations as needed.

UIC Retrofits, Upgrades, or Decommissioning (UIC)

DESCRIPTION

ISWMP (2006) Task X-3.

Review results of the approved Systemwide Assessment(s) and WPCF-UIC Permit considering the Groundwater Protectiveness Model results to determine if any UICs need to be retrofitted or decommissioned to protect water quality.

If the City deems prudent given the results of subtask 1, the City may engage in upgrades or retrofits to UICs. In cases where decommissioning would be appropriate, the City may decommission a UIC

Commence with UIC retrofits/upgrades and/or decommissioning as needed on a prioritized risk-based schedule through standard procedures or implementation of the Decommission and Improvement Plan, if applicable, on a timeline per permit or plan requirements.

COMPLIANCE STATUS

Fully Compliant.

TASKS COMPLETED

The final open top drywell was retrofitted with a new insert, closing out the project. Stormwater field crews installed the first drill hole retrofit, by installing a sediment utility access hole

overtop the existing drill hole. Table 10.5 provides the current completed status of open top drywell retrofit project, and Table 10.6 provides the start of the open top drill hole retrofit project status.

EFFECTIVENESS

The database is kept up to date. The registration database in Appendix I includes the most complete information, including updates to UIC data, and information on spill and gross pollutant control best management practices installed.

FY2021-22 PLANS

City plans to expand the drill-hole retrofit program. Staff have a list of high priority drill holes to begin with, but each of these have more site-specific considerations than did the drywell retrofit that was addressed with an insert. As a result of this, staff are still working out the specific selection and construction planning details, and have secured $70,000 per year for this biennium to continue work on the effort.

SUMMARY OF EFFECTIVENESS

The City has significantly increased scientific understanding of its system and groundwater aquifer through drinking water protection area delineation and vadose zone analysis, with refining knowledge of the locations and status of its UIC system, and completion of the potential contaminant source identification project and Systemwide Assessment. The City is actively implementing and nearing completion of an open-grate drywell retrofit project and is refining its drainage system as it redevelops to include pretreatment while actively conducting selective outreach and field modifications to be more protective within wellhead protection areas. The inserts are working well at capturing contaminants. Their longevity needs to be further considered. The City is looking to improve open grate drill holes by testing out promising field modification ideas.

TABLES AND FIGURES

Table 10.1 New UIC Installations FY2020-21

UIC Number	Install Date	Location/Project
DDW010868	7/28/2020	Countryside Ph.1
DDW010869	7/28/2020	Countryside Ph.1
DDW010870	7/28/2020	Countryside Ph.1
DDW010871	7/28/2020	Countryside Ph.1
DDW011004	7/28/2020	Countryside Ph.1
DDW011005	7/28/2020	Countryside Ph.1
DDW011006	3/30/2021	Countryside Ph.2
DDW011007	3/30/2021	Countryside Ph.2
DDW010903	9/23/2020	Petrosa Subdivision Ph.2
DDW010904	9/23/2020	Petrosa Subdivision Ph.2
DDW010905	9/23/2020	Petrosa Subdivision Ph.2
DDW010906	9/23/2020	Petrosa Subdivision Ph.2
DDW010907	9/23/2020	Petrosa Subdivision Ph.2
DDW010908	9/23/2020	Petrosa Subdivision Ph.2
DDW010909	9/23/2020	Petrosa Subdivision Ph.2
DDW010910	9/23/2020	Petrosa Subdivision Ph.2
DDW010915	11/6/2020	Murphy Corridor Improvements Ph.5
DDW010916	11/6/2020	Murphy Corridor Improvements Ph.5
DDW010917	11/6/2020	Murphy Corridor Improvements Ph.5
DDW010918	11/6/2020	Murphy Corridor Improvements Ph.5
DDW010919	11/6/2020	Murphy Corridor Improvements Ph.5
DDW010920	11/6/2020	Murphy Corridor Improvements Ph.5
DDW010921	11/6/2020	Murphy Corridor Improvements Ph.5
DDW010922	11/6/2020	Murphy Corridor Improvements Ph.5
DDW010923	11/6/2020	Murphy Corridor Improvements Ph.5
DDW010924	11/6/2020	Murphy Corridor Improvements Ph.5
DDW010925	11/6/2020	Murphy Corridor Improvements Ph.5
DDW010926	11/6/2020	Murphy Corridor Improvements Ph.5
DDW010900	9/2/2020	OSU Cascades - Simpson Ave.
DDW010901	9/2/2020	OSU Cascades - Simpson Ave.
DDW010902	9/2/2020	OSU Cascades - Simpson Ave.
DDW010914	11/3/2020	3rd St. Marketplace
DDW010990	2/18/2021	Columbia/Colorado Roundabout

Table 10.2 Decommissioned UIC Summary FY2020-21

UIC Number	Description
DDH009876	Columbia Roundabouts (1TCSR)
DDH009869	Columbia Roundabouts (1TCSR)
No-Assigned	Found unmarked DH on SW Commerce Columbia Roundabouts

Table 10.3 Anticipated UIC Installation in FY2020-21

UIC Number	Date Added to Database	Location/Project	Comments
DDW010911	10/16/2020	Stillwater Crossing	Under Construction
DDW010912	10/16/2020	Stillwater Crossing	Under Construction
DDW010913	10/16/2020	Stillwater Crossing	Under Construction
DDW010936	11/25/2020	Discovery West Ph. 3	Under Construction
DDW010937	11/25/2020	Discovery West Ph. 3	Under Construction
DDW010938	11/25/2020	Discovery West Ph. 3	Under Construction
DDW010939	11/25/2020	Discovery West Ph. 3	Under Construction
DDW010940	11/25/2020	Discovery West Ph. 3	Under Construction
DDW010941	11/25/2020	Discovery West Ph. 3	Under Construction
DDW010942	11/25/2020	Discovery West Ph. 3	Under Construction
DDW010943	11/25/2020	Discovery West Ph. 3	Under Construction
DDW010944	11/25/2020	Discovery West Ph. 3	Under Construction
DDW010945	11/9/2020	Treeline Ph. 1	Under Construction
DDW010946	11/9/2020	Treeline Ph. 1	Under Construction
DDW010947	11/9/2020	Treeline Ph. 1	Under Construction
DDW010948	11/9/2020	Treeline Ph. 1	Under Construction
DDW010949	11/9/2020	Treeline Ph. 1	Under Construction
DDW010950	11/9/2020	Treeline Ph. 1	Under Construction
DDW010976	9/10/2020	Stone Creek Ph. E-3 & E-4	Under Construction
DDW010977	9/10/2020	Stone Creek Ph. E-3 & E-4	Under Construction
DDW010978	9/10/2020	Stone Creek Ph. E-3 & E-4	Under Construction
DDW010979	9/10/2020	Stone Creek Ph. E-3 & E-4	Under Construction
DDW010980	9/10/2020	Stone Creek Ph. E-3 & E-4	Under Construction
DDW010981	9/10/2020	Stone Creek Ph. E-3 & E-4	Under Construction
DDW010982	9/10/2020	Stone Creek Ph. E-3 & E-4	Under Construction
DDW010983	9/10/2020	Stone Creek Ph. E-3 & E-4	Under Construction
DDW010984	9/10/2020	Stone Creek Ph. E-3 & E-4	Under Construction
DDW010985	9/10/2020	Stone Creek Ph. E-3 & E-4	Under Construction
DDW010986	9/10/2020	Stone Creek Ph. E-3 & E-4	Under Construction
DDW010987	1/28/2021	Farmington Village	Under Construction
DDW010988	1/28/2021	Farmington Village	Under Construction
DDW010989	1/28/2021	Farmington Village	Under Construction

UIC Number	Date Added to Database	Location/Project	Comments
DDW010991	1/19/2021	Alpenglow Community Park	Under Construction
DDW010992	1/19/2021	Alpenglow Community Park	Under Construction
DDW010993	1/19/2021	Alpenglow Community Park	Under Construction
DDW010994	2/19/2021	Acapella Subdivision	Under Construction
DDW010995	2/19/2021	Acapella Subdivision	Under Construction
DDW010996	2/19/2021	Acapella Subdivision	Under Construction
DDW010997	2/19/2021	Acapella Subdivision	Under Construction
DDW010998	2/19/2021	Acapella Subdivision	Under Construction
DDW010999	2/19/2021	Acapella Subdivision	Under Construction
DDW011000	2/19/2021	Acapella Subdivision	Under Construction
DDW011004	7/28/2020	Countryside Ph.1	Under Construction
DDW011005	7/28/2020	Countryside Ph.1	Under Construction
DDW011006	3/30/2021	Countryside Ph.2	Under Construction
DDW011007	3/30/2021	Countryside Ph.2	Under Construction
DDW011008	9/30/2020	Shevlin West Ph.5	Under Construction
DDW011009	9/30/2020	Shevlin West Ph.5	Under Construction
DDW011010	9/30/2020	Shevlin West Ph.5	Under Construction
DDW011012	4/1/2021	27th St. Townhomes	Under Construction
DDW011013	4/1/2021	27th St. Townhomes	Under Construction
DDW011014	4/26/2021	Les Schwab - ROW	Under Construction
DDW011015	4/26/2021	Les Schwab - ROW	Under Construction
DDW011016	4/26/2021	Les Schwab - ROW	Under Construction
DDW011017	2/5/2021	Newport Corridor Improvements	Under Construction
DDW011018	2/5/2021	Newport Corridor Improvements	Under Construction
DDW011019	2/5/2021	Newport Corridor Improvements	Under Construction
DDW011020	2/5/2021	Newport Corridor Improvements	Under Construction
DDW011021	2/5/2021	Newport Corridor Improvements	Under Construction
DDW011022	2/5/2021	Newport Corridor Improvements	Under Construction
DDW011023	2/5/2021	Newport Corridor Improvements	Under Construction

Table 10.4 Anticipated Decommissioning in FY2020-21 & Beyond

UIC Number	Planned Activity	Project Timing	Project Name/ Comments
DDH009566	Decommissioning	Delayed until summer 2022	Neff and Purcell Intersection Improvements Project
DDH002068	Decommissioning	Delayed until summer 2022	Neff and Purcell Intersection Improvements Project
DDW008164	Decommissioning	Delayed until summer 2022	Citywide Safety Improvements (1TCSI) – 3rd & Pinebrook Safety Crossing.
DDH009459	Decommissioning	October 2021	SW Sewer Basin project
DDH009458	Decommissioning	October 2021	SW Sewer Basin project
DDH009461	Decommissioning	October 2021	SW Sewer Basin project
DDH009457	Decommissioning	October 2021	SW Sewer Basin project

Table 10.5 Open Top Drywell Retrofit Status

City Facility ID	DEQ UIC #	DEQ Well #	Status
DDW003114	10025	1050	**Installed**
DDW009606	10025	2918	**Installed**
DDW009607	10025	2916	**Installed**
DDW009608	10025	2915	**Installed**
DDW009609	10025	2914	**Installed**
DDW009610	10025	2917	**Installed**
DDW009611	10025	1051	**Installed**
DDW009612	10025	2919	**Installed**
DDW009613	10025	2920	**Installed**
DDW009614	10025	2921	**Installed**
DDW009615	10025	2922	**Installed**
DDW009616	10025	2923	**Installed**
DDW009617	10025	2924	**Installed**
DDW009619	10025	1044	**Installed**
DDW009622	10025	1049	**Installed**
DDW009625	10025	1047	**Installed**
DDW009626	10025	1048	**Installed**
DDW010073	10025	5651	**Installed**
DDW007553	10025	5094	**Installed**
DDW007554	10025	5093	**Installed**
DDW007555	10025	5095	**Installed**

City Facility ID	DEQ UIC #	DEQ Well #	Status
DDW007559	10025	5278	**Installed**
DDW007560	10025	5279	**Installed**
DDW007561	10025	5277	**Installed**
DDW001533	10025	437	**Installed**
DDW001534	10025	438	**Installed**
DDW001610	10025	514	**Installed**
DDW002053	10025	2461	**Installed**
DDW003091	10025	1517	**Installed**
DDW003102	10025	1544	**Installed**
DDW003146	10025	1528	**Installed**
DDW003179	10025	1577	**Installed**
DDW003239	10025	2014	**Installed**
DDW003276	10025	560	**Installed**
DDW003360	10025	458	**Installed**
DDW003386	10025	970	**Installed**
DDW003444	10025	2059	**Installed**
DDW003489	10025	513	**Installed**
DDW003495	10025	656	**Installed**
DDW003496	10025	440	**Installed**
DDW003499	10025	88	**Installed**
DDW003500	10025	130	**Installed**
DDW003504	10025	517	**Installed**
DDW003514	10025	540	**Installed**
DDW003529	10025	5006	**Installed**
DDW007207	10025	5023	**Installed**
DDW007303	10025	5539	**Installed**
DDW007304	10025	72	**Installed**
DDW007536	10025	5365	**Installed**
DDW007567	10025	552	**Installed**
DDW007601	10025	5031	**Installed**
DDW008151	10025	5311	**Installed**
DDW008166	10025	5489	**Installed**
DDW008934	10025	5316	**Installed**
DDW009247	10025	657	**Installed**
DDW009523	10025	658	**Installed**
DDW003348	10025	185	**Installed**
DDW003352	10025	190	**Installed**
DDW003353	10025	189	**Installed**
DDW003354	10025	188	**Installed**
DDW003030	10025	538	Removed after further inspection / cleaning revealed not a UIC.
DDW003032	10025	139	Removed after further inspection / cleaning revealed not a UIC.
DDW010063	10025	5641	**Installed**
DDW010064	10025	5642	**Installed**
DDW010065	10025	5643	**Installed**
DDW010066	10025	5644	**Installed**

City Facility ID	DEQ UIC #	DEQ Well #	Status
DDW010067	10025	5646	**Installed**
DDW010068	10025	5645	**Installed**
DDW010071	10025	5649	**Installed**
DDW010072	10025	5650	**Installed**
DDW003023	10025	631	**Installed**
DDW003027	10025	629	**Installed**
DDW003034	10025	630	**Installed**
DDW003041	10025	627	**Installed**

Table 10.6 Open Top Drill Hole Retrofit Status

City Facility ID	DEQ UIC #	DEQ Well #	Sensitive Area Status	Status	Year Installed
DDH009295	10025	2246	NA	Installed Sediment Manhole Treatment	FY2020-21

Appendices

APPENDIX A. PROGRAM MANAGEMENT

A.1. Stormwater Coordinator Meetings

A.2. FY2020-21 Annexation Map

APPENDIX B. PUBLIC EDUCATION AND OUTREACH

B.1. Community Based Social Marketing Training

B.2. Google Web Analytics

APPENDIX C. PUBLIC INVOLVEMENT AND PARTICIPATION

C.1. Stormwater Public Advisory Group Meetings

APPENDIX D. ILLICIT DISCHARGE DETECTION AND ELIMINATION

D.1. Educational Mailing Materials

D.2. Illicit Discharge Database

D.3. Waterwise Tracking Database

APPENDIX E. CONSTRUCTION SITE STORMWATER ACTIVITIES

E.1. Inspection Tracking Log Book

E.2. Example Notice of Violation and Voluntary Compliance Agreement

E.3. CESCL Training Announcement, Workshop Evaluation Summary, and Attendee List

APPENDIX F. POST-CONSTRUCTION CONTROLS

F.1. Stormwater Facilities Inspection Tracking Log

F.2. Watershed-wise Landscaping Webinar Series Materials

Watershed Wise Landscaping, March 4, 2021

Compost: Building the Soil Sponge, March 11, 2021

Irrigation and Water Use Efficiency, March 18, 2021

Garden Design Workshop, March 20, 2021

Rainwater Capture Workshop, March 25, 2021

APPENDIX G. MUNICIPAL MAINTENANCE

G.1. Quarterly Corporation Yard Inspection Example

G.2. Target Solutions Training Summary

APPENDIX H. MONITORING

H.1. Field Monitoring Notebook

H.2. Sampling Results

APPENDIX I. UNDERGROUND INJECTION CONTROL

I.1. UIC Registration Database