CITY OF BEND

2019-2020 ANNUAL REPORT

STORMWATER NPDES PERMIT NO. 102901
STORMWATER UIC WPCF PERMIT NO. 103052

National Pollutant Discharge Elimination System
Municipal Separate Storm Sewer Annual Report

Underground Injection Control System Annual Report

Utility Department

Stormwater Utility
October 2020

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CITY OF BEND

FY 2019-20 NPDES Annual Report

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

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 29, 2020

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2019-2020 ANNUAL REPORT

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STORMWATER UIC WPCF PERMIT NO. 103052

National Pollutant Discharge Elimination System
Municipal Separate Storm Sewer Annual Report

Underground Injection Control System Annual Report

FINAL
October 29, 2020

Prepared by:

City of Bend
Utility Department
Stormwater Utility

62975 Boyd Acres Road
Bend, OR 97701

http://bendoregon.gov/stormwater
541-317-3000 Ext. 2

Accommodation Information for People with Disabilities

To obtain this information in an alternate format such as Braille, large print, electronic formats or audio cassette tape, please contact Utilities Department at (541)317-3000 Ext. 2, or email utilities@bendoregon.gov.

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ACRONYMS AND ABBREVIATIONS

ACWA	Association of Clean Water Agencies
APWA	Association of Public Works Agencies
ASCE	American Society of Civil Engineers
AWWA	American Water Works Association
BEDAB	Bend Economic Development Advisory Board
BMPs	Best Management Practices
BOPA	Batteries, Oil, latex Paint, and Antifreeze
City	City of Bend, Oregon
CMP	Congestion Management Plan
CPESCL	Certified Professional in Erosion and Sediment Control Lead
COBA	Central Oregon Builders Association
COIC	Central Oregon Intergovernmental Council
COSM	Central Oregon Stormwater Manual
CTF	Stormwater Utility Fee Citizen's Task Force
DEQ	Oregon Department of Environmental Quality
DHS	Oregon Department of Health Services
DWPA	Drinking Water Protection Areas
EPA or US EPA	United States Environmental Protection Agency
ERU	Equivalent Residential Unit
FOG	Fats, Oil, Grease
FTE	Full Time Equivalent
FY	Fiscal Year
GIS	Geographic Information System
GPS	Geographical Positioning System
HHW or HHHW	Household Hazardous Waste
IAC	Utility Infrastructure Advisory Committee
IECA	International Erosion Control Association
IPM	Integrated Pest Management
ISWMP	Integrated Stormwater Management Plan
LID	Low Impact Development
MEP	Maximum Extent Practicable
Monitoring Plan	*City of Bend Water Quality Monitoring Plan*
MS4	Municipal Separate Storm Sewer System
NHD	High-Resolution National Hydrography Data Set
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
O & M	Operation & Maintenance
OEC	Oregon Environmental Council
OLCA	Oregon Landscape Contractors Association
PAG	Stormwater Quality Public Advisory Group
PCBs	Polychlorinated Biphenyls

ACRONYMS AND ABBREVIATIONS

PCOs	Pest Control Operators
PEO	Professional Engineers of Oregon
PIP	Public Involvement and Participation
PNCWA	Pacific Northwest Clean Water Agencies
POCs	Pollutants of Concern
	City of Bend Ambient Water Quality Monitoring Project
QAPP	Quality Assurance Project Plan
SWAT	Stormwater Action Team
SWMP	Storm Water Management Plan or Program
SWPPP	Storm Water Pollution Prevention Plan
TDM	Transportation Demand Management
TMDL	Total Maximum Daily Load
UDWC	Upper Deschutes Watershed Council
UGB	Urban Growth Boundary
UIC	Underground Injection Control; drywell or drill hole
USGS	United States Geologic Survey
WHPA	Wellhead Protection Area
WPCF	Water Pollution Control Facility

FY2019-2020 Annual Report

Section 1.0 Introduction

Background

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 the requirements of NPDES Permit No. 102901 (DEQ File No. 113602) that it received on February 26, 2007 from the Oregon Department of Environmental Quality (DEQ) and of Water Pollution Control Facility-Underground Injection Controls (WPCF-UIC) Permit No. 103052 (DEQ File No. 112361) that it received on May 14, 2013.

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 36-38 outfalls to the river based on a 2019 field survey (two potential outfalls have not been verified) that serve a portion of the City along the Deschutes River and West Hills. Privately owned and maintained entities, such as the Old Mill District and specific subdivisions in town that do not discharge to the City's MS4 system, also have private outfalls that are outside of the City's direct jurisdiction with respect to the NPDES permit. The City has applied for renewal of its NPDES permit and continues to negotiate the terms for the next five-year permit. In the meantime, DEQ has administratively extended the City's NPDES permit coverage, so the City must continue to implement the Integrated Stormwater Management Plan (2006) during this time.

Per item 1 of the NPDES permit's Schedule C, Compliance Conditions and Schedules, initial implementation of the approved stormwater management plan (the City's *Integrated Stormwater Management Plan* (ISWMP)), was required to begin by July 31, 2007. The ISWMP (2006) described the activities the Program would implement during the City's first 5-year NPDES permit period. These activities are divided among the following 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—Pollution Prevention and Good Housekeeping;
- Monitoring;
- Drinking Water Protection Areas: Investigation, Re-Delineation and Management.

WPCF UIC Permit. On May 14, 2013, the City received its first Water Pollution Control Facility Permit (WPCF) 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 under the City's WPCF-UIC permit and was submitted for consideration as part of the NPDES permit reissuance negotiation.

Contents of the Annual Report

This represents the fourteenth City of Bend Stormwater Annual Report submitted to the DEQ and describes stormwater quality and pollution prevention activities implemented by the City during Fiscal Year (FY) 2019-2020 (July 2019 through June 2020). As quoted from item 2 of the NPDES permit's Schedule B, Monitoring and Reporting Requirements, the annual report must contain the following:

a) 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;

b) 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 MEP;

c) A summary of the stormwater activities the permittee plans to undertake during the next reporting cycle, including a schedule for implementation;

d) A description of changes made to the SWMP, including changes to BMPs or measurable goals identified in the SWMP;

e) Information on all new additions or removals of annexed areas that result in an expansion or contraction of the MS4's boundaries;
f) Notice that the permittee is relying on another government entity to satisfy some of the permittee's permit obligations (if applicable); and,
g) Number and nature of enforcement actions taken.

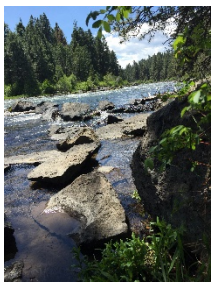
Per subsection 4. of the City WPCF-UIC permit, the annual Underground Injection Control System Report must:

a. 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;
b. Discuss any action level exceedances (outlined in Permit Table 1) and actions taken to address the exceedances;
c. Describe any actions taken to implement the Underground Injection Control System Management Plan required in Schedule D, condition 5, any proposed modifications to the Underground Injection Control System Management Plan, and any additional actions taken to manage the City's injection systems to ensure groundwater protection;
d. Describe any actions described in your Underground Injection Control System Management Plan that you were not able to complete and why;
e. Identify any injection systems that you closed, retrofitted, or installed during the year;
f. Describe your future (in the next year) known plans to install, modify, convert, or close any underground injection systems; and
g. 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 assessment of the effectiveness of activities conducted in reducing or preventing stormwater pollution; and a summary, by individual component, of modifications proposed to the ISWMP per the review conducted this fiscal year. Supporting documents produced under each task are presented in an appendix at the end of each component section. At the end of each task header throughout the report, a notation is included as to whether the task applies to the City's Municipal Separate Storm Sewer System (MS4), which is the piped system that drains to the Deschutes River or other surface waterbody, or to Underground Injection Controls (UIC) or both. The stormwater quality regulatory requirements are different depending on whether the stormwater discharges through an MS4 or UIC system.

FY2019-2020 Annual Report

Section 2.0 Overall Program Management and Legal Authority



Introduction

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 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 tasks being met.
- The City applied for coverage for an individual NPDES Phase II Permit, appropriate given the population of the City exceeding 100,000 people in 2019.
- Staff effectively pivoted to continue administering the program remotely when the Covid-19 pandemic hit.

Tasks Completed

Task	Description	Compliance Status	Tasks Completed	Effectiveness
ISWMP 2006 Task II-1	**Administration and Coordination (MS4 and UIC).** 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.	Fully Compliant	The Stormwater Action Team, long ago renamed Stormwater Coordinators, consist of multiple interdepartmental groups within the City that focus on coordinating on stormwater issues, and are comprised of: (a) Stormwater Liaisons (SL) consisting of representatives from multiple departments that focus on stormwater issues, (b) separately those department heads and in higher management attending a direct reports	A combination of the larger coordination meetings together with a continued emphasis on more focused meetings for efficiency appears to work well. With seven documented interdepartmental meetings, the Stormwater Coordinators exceeding the measurable goals for FY2019-20. The smaller ad hoc task group meetings worked well to focus on topics specific to the

Task	Description	Compliance Status	Tasks Completed	Effectiveness
			meeting to the Chief Operating Officer, Jon Skidmore, discussing topics including stormwater, and, (c) Subgroups called ad hoc task groups (AHTG) of these. The City exceeded the requirement of having interdepartmental stormwater coordination meetings at least four times per year in FY2019-20. Meetings occurred on: August 6, 2019 (COO Direct Reports); August 20, 2019 (Streets/Stormwater); September 4, 2019 (CDD/Stormwater); October 24, 2019 (Stormwater Liaison); December 10, 2020; (CDD-Trash Enclosures); January 7, 2020 (Stormwater, CDD); April 20, 2020, May 4, 2020, May 26, 2020 and June 14, 2020 (Stormwater/CDD/EIPD); (see Appendix A). **Annexation Update.** In FY2019-20, the City made three annexations: the Rio Lobo Type II annexation off of Shevlin Park Rd. (40 acres, December 18, 2019); the Pahlisch Treeline Annexation near Anderson Ranch Rd. (28.3 acres, March 4, 2020); and the Petrosa Type II Annexation on the NE Edge of Bend (177	attendees. In addition, utility staff met multiple times internally and with downtown communications team members to coordinate outreach and messaging activities. Such separate meetings were not created at the time of the ISWMP development but are leveraged to efficiently coordinate on stormwater matters as well. The program has shown adaptability in this way.

Task	Description	Compliance Status	Tasks Completed	Effectiveness
			acres, March 9, 2020) (See Appendix A).	
ISWMP 2006 Task II-2	**Legal Authority (MS4 and UIC).** Evaluate the existing development rules, documents and 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	Fully Compliant	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, 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. In FY2019-20 the City worked towards making updates to the Standards and Specifications but due to Covid-19 delays they have not yet been approved.	The City has met its measurable goals for all subtasks. Over the initial NPDES MS4 permit term, the City successfully passed resolutions and an ordinance to set up the stormwater utility, adopted the improved standards and specifications, and adopted the stormwater ordinance, Bend Code Title 16. The City continues to work towards continual improvement with review and update of its rules and policies. In March 2019, the City adopted improvements to the Standards and Specifications, including stormwater sections where we specified treatment priorities by area, among other changes. The City approved increasing lot coverage for state-required affordable housing and density requirements reasons related to UGB expansion last year, the results of which is impacting the ability of these developments to keep stormwater on site in an economically feasible manner. Although Bend Code Title does allow for

Task	Description	Compliance Status	Tasks Completed	Effectiveness
				formal agreements to allow for management across property lines.
ISWMP 2006 Task II-3	**Financing (MS4 and UIC).** Ensure adequate funding to implement this integrated stormwater management plan, and to complete a Stormwater Master Plan by Permit Year 4.	Fully Compliant	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 rate in FY2019-20 was $5.62/ equivalent residential unit (ERU), and the City Council passed a rate of $5.79/ ERU for FY2020-21 in June 2020. 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. The fee is designed to cover quantity and quality issues. The funds are now covering stormwater improvements for al 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 is anticipated in FY2020-21.	The City has successfully established a stormwater utility service charge, and began collecting fees of $4/ERU in July 2007. Fees were first raised to $5/ERU in July 2015 to meet the needs of the adopted Stormwater Master Plan, and yearly since to $5.15/ERU in July 2016 to $5.30/ERU starting in July 2017, to $5.46/ERU in July 2018, to $5.62/ERU in July 2019, and $5.79 in July 2020. The current fee for FY2019-20 was expected to raise $3.8M but may have fallen short given the continuing Covid 19 challenges, the full impacts of which are not yet known.
ISWMP 2006 Task II-4	**Planning (MS4 and UIC).** Annually review the ISWMP. Results of the	Fully Compliant	The City plans a thorough update of its ISWMP 2022 once the City's final NPDES MS4 permit	The City has reviewed the ISWMP during the draft NPDES MS4 Phase II permit

Task	Description	Compliance Status	Tasks Completed	Effectiveness
	review and any changes to the SWMP will be reported on as part of the annual report, due by November 1 of each year.		conditions are known. At present, the City's existing individual NPDES MS4 permit is administratively extended.	comment period and feels it is most efficient to perform a thorough update of its ISWMP once the City's final NPDES MS4 Phase II permit conditions are finalized, especially as the ISWMP is also tied to the WPCF- UIC permit.
ISWMP 2006 Task II-5	**Annual Reporting (MS4 and UIC).** 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.	Fully Compliant	In FY2019-20, the City prepared and submitted the FY2018-19 annual report by the November 1 deadline. This annual report, covering FY2019-20, is the fourteenth annual report prepared by the City and serves to cover ISWMP (2006), describing continuing activities and achievements made to meet the water quality requirements of the NPDES MS4 permit and ISWMP 2022, which has been approved by DEQ as the management document for the WPCF-UIC permit. This is the seventh annual report submitted to DEQ for activities required by the WPCF-UIC permit. Descriptions of effectiveness are included under each task. Per the City's stormwater permits, the annual reports are due by November 1 of each year.	The City has worked interdepartmentally and with public advisory group feedback each year to develop and submit each annual report on time. Annual reports are posted on the City's website.
ISWMP 2006	**UIC Registration (UIC).** On a map, show the location	Fully Compliant	The City's GIS geodatabase includes all known City-owned	This is an ongoing task, and the City continues to update

Task	Description	Compliance Status	Tasks Completed	Effectiveness
Task II-6a	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.		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, located at: http://www.bendoregon.gov/index.aspx?page=463. Additionally the City has street level imagery that staff can use for internal research purposes. In FY2019-20, staff completed incorporating the results of the 2019 river outfall inspection effort into the City's mapping database	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.
ISWMP 2006 Task II-6b	**UIC Registration (continued) (UIC).** 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		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.	DEQ has received our databases for updating their database accordingly.

Task	Description	Compliance Status	Tasks Completed	Effectiveness
	constructed, modified or decommissioned. Maintain accurate database.			
ISWMP 2022 BMP II-1	**Administration and Coordination (MS4 and UIC).** Stormwater coordination staff across divisions and departments will meet as needed and at least four times per year.	Fully Compliant	Task completed. See table below for responsibilities matrix. See Appendix A for organization charts. See ISWMP 2006 Task II.1. for more information.	See ISWMP 2006 Task II.1
ISWMP 2022 BMP II-2	**Legal Authority (MS4 and UIC).** 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.	Fully Compliant	See ISWMP 2006 Task II.2. City is seeing above 60% permit compliance (see Construction and Post-Construction sections).	See ISWMP 2006 Task II.2
ISWMP 2022 BMP II-3	**Financing (MS4 and UIC).** Ensure adequate funding to implement this integrated stormwater management plan and continue to meet operation and maintenance needs.	Fully Compliant	See also ISWMP 2006 Task II.3 The City conducts rate reviews periodically and adjusts rates to ensure adequate funding to meet water quality and water quantity needs.	See ISWMP 2006 Task II.3 The City is effectively meeting this task. The City will conduct a rate structure review and commit to biennial budget planning in FY2020-21.
ISWMP 2022 BMP II-4	**Planning (MS4 and UIC).** Annually review the *ISWMP 2022* to the degree allowed by	Fully Compliant	See ISWMP 2006 Task II.4 In the coming year, the City plans to continue to implement the tasks and performance standards in	See ISWMP 2006 Task II.4 The City is effectively meeting this task given the status of the two

Task	Description	Compliance Status	Tasks Completed	Effectiveness
	permitting requirements, plan specific activities for the coming year, and revise the *ISWMP 2022* as needed.		the ISWMPs, and specifically the additional efforts listed throughout this report.	permits. The ISWMP cannot be updated while the NPDES permit is administratively extended.
ISWMP 2022 BMP II-5	**Annual Reporting (MS4 and UIC).** 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.	Fully Compliant	See ISWMP 2006 Task II.5	See ISWMP 2006 Task II.5 The City is effectively meeting this task with submittal of each of the annual reports since FY2006-07.

Table 2.1 Responsible Personnel

Permit Area of Responsibility	Specific BMPs	Lead Name[10]	Title (bold designates lead)	Department/ Division	Phone
Overall Interdepartmental Communication	All	**Eric King**	**City Manager**	City Administration	541-388-5505
Program Administration, Planning, and Finance	II-1, II-2, II-3, II-4, II-5	Eric King	City Manager	City Administration	541-388-5505
	II-1, II-2, II-3, II-4, II-5	**Paul Rheault**[1]	**Utility Director**	Utility Department	541-317-3000
	II-1, II-2, II-3, II-4, II-5	**Russell Grayson**	**Community Development Director**	Community Development Department	541-388-5580
	II-3	Sharon Wojda	Chief Financial Officer	Finance Department	541-693-2158
	II-1, II-2, II-3	**Ryan Oster**	**Engineer Director / City Engineer**	Community Development Department	541-388-5580
	II-1, II-2, II-3, II-4, II-5	Wendy Edde	Stormwater Program Manager	Utility Department	541-317-3000
Public Education and Outreach	III-1, , III-3, III-4, III-5	**Paul Rheault**	**Utilities Director**	Utility Department	541-317-3000
	III-1, III-3, III-5,	Anne Aurand	Communications Manager	City Administration	541-388-5573
	III-1	Russell Grayson	Community Development Department Director	Community Development Department	541-388-5580
	III-1, III-2, III-3, III-4, III-5	Wendy Edde	Stormwater Program Manager	Utility Department	541-317-3000
Public Involvement and Participation	IV-1, IV-2, IV-3, IV-4	**Paul Rheault**	**Utilities Director**	Utility Department	541-317-3000
	IV-2	Russell Grayson	Community Development Department Director	Community Development Department	541-388-5580

[1] As of July 2020, Paul Rheault has left the City of Bend. A current recruitment for his replacement is underway. Until completed, Chief Operating Officer Jon Skidmore is overseeing Paul's roles.

Permit Area of Responsibility	Specific BMPs	Lead Name[10]	Title (bold designates lead)	Department/ Division	Phone
Public Involvement and Participation	IV-2, IV-3, IV-4	Anne Aurand	Communications Manager	City Administration	541-388-5573
	IV-1, IV-2, IV-3,	Wendy Edde	Stormwater Program Manager	Utility Department	541-317-3000
	IV-3	Cheryl Howard	Volunteer Coordinator	City Administration	541-388-5579
Illicit Discharge Detection and Elimination	V-1, V-2, V-3, V-5,V-6	**Paul Rheault**	**Utilities Director**	Utility Department	541-317-3000
	V-5,V-6	Russell Grayson	Community Development Department Director	Community Development Department	541-388-5580
	V-3	Ryan Oster	Engineer Director / City Engineer	Engineering	541-317-3000
	V-3	Charles Swann	Streets Division Manager	Streets Department	541-317-3000
	V-2, V-4	Anne Aurand	Communications Manager	City Administration	541-388-5573
	V-3	Cheryl Howard	Volunteer Coordinator	City Administration	541-815-5559
	V-1, V-2, V-3	Wendy Edde	Stormwater Program Manager	Utility Department	541-317-3000
Construction Site Stormwater Activities	VI-1, VI-2	**Russell Grayson**	**Community Development Director**	Community Development Department	541-388-5580
	VI-1, VI-2	**Paul Rheault**	**Utilities Director**	Utility Department	541-317-3000
	VI-1, VI-2	**Ryan Oster**	**Engineer Director / City Engineer**	Engineering	541-317-3000
	VI-2	Wendy Edde	Stormwater Program Manager	Utility Department	541-317-3000
Post Construction Stormwater Management In New and Redevelopment	VII-1, VII-2	**Russell Grayson**	**Community Development Director**	Community Development Department	541-388-5580
	VII-1, VII-2	**Paul Rheault**	**Utilities Director**	Utility Department	541-317-3000
	VII-1, VII-2	**Ryan Oster**	**Engineer Director / City Engineer**	Engineering	541-317-3000
	VII-2	Wendy Edde	Stormwater Program Manager	Utility Department	541-317-3000
Pollution Prevention/Good Housekeeping for Municipal Operations	VIII-1, VIII-2, VIII-3, VIII-4	**Paul Rheault**	**Utilities Director**	Utility Department	541-317-3000
	VIII-5	**Russell Grayson**	**Community Development Director**	Community Development Department	541-388-5580

Permit Area of Responsibility	Specific BMPs	Lead Name[10]	Title (bold designates lead)	Department/ Division	Phone
	VIII-1, VIII-2, VIII-3, VIII-4	Charles Swann	Streets Division Manager	Streets Department	541-317-3000
Monitoring	IX-1, IX-2, IX-3	**Paul Rheault**	**Utilities Director**	Utility Department	541-317-3000
	IX-1, IX-2, IX-3	Wendy Edde	Stormwater Program Manager	Utility Department	541-317-3000
	IX-1, IX-2, IX-3	Jeff Buystedt	Field Sampling--Program Manager	Utility Department	541-317-3000
Underground Injection Controls (City-owned)	X-1, X-2, X-3	**Paul Rheault**	**Utilities Director**	Utility Department	541-317-3000
	X-3	**Ryan Oster**	**City Engineer**	Public Works	541-317-3000
	X-2	Charles Swann	Streets Division Manager	Streets Department	541-317-3000
	X-1, X-2, X-3	Wendy Edde	Stormwater Program Manager	Utility Department	541-317-3000
	X-2, X-3	Spencer Sanvitale	Utility Data Systems Program Manager	Utility Department	541-317-3000

10 Lead Responsible Person in **Bold** with assistance from personnel in regular-type text.

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 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 worked to keep trained to ensure strong and efficient program management—stormwater utility staff obtained continuance of the APWA Certified Stormwater Manager designation; earned ASCE Foundation for Using GIS for Infrastructure Asset Management, and attended trainings such as TMDL Planning through the Center For Watershed Planning in FY2019-20 (see Appendix A).

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FY2019-2020 Annual Report

Section 3.0 Public Education and Outreach

Introduction

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 to provide the public a basic understanding of what stormwater is and why using best management practices (BMPs) matter.

Highlights

- City created and distributed a Stable Loads brochure to help prevent debris and sediment from moving trucks.
- City provide air time for the 2019 BendFilm/Zolo Media/ City of Bend Clean Water Works video contest grand prize winner's public service announcement on local television channels, designed to prevent sewer overflows into streets and storm drains. Intermixed with additional stormwater psas in second half of fiscal year.
- Realized the final results of a multi-year statewide effort that City staff led the development of through the Oregon Association of Clean Water Agencies to develop a series of consistent statewide, topical best management practice outreach pieces covering: 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.

Tasks Completed

Task	Description	Compliance Status	Tasks Completed	Effectiveness
ISWMP 2006 Task III-1	**Utility Bill Inserts, Brochures or Posters (MS4 and UIC).** Develop and distribute at least two stormwater information pieces to area residents per permit year on average. Distribute at least 4 information pieces.	Fully Compliant	On November 12, 2019, the City again distributed via email the Food Service BMP Training video that included stormwater pollution prevention messaging to all restaurants with a business license. The City also finalized, printed, and electronically distributed a Stable Loads brochure to all applicable construction related contractors.	Although we were not able to do the Clean Water Works Partnership Program in full this year given bandwidth and Covid issues, the City continues to get a strong stormwater pollution prevention message out in a positive manner appropriate for Bend.

Task	Description	Compliance Status	Tasks Completed	Effectiveness
			The City submitted two City News articles in July 2019, one for the Deschutes River Cleanup; and one announcing the Clean Water Works youth film contest winners. The City's Stormwater Program Manager served as the project manager for the ACWA IDDE brochures development. In December 2019, she with others in ACWA reviewed the final graphical layout of the products, which were released for use in the 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. In April-May 2020, the City conducted social media outreach for Clean Water Works Youth video contest push, and – partly in response to the changing school conditions resulting from the Covid-19 pandemic --created an informal video to help students with development of the entries that focused	The new Stable Loads fact sheet and insert targets one of our main pollutants of concern – sediment from construction activities, as well as debris. The finalization of the ACWA factsheets and poster gives the public easy to follow, statewide-consistent guidelines for best management practices. The Bend Current is a sign-up only e-newsletter, so the reach is not the same as the City Newsletter did when it was distributed in hard copy with the utility bills. But no study has been conducted locally assessing effectiveness in reach, because those who have self-selected to receive the e-newsletter are more likely to read it. The numbers of actual readers may be similar, in which case retiring the hard-copy version to all may have saved paper resources without significant loss of readership. The City Newsletter was distributed to all stormwater account holders; the Bend Current e-newsletter by comparison had 6,008

Task	Description	Compliance Status	Tasks Completed	Effectiveness
			on pollution prevention for automobile wheels. The City completed and printed hardcopies for the Stable Loads fact sheet for all audiences and the Stable Loads stuffer for professional drivers. The City continued to distribute through passive means (at front desks, or during inspections, etc.): (a) LID Maintenance Fact Sheets: • Porous Pavement • Sedimentation Manhole • Rain Garden • Drywell • Catch Basin (b) One Water brochure that includes stormwater information to new Utility customers. (c) Annual Drinking Water Quality Report, which includes a brief summary of stormwater program activities to protect drinking water quality. (https://www.bendoregon.gov/waterreport) (d) educational pieces as part of the Clean Water Works campaign (e.g., television media buys, slides at BendFilm events, advertisements in the Bend Park and Recreation guide, advertising in playbills (see Appendix B)). Additionally, staff submitted, and the	subscribers in September 2019.

Task	Description	Compliance Status	Tasks Completed	Effectiveness
			Communications Department staff included, several stormwater messages in the Bend Current e-newsletter. The following articles were included: • July 2019: 2019 Clean Water Works Video Contest winner; Deschutes River Cleanup; Smart Irrigation tips; Plastic Bag Ban; Utility Rates update, and Septic to Sewer (see Appendix B). • September 2019: Announcing City Quest at the Fall Fest (see Appendix B) • November 2019: FOG outreach to prevent sewage backups in the streets/storm drains (see Appendix B) • March 2020: Greenways (promoting alternative transportation) • June 2020: Promoting the Drinking Water Report that includes a section on stormwater quality program.	
ISWMP 2006 Task III-2	**Stormwater Pollution Prevention Website (MS4 and**	Fully Compliant	The City's stormwater utility website is available at www.bendoregon.gov/stor	The main stormwater pages had over 5,700 views in FY2019-20, with the Clean Water

Task	Description	Compliance Status	Tasks Completed	Effectiveness
	UIC). Update the website with a stormwater message in Permit Year 2, and to keep the website updated with new information in future years.		mwater. We continue to promote through our advertising the Clean Water Works campaign: www.bendoregon.gov/cleanwaterworks pages of the website to focus on the stormwater quality aspects of the utility. Modifications to the website to meet Americans with Disabilities Act (ADA) requirements continue with initial focus on ensuring our newest entries are ADA compatible. New information has been added in FY2019-20 including new videos and competition information.	works Kid's video and poetry contests seeing the most pageviews at 1,348, a rise of 429% over the same page in FY2018-2019. Pageviewers spent an average of 5 minutes 4 seconds on the page this fiscal year, suggesting they watched the videos focused on best management practices. Please see Appendix B for additional analysis. The City continues to work through the balance between updating the website so that all materials are meeting ADA requirements. Some older documents may need to be archived and made available upon request given the resource requirements to modify technical documents accordingly.
ISWMP 2006 Task III-3	**City News Broadcast, Stormwater Quality Messages, and Press Releases (MS4).** Post at least one stormwater quality-related message per year during each permit year.	Fully Compliant	The City ran its new flushable wipes psa on air throughout the year. This piece was the result of the grand prize winner of our Clean Water Works contest working with a professional producer to turn their entry into a professional commercial. Flushing wipes is a problem for the separate sanitary sewer collection system, but when that backs up as a result the	The City effectively met this requirement. Fewer City Editions are being created these days due to cuts in the Communication dept. budget, and Munch n Movies did not occur in 2019 again due to event organization issues, but BendFilm shares the Kids Contest psa each year and shows slides at each of its screenings

Task	Description	Compliance Status	Tasks Completed	Effectiveness
			impact can affect the stormwater system. Additionally, the City ran a selection of four additional psas from past winners in 2020. In all, the City ran 621 paid spots, and received another 904 bonus spots given the non profit community benefit, for a total of 1,525 spots between September 2019 and August 2020. Additionally, on its own the Bend Bulletin printed an article about Rain Gardens, which helps the local efforts to educate (see Appendix B.) The City played two 30 second psa's to two full house performances at the Tower theater, announcing at and distributing Clean Water Works Kid's Video Contest announcements at the Westside Village Magnet school events on February 27, 2020. (See Appendix B). This is in addition to the City's school education program that includes information on the City's stormwater program and a better site design field trip (See Appendix B). The City placed Love Your River advertisements in the Bend Park and Recreation Guides for the issues they posted (the final was impacted by Covid-19).	for the year, including during the annual FilmFest. And this year BendFilm purchased the Tin Pan Theater and showed some there for a month instead.

Task	Description	Compliance Status	Tasks Completed	Effectiveness
			The City also participated in the online version of the Environmental Center's Earth Day events by providing information for their Goose Chase scavenger hunt app.	
ISWMP 2006 Task III-4	**Stormwater/ Watershed Diorama (MS4).** Purchase and make available the Stormwater/ Watershed diorama for educational opportunities.	Fully Compliant	The City has two educational dioramas -- a watershed plastic model; and a groundwater one showing how underground injection controls work. The City lent out both dioramas to the Bend-LaPine School District and the Environmental Center throughout the year until the Covid -19 crises shut down schools in mid-March. The City promoted both dioramas for free lending at Teacher's Night Out at the High Desert Museum in September (19th) and distributed information on additional supplies available for lending. In September 2019, the City loaned the UIC model to New Leaf Academy; and to Pilot Butte Middle School in October, Miller School in November, and Skyview Middle School in January. The City also participate in the City Quest Utility booth at the Fall Festival on October 5thoperating the UIC Model on display.	The City is meeting this task effectively.

Task	Description	Compliance Status	Tasks Completed	Effectiveness
ISWMP 2006 Task III.5	**Performance Standards.** Prepared draft performance standards starting in Year 4 to obtain internal review, and finishing by midyear in Year 5 for inclusion in the permit package.	Fully Compliant	The City prepared the performance standards in the original five-year permit term and are currently implementing them (see section below).	Staff are effectively meeting the performance standards.
ISWMP 2022 BMP III-1	**Develop and Implement Strategic Outreach Plan Targeting Pollutants of Focus for the Public and City Employees (MS4 and UIC).** 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 Council and at least one to two targeted employee groups per year information on the stormwater program typically in areas needing coordination improvement.	Fully Compliant	See also ISWMP (2006) BMP III-1 The City is implementing its Strategic Outreach Plan for targeting pollutants of focus. The City is targeting sediment reduction and illicit discharge reduction especially around metals such as lead. This year the City developed and distributed its Stable Load brochure, several newsletter articles (noted above), and public service announcements. On September 16, 2019, City stormwater program staff participated in and distributed outreach at Venga Y Conozca during Bend's Welcoming Week. From there, staff promoted the idea of converting the City's One Water overview brochure including information about the City's utilities including stormwater into a Spanish translation format as well. That work is now in progress.	The City has been implementing its Strategic Outreach Plan. Pollution Prevention Training Fact Sheets are included in the City's Utility Department training program; and public versions are included in the Business Resources section of the City's website. General education of stormwater pollution prevention including diorama's, outreach at events including banners, kid's film contests and print advertising in the BPRD and Smart Shopper guides continues. The Public Advisory Group has focused on linkages between land use and stormwater, but all existing materials are available on the website. The Clean Water Works Partnership has been the umbrella for incentive programs.

Task	Description	Compliance Status	Tasks Completed	Effectiveness
			In FY2019-2020 the City distributed links to its 6-minute training video for food-service workers and poster to food service staff. Staff conversed or met with street sweeper staff as needed this year to share the importance of street sweeping efficiency for stormwater pollution prevention, and began implementation of a stormwater quality specific sweeping plan. Staff also began working closely with community development staff to address development pressures for density and drainage flexibility. The City staff submits for consideration in a Council memorandum an announcement of the availability of the stormwater annual report to City Council every year. The City has "Only Rain in the Storm Drain" DAS markers available to private users on a first come first serve basis.	
ISWMP 2022 BMP III-2	**Stormwater Pollution Prevention Website (MS4 and UIC).** Update the website with revised stormwater messages starting in FY2012-13, and to keep the website updated with new	Fully Compliant	See ISWMP (2006) BMP III-2	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.

Task	Description	Compliance Status	Tasks Completed	Effectiveness
	information in future years.			
ISWMP 2022 BMP III-3	**Media Relations: City News Broadcast, Stormwater Quality Messages and Press Releases (MS4 and UIC).** Post on average at least one stormwater quality-related messages per year during each permit year.	Fully Compliant	See ISWMP (2006) BMP III-3. The City maintains several of its stormwater videos on the City's you tube website: https://www.youtube.com/user/CityofBendOregon/search?query=stormwater	This requirement is being exceeded. As of September 27, 2020, the original 2015/16 CWW Video contest psa has 76 views on the website, Lucie's Clean Water Works Poem from 2 years ago has 324 views; the 2018 winners has 89 views, the 2019 video winner posted 5 months ago has 32 views. The original Clean Water Works commercial has 458 view; the Bend Food Service Training video has 457 views; the Cleaning the Storm Drains and Fire Hydrants video from March 15, 2019 has 329 views on the website along.
ISWMP 2022 BMP III-4	**School/ Enrichment Activity Outreach: Stormwater/ Watershed Diorama (MS4 and UIC).** Make available the Stormwater/ Watershed diorama and videos for educational opportunities.	Fully Compliant	Please see ISWMP (2006) BMP III-4. The Ins and Outs of Water includes a section on stormwater. The Stormwater Quest field trip is offered as well, located in the Old Mill area to examine site design and stormwater facility measures. (See Appendix C.) City Stormwater staff met with Environmental Center	The education program aligns with core standards and is well liked by teachers. Covid-19 impacted the number of connections. As a whole, the Utility dept. through the Environmental Center contract reached 16 or 30 targeted elementary classrooms (516 or 750 students and 29 or 60 targeted presentation). Similarly for middle school, the Utility

Task	Description	Compliance Status	Tasks Completed	Effectiveness
			staff in September 2019 to help train them to teach school children about the City's stormwater and other utilities. They met again in the spring to adjust to Covid- 19 restrictions, and offered ideas for Earth Day remote activities. The winner of the Clean Water Works Youth Video Contest was recognized before City Council, and the videos were shared with Council providing for an educational event for attendees (see Appendix C).	department reached 26 or 30 classrooms, 713 of 840 unique students and conducted 98 or 120 planned presentations and 120 of 896 field trips. The Environmental Center was able to pivot with Covid-19 impacts and provide some training to Pacific Crest Middle School online. The Environmental Center's evaluation showed that why in the pre-assessment 40% of the students did not know 3 ways to reduce stormwater pollution prior to the class, the number of "I don't know" answers dropped to 10% after the class with students providing correct answers.
ISWMP 2022 BMP III-5	**Implement Performance Standards (MS4 and UIC).** 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.	Fully Compliant	Please see below for a summary of performance standard implementation.	Having performance standards and separate strategic education outreach campaign together with an original ISWMP (2006) and an ISWMP 2022 makes tracking tasks more challenging than one consolidated plan. This could be improved by streamlining into one ISWMP if the two permits get on complimentary

Task	Description	Compliance Status	Tasks Completed	Effectiveness
				timelines and extraneous plans are minimized.

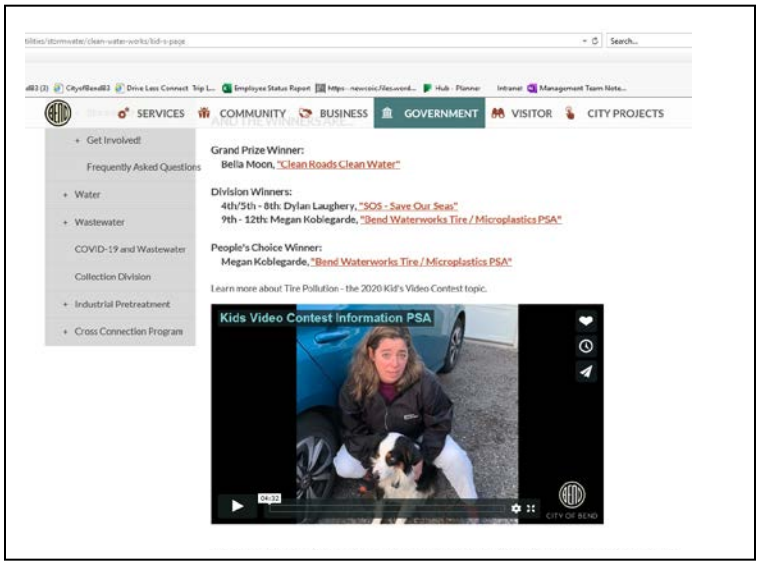
Performance Standards Implementation Status

Please see Section 4 for the combined Public Information and Participation Performance Standards Implementation Status table. The City is fully implementing the performance standards.

Summary of Effectiveness

The City met or exceeded the measurable goals for implementation of required permit activities. The focus this year was the successful continuation of the Clean Water Works Youth Video contest partnership program, this year focused on an emerging pollutant of concern—vehicle tire wear—and the final completion of the City of Bend Stable Loads flyer, and the Oregon Association of Clean Water Works outreach pieces. The communication coordination staff were able to secure an excellent deal with bonus buys for the media outreach component this year, focusing on two stations, and the stormwater utility leveraged costs by combining buys with other utilities divisions given the subject matter supported both.

The key word this year was “pivot” given the needs to make adjustments when the Covid-19 crisis hit. The City rose to the challenge by creating a helpful teaching video (see photo at right) for the youth video contest and extending the deadline for entries; to helping adjust the Earth Day event idea; to conducting an electronic mailout of Stable Load fact sheets; to having the Environmental Center conducting some of their school trainings for the City online.



FY2019-2020 Annual Report
Section 4.0 Public Involvement and Participation

Introduction

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 in another successful Deschutes River Clean up event.
- 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 vehicle tires.
- Engineering and Infrastructure Planning Department staff held public meetings for CIP projects that contain stormwater improvements, including the Newport Project. Growth Management Staff held public meetings on the Core Area Plan and Transportation Management Plans.
- The Stormwater Public Advisory Group met and provided input on progress toward implementing their recommendations on how best to handle stormwater drainage with increasing density pressures.

Tasks Completed

Task	Description	Compliance Status	Tasks Completed	Effectiveness
ISWMP (2006) Task IV.1	**Public Advisory Committee (MS4).** Conduct at least semiannual meetings of the Public Advisory Committee.	Fully Compliant	The Public Advisory Group (PAG) met on September 18, 2019, January 9, 2020, and June 8, 2020 (see Appendix C). The meeting for March/April was impacted by the Covid-19 response and the City provided an online status update and encouraged attendees for that month's meeting to attend and provide comment on the Newport Corridor CIP	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 City Council. The Newport Corridor CIP project is a major renovation of the storm drain lines coming down Newport and

Task	Description	Compliance Status	Tasks Completed	Effectiveness
			project open house (see Appendix C).	taking water from the South side of Awbrey Butte to the Deschutes River. Thus it is a high priority project with lasting impacts, so the public input focus was efficient and effective despite Covid-19 impacts and the loss of an in person discussion. The PAG is extremely effective in providing staff viewpoints from different perspectives, allowing for distinctive improvements to approaches and products.
ISWMP (2006) Task IV.2	**Public Meeting (MS4).** 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.	Fully Compliant	This task was met years ago when public meetings were held for the Stormwater Master Plan. PAG meetings are open to the public. Additionally, EIPD holds public meetings for their CIP projects that are funded in part by the stormwater utility—this year included an online public meeting for the Newport Corridor project (see Appendix C).	The City has met these tasks in the years prescribed. Additional public meetings are held as appropriate. The virtual open house for the Newport project welcomed 400 visitors over 17 days in April with the average stay of 5 minutes, resulting in 31 questions and comments.
ISWMP (2006) Task IV.3	**Stormwater Quality Volunteer Opportunities (MS4).** Provide support materials to interested volunteers for the identified opportunities.	Fully Compliant	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. See www.bendoregon.gov/CleanWaterWorksKids to view the winning entries. The	The Clean Water Works Youth Video contest had strong representation across school and home schools, with about a dozen participants this year. BendFilm and Central Oregon Daily also donated time and

Task	Description	Compliance Status	Tasks Completed	Effectiveness
			City continues to provide stormwater markers, and trash/sediment cleanup supplies to volunteers interested in marking storm drains and cleaning the city. 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.	effort. One teacher makes it a concerted portion of his curriculum given the educational component. Despite their availability, we did not have volunteers this year for storm drain marking. The City has an entire program focused on volunteers however, and stormwater is listed distinctly in the offerings: https://www.bendoregon.gov/government/departments/human-resources/volunteer-program Upper Deschutes Watershed Council Executive Direct Kris Knight reported an effective cleanup event in 2019. The event drew nearly 300 volunteers including 30 divers, and 1,360 pounds of garbage and invasive weeks were removed.
ISWMP (2006) Task IV.4	**Performance Standards (MS4).** Prepare draft performance standards starting in Year 3 to obtain internal review, and finishing in Year 4	Fully Compliant	Performance standards have been prepared and are being implemented (see table below).	The performance standards have been effective in providing measurable standards to meet.

Task	Description	Compliance Status	Tasks Completed	Effectiveness
	for inclusion in the permit package.			
ISWMP 2022 BMP IV-1	**Public Advisory Group (MS4).** Conduct at least semiannual meetings of the Public Advisory Group.	Fully Compliant	See ISWMP (2006) Task IV.1. The Public Advisory Group met bimonthly this fiscal year (see Appendix C).	Exceeded requirements. See above.
ISWMP 2022 BMP IV-2	**Public Meeting (MS4).** 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.	Fully Compliant	Public meetings are held as needed, the most recent for the Stormwater Master Plan. City Councilors take public comment routinely; and the Stormwater Public Advisory Group meetings are open to the public. The City incorporates the public through open invite to stormwater public advisory group meetings, and several meetings were held by EIPD on CIP projects containing a stormwater component such as the Newport Corridor project. City Council allows for a public comment period at the start of each Council meeting as well, and the City provides multiple avenues to provide input.	Although this specific task was not applicable this year, the City provides several opportunities for public input through public meetings, both in general and for specific projects. A meeting on the ISWMP update was delayed due to the application for an individual permit for the MS4 NPDES Phase II permit that took place in December 2020. Staff will work with DEQ and PAG staff to discuss updates in FY2020-21.
ISWMP 2022 BMP IV-3	**Stormwater Quality Volunteer Opportunities (MS4).** Provide support materials to interested volunteers for the identified opportunities.	Fully Compliant	See ISWMP (2006) Task IV.3 The City has a volunteer coordinator that helps organize storm drain marking. The City worked with BendFilm and Zolo Media to hold the film contest	See ISWMP (2006) Task IV.3 The Clean Water Works Youth Film contest was a success with winners in the middle school, high school, people's choice, and grand prize areas.

Task	Description	Compliance Status	Tasks Completed	Effectiveness
			promoting a water quality message (see www.bendoregon.gov/cleanwaterworkskids). The City also continues to support as a title sponsor the Upper Deschutes Watershed Council's Deschutes River Cleanup held in late July.	The City effectively worked with the Environmental Center to add to their Goose Chase scavenger hunt when Earth Day community events were canceled due to the Covid-19 emergency (see page 4-11).
ISWMP 2022 BMP IV-4	**Performance Standards (MS4).** Implement the performance standards per the ISWMP 2022 schedule in Appendix B.	Fully Compliant	See ISWMP (2006) BMP IV.1	The City has been effective in fully meeting the performance standards (see next subsection).

Public Information and Participation Performance Standards

Coordination with Existing Opportunities/ Activities

Task	Description	Compliance Status	Tasks Comments
1	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.	Fully Compliant	Staff participated actively on the Groundwater Committee and the Stormwater Committee, and the City's Stormwater Program Manager is the project manager for the technical development portion ACWA Illicit Discharge outreach project, advocating for graphics development that have been completed in F2019-20. The City's Stormwater Program Manager was elected to the ACWA Executive Board Secretary/Treasurer position in spring 2019 for the FY2019-20 year.
2	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.	Fully Compliant	See task descriptions above. Staff participated in outreach events to teachers, community festivals, advertisements on social media, and also made materials readily available and advertised our website: www.bendoregon.gov/cleanwaterworks

City Staff and Officials

Task	Description	Compliance Status	Tasks Comments
1	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.	Fully Compliant	See task descriptions above. Staff provided an award ceremony to the winning students of the Clean Water Works Youth Video Contest in July 2019.
2	Train new employees involved with stormwater pollution prevention activities on their role in implementing the local stormwater program.	Fully Compliant	We use Target Solutions and supervisors provide training as appropriate.

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

Task		Compliance Status	Tasks Comments
1	Establish procedures for answering, tracking, and efficiently routing stormwater- related telephone calls to the appropriate staff for handling.	Fully Compliant	See Chapter 5 for additional information.
2	Train staff assigned to answering or responding to telephone calls on the established procedures.	Fully Compliant	See Chapter 5 for additional information.
3	Promote the use of a City telephone number to facilitate public reporting of illicit discharges.	Fully Compliant	See Chapter 5 for additional information.

Storm Drain Inlet Stencils and Signs

Task	Description	Compliance Status	Tasks Comments
1	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.	Fully Compliant	The City has both DAS storm drain markers for public drains with a “Don’t Pollute—Flows to Waterways” message, but also some ‘Only Rain in the Storm Drain” markers for private drains on a first come first served basis. These were used on the drains of Clean Water Works partners who did not already have their storm drains marked in 2018. Stormwater manhole lids have a permanent pollution prevention message stamped into them.
2	As a goal, stencils and signs will be maintained sufficiently to be legible.	Fully Compliant	The “Only Rain in the Storm Drain” message on manhole covered lids is stamped in and thus remains legible over time. City staff began a quality control review of the installed DAS markers in FY2018-19. As a result of these initial efforts, 25 DAS Markers that were no longer legible have been replaced. Given Covid, volunteer efforts did not occur in FY2019-20, but are expected to resume in FY2020-21. In FY2019-20, staff installed 50 DAS stormwater markers.

Coordination with Public Schools (K-12)

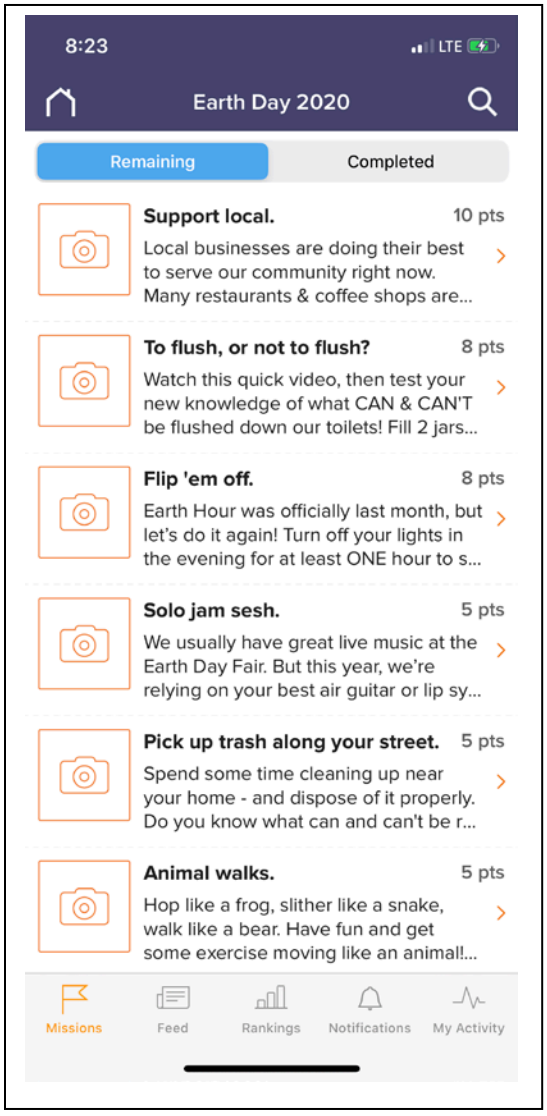
Task	Description	Compliance Status	Tasks Comments
1	The Stormwater Program Manager will either be responsible for distributing, or delegating the distribution of, information about school based outreach and educational materials to public schools within the City. This may include disseminating information 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.	Fully Compliant	The City participated in "Teacher's Night Out" at the High Desert Museum in September 2019, and has a contract with the Environmental Center to conduct utility education, including stormwater, to local elementary students. See related tasks for more information.

Local Community Outreach Program

Task	Description	Compliance Status	Tasks Comments
1	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	Fully Compliant	The City coordinates mainly with Upper Deschutes Watershed Council and the Environmental Center to conduct outreach. City participated in remote Earth Day, Deschutes River Cleanup (aka Stream Stewardship Day) and Quest at the Fall Fest We distributed stormwater information through the Bend Park and Recreation District's recreation guide as it tends to

Task	Description	Compliance Status	Tasks Comments
	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.		have a longer staying power than, say, a daily newspaper. We also ran several of the winning Clean Water Works Kid's contest PSAs on local television stations.

Summary of Effectiveness



The City exceeded its goals for public participation this year. The People's Choice Award contest continued to be effective at leading people to the Clean Water Works website. 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, and now welcomes back Joe Dean an Emmy Award winning producer to mentor the grand prize winner. The film contest entrants have to learn the subject matter well to be able to effectively convey it to the public in a 30-second commercial (see 2018 student film contest winner Marvin professionally shooting part of his winning psa (picture at left). In 2019 staff effectively adjusted to the loss of Munch n Movies to buying air time on local television rather than have it displayed at a movie theater. The local Regal cinema is not cost effective as national contracts have gotten prime times, and McMennamin'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 print side the Bend Park and Recreation Guide is expected to be regularly printed and kept for the wide variety of activities included within, the City's advertising here was not as strong this year given they shut down and these the missed printing as a result of Covid-19. This does remain a strong avenue for print advertising however. Similarly the outreach for Earth Day was limited by Covid-19 concerns, but City staff worked closely with Environmental Center staff to pivot and provide an alternative even via Goose Chase (see picture) that attracted participants to compete in a number of scavenger hunt activities that could be conducted with proper distancing. These included washing the City's wipes video, and picking up trash along the street.

FY2019-2020 Annual Report

Section 5.0 Illicit Discharge Detection and Elimination

Introduction

The purpose of this component is to eliminate discharges of pollutants from illicit connections and illegal dumping to the storm drainage system. This chapter describes the activities conducted during FY2019-20 to address illicit discharges.

Highlights

- The City finished and distributed a new “Secure Your Loads” fact sheet.
- All reports of Illicit Discharges were investigated and followed up on in a timely manner.
- The water conservation performed over 151 sprinkler inspections this year, reducing water use and adjusting sprinkler heads to eliminate overspray onto city streets and sidewalks, thereby reducing dry weather flows.

Tasks Completed

Task	Description	Compliance Status	Tasks Completed	Effectiveness
ISWMP 2006 Task V.1	**Public Education on Illegal Discharges and Improper Disposal.** 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	Fully Compliant	Stormwater staff develop a “Secure Your Loads” fact sheet. This fact sheet highlights the importance of not overloading trucks and covering your load to prevent sediment and other debris from falling or blowing out onto the streets and into the storm drain. A copy of the fact sheet is included in Appendix D. The City continues to implement the Clean Water Works campaign. This year the campaign focused automobile wheel wear and how it can harm our waters. It also included steps vehicle owners can take to reduce micro plastics from automobile and help protect both UICs and the river drainage systems.	The City effectively sent out the “Secure Your Load” fact sheet to 460 contacts including 349 contractors/construction workers with business licenses). Thus the City exceeded the goal of sending out education to over half of an industrial sector. (See Appendix D)

Task	Description	Compliance Status	Tasks Completed	Effectiveness
	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 2006 Task V.2	**Illicit Discharge Reporting Mechanism.** 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.	Fully Compliant	The City has several ways for the public to report an illicit discharge. The City Stormwater Program advertises the public to call the Utility Department main phone number 541-317-3000, option 2. Another option is the Online Citizen Service Request (CSR). This form is available on the City's webpage. Customer service staff are trained to enter the information from these calls or forms into a CSR that is routed to stormwater for follow-up. Alternatively the Code Enforcement phone number 541-312-4908, option 5 in the phone tree is another path for reporting Illicit Discharges. The City continues to use the illicit discharge reporting standard	The City continues to improve its reporting mechanisms and targeted public education on illicit discharges. This year the City received 35 IDDE reports, 20 from the public and 15 from City staff. The City followed up on all reports and issued two Notice of Violations for illicit discharges.

Task	Description	Compliance Status	Tasks Completed	Effectiveness
			operating procedure (See Annual Report FY 2017-18 Appendix D for a copy of the SOP).	
ISWMP 2006 Task V.3	**Post Warnings About Illicit and Illegal Discharges**. In Year 1 the City will determine whether to use stencils (volunteer friendly but temporary), thermoplastic markers, or other options). Should the City decided 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).	Fully Compliant	Per the Standards and Specifications (2010), all new and replaced stormwater manhole covers include a permanent imprinted, "Only Rain in the Storm Drain." The City installed 29 new curb inlets catch basins with this permanent imprint in FY2019-20. 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. The marker includes a general "Don't Pollute" message. City staff installed/replaced 52 markers this year. Of those, staff replaced 10 existing markers that were damaged or missing as part of its QA/QC program. The City also provides on a first come first serve basis a limited number of markers for private stormwater facilities in our community. No requests were made this year.	The City has successfully integrated a method of providing a permanent stormwater quality message on all new public manhole lids and curb inlet drainage facilities. There was some confusion with public manhole 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. Due in part to a lack of more active promotion, and in part to COVID 19 response the City did not have any volunteers affix storm drain markers this year. Instead, staff filled in effectively.
ISWMP 2006 Task V.4	**Post Illicit Discharge Prevention Information on Web Site.** PAC (Now Stormwater	Fully Compliant	Staff continues to coordinate outreach materials with the Stormwater Public Advisory Group and stormwater coordinators.	The City continues to provide information on its website for reporting illicit discharges. The Clean Water Works campaign pages

Task	Description	Compliance Status	Tasks Completed	Effectiveness
	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.		Stormwater related materials are located 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.	include several outreach pieces targeting illicit discharge minimization. Staff received 20 calls this year from concerned citizens noting illicit discharges, which suggests that the contact information on the website and other methods is reaching the public.
ISWMP 2006 Task V.5	**Stormwater System Map.** 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.	Fully Compliant	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: (www.bendoregon.gov/services/mapping-services/interactive-city-map).	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.
ISWMP 2006 Task V.6	**Illicit Discharge Ordinance.** Develop a draft ordinance in Year 1 through 3 of the permit period, finalize, and implement the ordinance by Year 5 of the permit period.	Fully Compliant	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	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.

Task	Description	Compliance Status	Tasks Completed	Effectiveness
			takes primary responsibility for illicit discharge inspection, response and follow-up.	
ISWMP 2006 Task V.7	**Program to Detect and Address Illicit Discharges.** 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.	Fully Compliant	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 a program called Target Solutions to track staff training, exam results and to ensure stormwater performance standard trainings are occurring. In FY2019-20, public works staff were trained in: 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	The City continued to use its tracking system, maintaining a spreadsheet of stormwater-specific follow-up actions, tracking **35** events in FY2019-20 (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 35 IDDE reports this year, 15 (or 43%) 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.

Task	Description	Compliance Status	Tasks Completed	Effectiveness
			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.	
ISWMP 2006 Task V.8	**Minimize Landscape Irrigation Runoff.** 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.	Fully Compliant	Stormwater staff work closely with water conservation group to minimize dry weather flows from irrigation runoff. The water conservation group continued its sprinkler inspection program, offering free sprinkler inspections for utility customers. Staff performed over 151 inspections this year, reducing water use and adjusting sprinkler heads to eliminate overspray onto city streets and sidewalks. In addition to the sprinkler inspection program, the water conservation group responded to 91 irrigation dry weather flow complaints. A copy of the Water Wise Tracking database and example outreach has been included in Appendix D.	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.
SWMP 2006 Task V.10 (Note: Task V.9 was	**Performance Standards.** Prepare draft performance standards starting in Year 3 for	Fully Compliant	Performance standards have been completed and incorporated into the ISWMP 2022 (see the Performance Standard Tables at the end of this	The City's implementation of the performance standards is in full compliance with the ISWMP 2022.

Task	Description	Compliance Status	Tasks Completed	Effectiveness
omitted in error.)	obtaining internal review, and finishing in Year 4 for inclusion in the permit package.		chapter). The ISWMP 2022 was approved by DEQ as part of the WPCF-UIC permit issuance but has not yet been accepted as part of the City's NPDES permit reissuance that remains in negotiation. Performance Standards implementation status is available in Illicit Discharge Control Performance Standard tables below.	
ISWMP 2022 BMP V-1	**Public Education on Illegal Discharges and Improper Disposal (MS4 and UIC).** 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	Fully Compliant	ISWMP 2006 Task V.1 completed tasks.	See ISWMP 2006 Task V.1 effectiveness.

Task	Description	Compliance Status	Tasks Completed	Effectiveness
	irrigation). Progress will be deemed satisfactory if all task deadlines are met.			
ISWMP 2022 BMP V-2	**Illicit Discharge Reporting Mechanism (MS4 and UIC).** Continue to provide and advertise an illicit discharge reporting email and/or phone link on the stormwater pollution prevention web site and outreach.	Fully Compliant	See ISWMP 2006 Task V.2 completed tasks.	See ISWMP 2006 Task V.2 effectiveness.
ISWMP 2022 BMP V-3	**Post Warnings About Illicit and Illegal Discharges (MS4 and UIC).** 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)	Fully Compliant	See ISWMP 2006 Task V.3 completed tasks. See Figure 5-2 for a map showing locations of marked storm drains.	See ISWMP 2006 Task V.3 effectiveness. The City has successfully marked more than 50 per year on average.
ISWMP 2022 BMP V-4	**Post Illicit Discharge Prevention Information on Web Site (MS4 and UIC).** PAG, public or staff to provide input on what to post on web site; SC to	Fully Compliant	See ISWMP 2006 Task V.4 completed tasks.	See ISWMP 2006 Task V.4 effectiveness.

Task	Description	Compliance Status	Tasks Completed	Effectiveness
	approve. City to post information.			
ISWMP 2022 BMP V-5	**Implement Illicit Discharge Regulations (MS4 and UIC).** Continue to implement the illicit discharge sections of Bend Code Title 16 per the schedule in the Code.	Fully Compliant	See ISWMP 2006 Task V.6 completed tasks.	See ISWMP 2006 Task V.6 effectiveness.
ISWMP 2022 BMP V-6	**Implement Performance Standards Related to Illicit Discharge Controls (MS4 and UIC).** Implement the performance standards per the ISWMP 2022 schedule.	Fully Compliant	See ISWMP 2006 Task V.10 completed tasks.	See ISWMP 2006 Task V.10 effectiveness.

Figure 5-1 Reported Illicit Discharge Locations

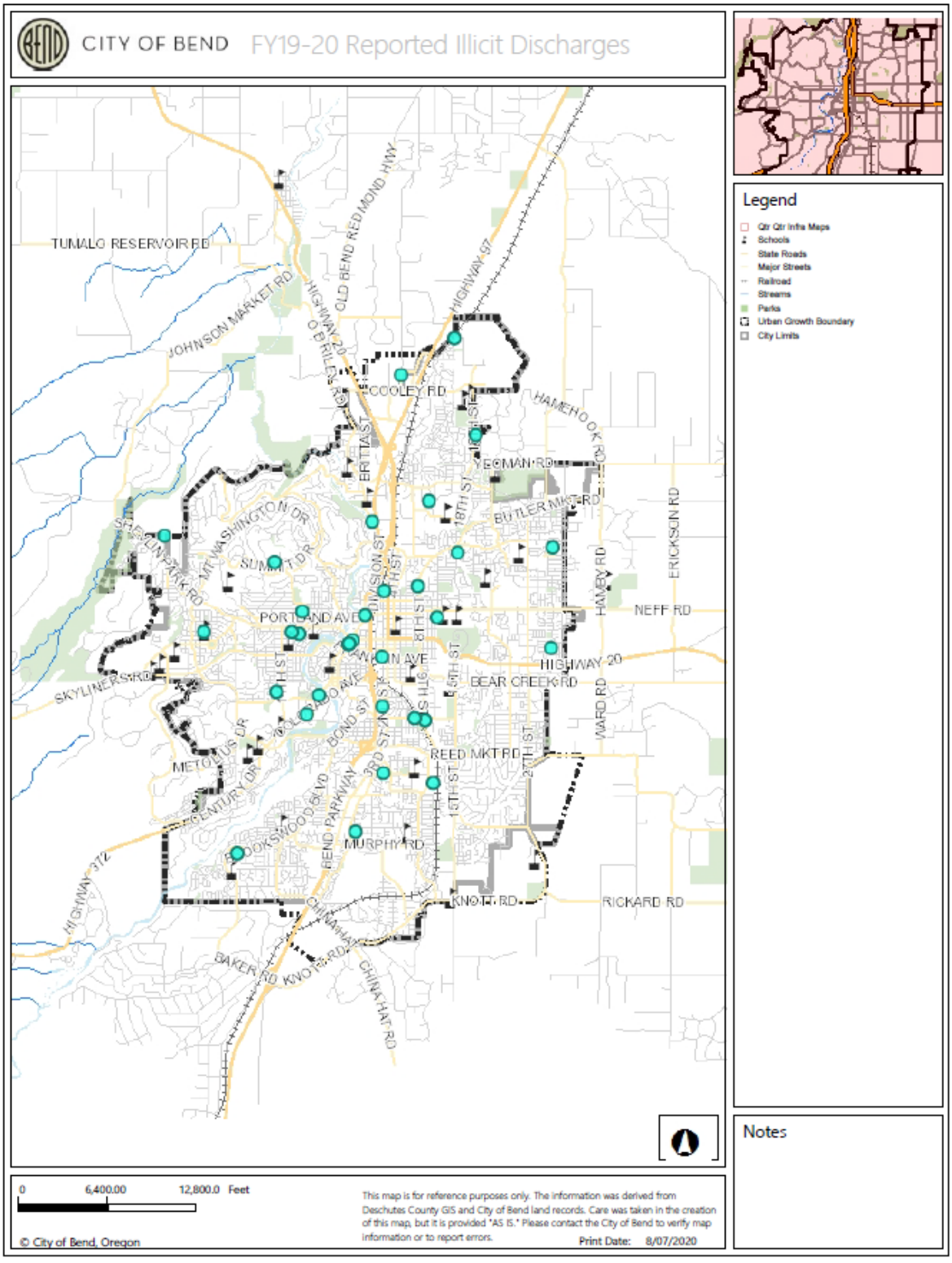
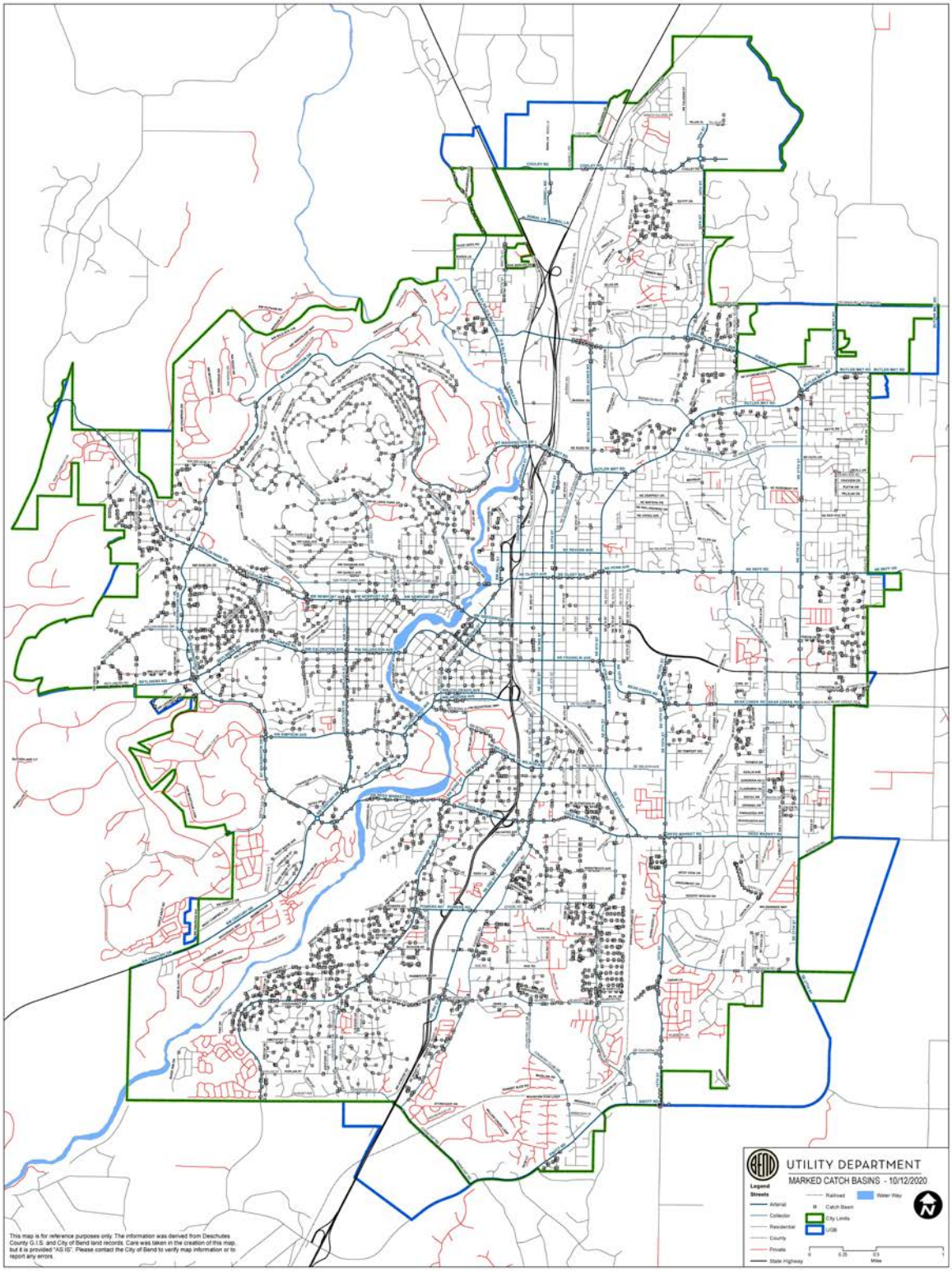


Figure 5-2 Locations of Storm Drain Markers



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Illicit Discharge Control Performance Standards

Prepare For Illicit Discharge Screening and Investigations

Task	Description	Compliance Status	Tasks Comments
1	Receive information on non-stormwater discharge reports;	Fully Compliant	See Task V.2
2	Assure that needed follow-up, elimination, and cleanup of illicit discharges are conducted;	Fully Compliant	See Task V.2
3	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;	Fully Compliant	See Task V.7
4	Make sure required reporting is completed;	Fully Compliant	See Task V.7
5	Distribute information to the City's management and elected officials, as requested, about the resources needed to implement these performance standards;	Fully Compliant	See Task V.7
6	Facilitate the implementation of these performance standards; and	Fully Compliant	See Task V.6
7	Be responsible for sharing activities and findings with the Stormwater Coordinators	Fully Compliant	Staff attends and shares updates during roundtable and other discussions at Stormwater Coordinators meetings
8	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.	Fully Compliant	See Task V.7
9	Keep maps of the completed municipal storm drain system sufficiently accurate to be used for tracing illicit discharges.	Fully Compliant	See Task V.5

Task	Description	Compliance Status	Tasks Comments
10	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.	Fully Compliant	Fact sheets were developed in previous years and staff are trained on-line through Target Solutions. Trainings this year included Concrete Use and Disposal, Illicit Discharge Recognition and Reporting, Paint Use and Disposal, Pressure Washing & Surface Cleaning; Spill Prevention Control and Cleanup; Street Sweeping; Utility Road Repair & Maintenance; Vehicle and Equipment Washing (See Appendix G).

Conduct Field Screening

Task	Description	Compliance Status	Tasks Comments
1	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 any evidence of illicit discharges identified during these field screening activities to the Stormwater Program Manager or designee for follow-up.	Fully Compliant	See Task V.7

Conduct Field Investigations

Task	Description	Compliance Status	Tasks Comments
1	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.	Fully Compliant	See Task V.2
2	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 manholes, and making surface observations. Record and maintain findings, as appropriate.	Fully Compliant	See Task V.2
3	Continue to inspect and follow-up illicit discharges until: a. The source of the illicit discharge is found and eliminated1; or b. The discharge has stopped and cannot be traced to a source"	Fully Compliant	See Task V.2
4	"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."	Fully Compliant	The City received four waste cooking oil complaints in NW Gasoline Alley. Three of the complaints are related to a single waste hauler. City staff issued a NOV and has begun escalating enforcement. The City is also coordinating with the Downtown Business Association, providing educational materials to both the water hauler and restaurants. Staff are routinely inspecting the area for spills and will work to correct this issue in FY20-21.

Follow-Up to Field Screening and Investigations

Task	Description	Compliance Status	Tasks Comments
1	"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."	Fully Compliant	See Annual Report FY 2017-18 Appendix D for a copy of the standard operating procedure.
2	If the discharge is traced to a business, the Stormwater Program Manager, or delegated staff, will distribute appropriate educational and BMP information.	Fully Compliant	Distribution of educational material is a first step with all IDDE follow-up.
3	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.	Fully Compliant	City staff make illicit discharge report follow-up a priority to protect water quality. The Utility Department has an on-call person 24 hours a day, 7 days a week to respond to calls for service. Spill kit and plugs are included in the City response vehicle made available to him/her during their on-call period. Stormwater staff make it a goal to investigate all reports within 24 hours or the following business/work day.
4	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.	Fully Compliant	See BMP Task V-6

Task	Description	Compliance Status	Tasks Comments
	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

Task	Description	Compliance Status	Tasks Comments
1	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.)	Fully Compliant	See BMP Task V.2
2	Collect information for annual reporting including: a. Number of illicit discharges identified as part of staff investigations; b. Number of illicit discharge reported by other city staff and the public; and c. Follow-up activities.	Fully Compliant	See BMP Task V.2

Summary of Effectiveness

The City has made significant progress including improved legal authority and clarifications through the illicit discharge ordinance section and associated Illicit Discharge Manual that now provides for additional education and enforcement in an effort to reduce illicit discharges. Since FY2010-11, the City has been using its customer service database program (INFOR). This program effectively assists in tracking initial stormwater illicit discharge reports and helps verify that the proper staff are notified of the incident. The City also continues to effectively use the online citizen service request to respond to illicit discharge reports. Stormwater staff are also seeing improvements in spill response notification from fire and water/wastewater utilities.

The City has effectively improved its staff training approach that will help reduce illicit discharges, and notification of spills. Illicit discharge detection and elimination efforts naturally appear to focus on sanitary sewer/septic system cross connections.

Table 5.1 IDDE Summary FY2014-15 through FY2019-20

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

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.

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FY2019-2020 Annual Report

Section 6.0 Construction Site Stormwater Activities

Introduction

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 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 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 in-class portion of which was held in FY2019-20.
- The City conducted an active construction site erosion and sediment control program including plan review, site inspections, education and enforcement. Staff conducted 213 erosion and sediment control inspections, provided educational support at 27 pre-construction meetings, and provided 70 verbal warnings along with one Notice of Violation.
- Staff ensured program continuity despite a turnover in the Stormwater Compliance Technician Specialist position by creating a standard operating procedure, and efficiently conducting a hiring and training process, while adjusting onboard due to the Covid-19 response.
- Staff finalized, printed, and distributed stable load enforcement guidance.

Tasks Completed

Task	Description	Compliance Status	Tasks Completed	Effectiveness
ISWMP 2006 Task VI.1	**Evaluate and Update Regulatory Authority and Procedures**	Fully Compliant	In FY2019-20, the City began a routine review of the Design Standards, Construction Specifications, and the	The Stormwater Compliance Specialist has continued to take the lead on inspection form revisions,

Task	Description	Compliance Status	Tasks Completed	Effectiveness
	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.		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. City Staff developed a standard operating procedure titled, “Erosion and Sediment Control (ESC) Compliance,” to outline 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. Specifically, to ensure that new and redeveloped properties properly and accurately address construction site stormwater quality processes as it relates to ESC and proper housekeeping. The City’s stormwater staff continues to work with city inspectors, engineers, contractors and developers to implement Bend Code Title 16 (January 2012). Part of the implementation process is the review of development and construction site plans through E-Plans, an electronic review software along with joint and coordinated inspections. The Stormwater Compliance Specialist	participation in pre-construction meetings to provide ESC education/expectation, ESC verification inspections, and enforcement when needed. An ESC Verification Inspection form is attached in Appendix E of the FY2018-19 annual report, and the Erosion and Sediment Control Compliance standard operating procedure is attached in Appendix E.

Task	Description	Compliance Status	Tasks Completed	Effectiveness
			continues to be responsible for educating, inspecting, regulating and enforcing construction site stormwater ESC compliance. City staff are continuously working to upgrade the City's software systems including permitting.	
ISWMP 2006 Task VI.2	**Construction Site Educational Materials** 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.	Fully Compliant	In FY2019-20, staff finalized a "Secure Your Load" enforcement flyer that is targeted specifically to the construction and trucking community audience, and is sized like a bill stuffer (see Appendix E). The related fact sheet (see Appendix D) was sent out to all the invitees for the Certified Erosion and Sediment Control lead training. During inspections, the City's Stormwater Compliance Specialist distributes a 20-page illustrated ACWA Construction Site Stormwater Guide, and a fact sheet entitled "Sediment Prevention for Businesses" that includes information on both post-construction as well as construction erosion and sediment control. The second page included a segment entitled, "What Can You Do as a Builder/Contractor" with five BMPs and a list of resources for more information. These are	The City has met the schedules for this task in addition to providing additional education materials.

Task	Description	Compliance Status	Tasks Completed	Effectiveness
			also available on our stormwater website. The City continued to provide on our 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." In fact, City staff have several construction site references on its website: www.bendoregon.gov/cleanwaterworks. The 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 • Sample Erosion and Sediment Control Plan - Single Family Residential • Stormwater Maintenance Agreement • Central Oregon Stormwater Manual	

Task	Description	Compliance Status	Tasks Completed	Effectiveness
			• Construction Stormwater Pollution Prevention (NPDES Webcasts) • Construction Stormwater Pollution Prevention Plan Development. The Certified Erosion and Sediment Control Lead course also includes a binder of related educational materials.	
ISWMP 2006 Task VI.3	**Construction Site Inspections and Violation Hotline** Identify a department to monitor the hotline in the third permit year, set up, and publicize the hotline by the fifth permit year.	Fully Compliant	Grading and ESC questions were routed to the City's Stormwater Compliance Specialist to coordinate compliance, investigate, and follow-up on cases. When ESC deficiencies are discovered on-site, the Stormwater Compliance Specialist in coordination with City inspectors, provides verbal education and warnings. If the ESC deficiencies are not addressed by the time the Stormwater Compliance Specialist returns for the next inspection, a formal Stormwater Violation Letter outlining the compliance deficiencies, inspection history, required corrective actions, and potential enforcement procedures may be issued. 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 the	Both commercial construction activity and single-family home starts have stayed elevated compared to prior years. To meet compliance goals, the Stormwater Compliance Specialist and Engineering/Building Inspectors provided verbal education, warnings, and enforcement measures to meet construction-site stormwater management goals. The Stormwater Compliance Specialist 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 erosion control deficiencies in a timely manner. City staff continues to review roles and responsibilities through

Task	Description	Compliance Status	Tasks Completed	Effectiveness
			Inspection Tracking Log Book are attached in Appendix E. Erosion and sediment controls are required on all city issued construction permits. Engineering inspectors, building inspectors, and the Stormwater Compliance Specialist inspected for erosion and sediment controls on these permits, providing guidance and warnings as needed. All infrastructure projects were visited by an Engineering Inspector and/or Stormwater Compliance Specialist. Erosion and Sediment Control issues are forwarded to the Stormwater Compliance Specialist.	the LEAP process in which we work to upgrade our citywide computer software. With a continued high workload on the Community Development and Engineering departments, the Stormwater Compliance Specialist continues to devote a focus on construction site ESC inspections, therefore increasing compliance effectiveness and helping Inspectors with complaint response. The Stormwater Compliance Specialist along with other Utility staff made 213 construction site erosion and sediment control inspections, attended 27 preconstruction meetings, and issued one Stormwater Notice of Violation letter; these events were recorded in the Inspection Tracking Log Book (see Appendix E).
ISWMP 2006 Task VI.4	**Construction Site Education** The SWAT, with input for the PAC, will determine the best way to set up an education program for staff and the public.	Fully Compliant	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 first part of the two part training	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

Task	Description	Compliance Status	Tasks Completed	Effectiveness
	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.		was completed this fiscal year. The initial announcement flyer was sent out via email to local construction contacts together with the Stable Loads fact sheet. The class had 25 sign-ups and attendees. The City contracted with K2 Environmental LLC 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 but for free.	requirements for this task. A copy of the CESCL announcement, workshop evaluation summary, and attendee list have been included in Appendix E. City Staff attended the Center for Watershed Protection Virtual Conference in April 2020 (see Appendix E for the agenda). The City's LEAP (Leading Effective Applications and Processes) efforts will continue through FY2020-21. These involve implementing CityView software that will provide better tracking, and an improved customer service portal thus increasing efficiency and customer experience.
ISWMP 2006 Task VI.5	**Participate in Regional Coordination Activities: Regional Stormwater Control Manual** In Year 1 and possibly 2, City staff will review the draft regional manual sections pertaining to construction	Fully Compliant	The Central Oregon Stormwater Manual (2010) has continued to be incorporated into the City's Design Standards, Construction Specifications, and Bend Code Title 16.	The COSM (2010) is part of the City's development rules, referred to in both the Standards and Specifications and Bend Code Title 16.

Task	Description	Compliance Status	Tasks Completed	Effectiveness
	activities and provide comment as requested. In Years 2 and 3, City staff will tailor necessary portions of the manual to the specifics within Bend. Implementation will begin in Year 3 and continue through Year 5.			
ISWMP 2006 Task VI.6	**Performance Standards** Prepare draft performance standards starting in Year 3 to obtain internal review, and finishing in Year 4 for inclusion in the permit package.	Fully Compliant	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 is being considered by the DEQ as part of the NPDES permit reissuance, expected to be a statewide general permit. A summary of initial implementation status of the New Development, Redevelopment, and Construction Site Controls Performance Standards are available in the table below.	The City's implementation of the performance standards is in full compliance with ISWMP 2022. The City will review the performance standards again when the upcoming NPDES permit conditions are known.
ISWMP 2022 BMP VI-1	**Implement the Stormwater Regulations (MS4 and UIC)** Implement the illicit discharge, erosion and sediment control and pollution prevention sections of Bend Code Title 16 and	Fully Compliant	See Task Completed: ISWMP (2006) Task VI. 1 Evaluate and Update Regulatory Authority and Procedures (MS4/UIC).	See Effectiveness: ISWMP (2006) Task VI. 1 Evaluate and Update Regulatory Authority and Procedures (MS4/UIC).

Task	Description	Compliance Status	Tasks Completed	Effectiveness
	the Standards and Specifications.			
ISWMP 2022 BMP VI-2	**Implement Performance Standards Related to Construction Site Controls (MS4 and UIC)** Implemented the performance standards per the ISWMP 2022 schedule in Appendix B.	Fully Compliant	See Task Completed: ISWMP (2006) Task VI.6 Performance Standards (MS4/UIC).	See Effectiveness: ISWMP (2006) Task VI.6 Performance Standards (MS4/UIC).

New Development, Redevelopment, and Construction Site Controls Performance Standards

Development Plan Review and Permitting

Task	Description	Compliance Status	Tasks Comments
1	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.	Fully Compliant	See Bend Code Title 16, City of Bend Standards and Specifications and Central Oregon Stormwater Manual
2	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.	Fully Compliant	See Bend Code Title 16, City of Bend Standards and Specifications and Central Oregon Stormwater Manual, and City's Maintenance Agreement.
3	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.	Fully Compliant	See Bend Code Title 16, City of Bend Standards and Specifications and Central Oregon Stormwater Manual
4	Ensure municipal capital improvement projects also include stormwater quality control measures during and after construction, as appropriate for each project.	Fully Compliant	Stormwater Utility staff review CIP projects to ensure stormwater quality control measures are included.
5	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.	Fully Compliant	City in conjunction with DEQ staff have developed a map showing which locations in the City are in areas that may be subject to DEQ 1200C permits.
6	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.	Fully Compliant	City has educational materials available on the stormwater website and Stormwater Coordinators are actively developing ways to improve information flow to the development community.

Task	Description	Compliance Status	Tasks Comments
7	Review and refine, if necessary, the stormwater ordinance requiring site planning or design practices and/or post construction controls to protect water quality.	Fully Compliant	A routine update to the Standards and Specifications was initiated, yet ultimately delayed this fiscal year due to COVID-19. Updates will be considered in the next fiscal year.
8	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.	Fully Compliant	General Plan was not updated this year, but existing plan contains protections.

Erosion and Sediment Control

Task	Description	Compliance Status	Tasks Comments
1	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.	Fully Compliant	See BMP tasks above and Appendix E.
2	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.	Fully Compliant	See BMP tasks above.

Construction Inspection

Task	Description	Compliance Status	Tasks Comments
1	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	Fully Compliant	A standard operating procedure outlining the Erosion and Sediment Control Compliance process was developed. See

Task	Description	Compliance Status	Tasks Comments
	and sediment control plan. Measures will also be maintained as needed during construction.		BMP tasks above and Appendix E.
2	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.	Fully Compliant	See BMP tasks above and Appendix E.
3	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."	Fully Compliant	Communication between CDD inspectors and Utility Environmental Compliance is strong. The Utility Environmental Compliance specialist is able to prioritize his work with these criteria.
4	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.	Fully Compliant	Requirements are discussed during plan review, preconstruction meetings, and inspections.
5	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.	Fully Compliant	Complaints and referrals are prioritized.

Education and Outreach

Task	Description	Compliance Status	Tasks Comments
1	"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	Fully Compliant	See BMP tasks above and Appendix E. In addition to the CESCL Training, construction contractors receive educational materials as part of inspections or pre-construction meetings.

Task	Description	Compliance Status	Tasks Comments
	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."		
2	Train, at least biennially, appropriate construction inspection staff on inspection procedures, documentation, and enforcement related to stormwater pollution prevention.	Fully Compliant	See BMP tasks above and Appendix E.
3	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.	Fully Compliant	City staff along with contractors were invited to and attended the CESCL Training. Additionally, the Stormwater Compliance Specialist provides verbal education to all participants in pre-construction meetings including City staff from other departments.
4	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.	Fully Compliant	Upon inspection, the Stormwater Compliance Specialist provided guidance on DEQ permitting by providing contact information and online resource guidance.

Enforcement Actions

The City has the ability to 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 FY2019-20, one formal notice of violation letter was issued, and multiple verbal warnings resulted in compliance without the need for escalation. These events were recorded in the Inspection Tracking Log Book (see Appendix E).

Summary of Effectiveness

The City has successfully implemented the tasks in this component. Staff has 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 continued integration of the Stormwater Compliance Technician 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, which included finalizing and distributing the Stable Loads fact sheet this year, and is working towards improving enforcement staffing. In FY2019-20, despite a turnover in Stormwater Compliance Technician staffing, Utility staff made 213 construction site Erosion and Sediment Control Inspections, attended 27 preconstruction meetings, and issued one formal notice of violation letter. The development of the standard operating procedure was effective in ensuring a smooth transition and training approach for the new employee. A summary of the enforcement actions taken each fiscal year since 2016 can be found below in Table 6.1. Of the 53 active construction sites inspected in FY2019-20, 98% were able to come into compliance without resorting to a stop work order or NOV.

Table 6.1 Enforcement Action Summary

Fiscal Year	# of ESC Inspections	# of Pre-Construction Meetings Attended	# of Verbal Warnings	# of Stop-Work Orders	# of Notice of Violations issued
FY2016-17	106	20	53	0	1
FY2017-18	223	36	54	1	1
FY2018-19	248	35	64	0	1
FY2019-20	213	27	70	0	1

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Section 7.0 Post-Construction Stormwater Management and Redevelopment

Introduction

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

- Worked towards design completion of the Newport Corridor project, within the City's MS4 area, to adequately size and repair infrastructure in the area of South Awbrey Butte to the river in a manner that reduces flows and properly treats stormwater through the use of UICs, planters, and other bioretention and treatment. City engineering staff hosted a virtual open house on the project that involved 400 visitors over 17 days (5-minute average) and resulted in 31 questions and comments on the project.
- Began work on the Infiltration Study geotechnical update to increase understanding.
- Worked 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
- Performed Maintenance Inspections of 37 public stormwater facilities.
- City staff hosted a Center for Watershed Protection (CWP) webinar on May 20, 2020, for both staff and the public entitled "Small Scale BMPs in Urban Areas."

Tasks Completed

Task	Description	Compliance Status	Tasks Completed	Effectiveness
ISWMP 2006 Task VII-1	**Participate in Regional Stormwater Control Manual and Tailor to Bend (MS4 and UIC).** In Year 1 through 2, City staff will review the draft regional manual sections pertaining to post construction controls and provide comment as requested. In Years 2 and 3, City staff will tailor	Fully Compliant	The Central Oregon Stormwater Manual (2010) 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/	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

Task	Description	Compliance Status	Tasks Completed	Effectiveness
	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.			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. In FY2018-19, staff budgeted money for FY2020-21 for an update, but Covid impacts has impacted that budget line item; staff are reviewing in house specific portions instead, such as planting lists, trash enclosure source control guidance, and others related to increasing density with the City.
ISWMP 2006 Task VII-2	**Operation and Maintenance (MS4 and UIC).** 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	Fully Compliant	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	Acquiring maintenance agreements are useful for implementing Bend Code Title 16. In the future, additional guidance on proper maintenance, perhaps 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

Task	Description	Compliance Status	Tasks Completed	Effectiveness
	Year 2. An O&M verification program that may include inspections of a subset of installed controls will begin in Year 4.		commingled facilities. This will require 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 21 new maintenance agreements for a total of 153. 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 uses 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	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 number of inspections of public stormwater facilities conducted in FY2019-20 is down from the 55 inspections in FY2018-19, in part because the position was vacant between January and mid-April and additional time was needed to train the new staff hire. However, the City was effective in quickly turning around to hire and was able to secure positon coverage just prior to the hiring freeze as a result of the Covid-19 pandemic. The training was efficient because of the organization of the departing staffperson with record keeping and providing an updated standard operating procedure prior to departure, and because the training provided by Clean Water Services and the Portland Community College was able to be shifted to an online version that staff could attend in the pandemic situation. The

Task	Description	Compliance Status	Tasks Completed	Effectiveness
			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 manholes, 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 Specialist, the City has improved its intensive O&M verification program. This effort includes incorporating inspection and reporting sheets (see Task VII.3). The O&M verification program is tracked on Sharepoint. On the private side, the City continues to use E-Plans for project review and electronic record keeping but inspects only on complaint or request and for credit program facilities. The City continued efforts to capture new private stormwater facilities into their own database for easier retrieval and data analysis. Over 9,281 private facilities have been entered into the database by the end of FY2019-20, up slightly from 9,274 included by the end of June 2019, focusing	inspections of public stormwater facilities have been conducted and outstanding maintenance and installation deficiencies have been identified. The findings will help improve future maintenance on installation as program staff share findings with operations and engineering staff.

Task	Description	Compliance Status	Tasks Completed	Effectiveness
			mainly on entering newly installed private facilities. In September 2019, staff worked with DEQ UIC program staff to refine a proposed sediment manhole retrofit for open grate drill hole concept that would result in existing drill holes obtaining spill protection and no longer being open to the elements. In December 2019, Utility staff completed a drainage improvement project at 8th and Penn that included a pretreatment swale and UIC. Also in December, and staff and developed a stormwater drainage facility inspection program standard operating procedure (See Appendix F). Staff also began working creating technical guidance for pervious pavement applications. Over the course of the year 37 post construction control facility inspections were conducted by the City's Stormwater Compliance Technicians.	
ISWMP 2006 Task VII-3	**Evaluate and Update Plan Review and Inspection Programs (MS4)** Evaluate existing procedures and identify needed changes in	Fully Compliant	**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	**Inspection and Plan Review.** The City is continuing to work through implementation of Bend Code Title 16 with respect to fine-tuning inspection and enforcement pathways given the significant reorganizations

Task	Description	Compliance Status	Tasks Completed	Effectiveness
	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.		FY2019-20, Stormwater Staff conducted new final warranty inspections of __ vegetated stormwater facilities. Staff attendance at the Vegetated Private Water Quality Management Training hosted by Clean Water Services and Portland Community College in June 2020 and previously has helped provide guidance in training and program development. The Stormwater Compliance Specialist has trained and coordinated closely with building and private engineering inspectors. Staff reviewed plans for Newport Corridor, Galveston, Murphy among others in FY2019-20. **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. **Private Database.** In an effort to protect its drinking water resources, the City of Bend Utility Department continued its pursuit to collect location information for all private stormwater facilities. Location data	internally as city growth continues to increase. The City has been monitoring efforts closely and staff have widespread support to work to refine and improve the processes given the changes occurring in the City. 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. In FY2019-20, the departing Stormwater Compliance Specialist updated the standard operating procedures for post-construction control inspections. These were used to help train the incoming specialist (see Appendix F). 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. These efforts were complicated with the departure of the EIPD director in August 2019, the hiring of the new director mid-year and the departure of the Utility Director in

Task	Description	Compliance Status	Tasks Completed	Effectiveness
			was referenced from a number of 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. When total examination of all digitized building documents is achieved, additional facilities will continue to be added on the basis of utility 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	early July 2020. Copies of the SOP, inspection forms and an abbreviated copy of the tracking spreadsheet are available in Appendix F. The weekly red line reviews have helped Utility Department staff be more involved in 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. This represents about 64% of the commercial and industrial tax lots mapped in the City. Data from new projects continued to be entered. The new Compliance Specialist has some experience and interest to help continue collecting outstanding information from existing developments for the Private Stormwater Facility Verification Program. This work is

Task	Description	Compliance Status	Tasks Completed	Effectiveness
			format by the City of Bend. Historical building and planning permits contain a lot of the 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 staff turnover in early January, however, and the Covid-19 pandemic adjustments in March that resulted in time constraints, and budget cutbacks to temporary staff, FY2019-20 progress was limited.	slated for the winter if construction activities settle down.
ISWMP 2006 Task VII.4	**Post-Construction Control Education** Educate developers, residential do-it-yourselfers and others involved in development and	Fully Compliant	In summer 2019, staff updated the cost data analysis of LID structures with recent local data. The City provided an additional training opportunities associated with post-construction	City staff successfully met the requirements of this task, and pivoted well with the needs for social distancing. Incorporating stormwater design

Task	Description	Compliance Status	Tasks Completed	Effectiveness
	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.		stormwater controls to internal staff and/or the public. In July 2019, staff attended a one-hour webinar, "Stormwater Compliance Services "Stormwater Compliance Success: Using Proactive BMPs to Minimize Regulatory Discharges." The City hosted Center for Watershed Protection. In April 2020, staff attended a TMDL Planning and Implementation Webinar. With the onboarding of new staff person Sam Rossi for the Stormwater Compliance Technician, staff provided Sam a low impact development and side design field training at the start of May using the Better Site Design guide; and post construction control operational and maintenance training by Clean Water Services called "The Nature of Green Infrastructure." In April two staff attended the Center for Watershed Protection's national conference. Staff also attended a Contech webinar "Manufactured Controls with Maintenance in Mind" in May 2020, and hosted a Center for Watershed Protection (CWP) webinar on May 20 2020, for both staff and the public entitled "Small Scale BMPs in Urban Areas." The CWP webinar worked well in sharing with both internal staff and the public	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 the webinar 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.

Task	Description	Compliance Status	Tasks Completed	Effectiveness
			during the Covid-19 pandemic that has prevented in-person meetings. On June 18 staff attended a webinar, "Maintenance Guidelines for Pervious Concrete." (See Appendix F). The five new (as of May 2019) 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)	

Task	Description	Compliance Status	Tasks Completed	Effectiveness
			• Stormwater Maintenance Agreement • Links to EPA website low impact development materials The City helped distribute "The Oregon Rain Garden Guide" and OSU 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 2019) and Fall Fest (October 2019). 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.	
ISWMP 2006 Task VII.5	**Performance Standards** Prepared draft performance standards starting in Year 3 to obtain	Fully Compliant	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	The City is on schedule with implementing the performance standards.

Task	Description	Compliance Status	Tasks Completed	Effectiveness
	internal review, and finishing in Year 4 for inclusion in the permit package.		implementation. Implementation efforts are included in the Performance Standards implementation status, available in the table below.	
ISWMP 2022 BMP VII-1	**Implement the Stormwater Regulations (MS4 and UIC)** Continue to implement the regulations related to post-construction controls of Bend Code Title 16 and the City Standards and Specifications.	Fully Compliant	In February 2020, staff met to address stormwater quality needs for the Newport corridor project in preparation for the 30% plans that were released in March, and met to discuss stormwater standards and specifications updates. City engineering staff hosted a virtual open house on the project that involved 400 visitors over 17 days (5 minute average) and resulted in 31 questions and comments on the project (See Appendix C). The City continues implementation efforts of both the Standards and Specifications and the Bend Code Title 16. Additionally, the Stormwater Compliance Specialist has worked with the Engineering Department to develop a maintenance plan for vegetated areas in the Right-of-way including bio-swales and planter boxes. Additionally, City stormwater staff continues to participate in the design team to address the stormwater runoff for various projects including Empire, Neff, Murphy, and	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. 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.

Task	Description	Compliance Status	Tasks Completed	Effectiveness
			Newport Corridor. Staff continued to provide input on other CIP and internal maintenance projects as well. Utility engineers managed a project to completion in FY2019-20 address a flooding issue at 8th and Olney using a swale and drywell; and rehabilitated a clogged dry well in an alley behind McMenamins. 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 work flow for the Stormwater Compliance Specialist.	
ISWMP 2022 BMP VII-2	**Implement Performance Standards Related to New Development and Redevelopment Controls (MS4 and UIC)** Implemented the performance standards per the	Fully Compliant	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 has been effective in implementing the performance standards.

Task	Description	Compliance Status	Tasks Completed	Effectiveness
	ISWMP 2022 schedule.			

Performance Standards

The City engages in a number of 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.

Lifespan Operation and Maintenance Verification Performance Standards

Targeting Inspections to Achieve the Most Benefit

Task	Description	Compliance Status	Tasks Comments
1	"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."	Fully Compliant	Engineering PMs/inspectors inspect municipal facilities through construction and warranty. Storm facilities are then brought into City's Infor database for inspection and ongoing-maintenance by Utility operations staff. See also Tasks VII.2 and VII.3.
2	Educate business owners and operators about stormwater pollution prevention, separate from the inspection program.	Fully Compliant	See Section 3.0 Public Education and Outreach
3	"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."	Fully Compliant	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.

Task	Description	Compliance Status	Tasks Comments
4	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.	Fully Compliant	See Task VII-3 and VII.4
5	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 or fire) to coordinate and minimize the number of inspections per business.)	Fully Compliant	We discuss as needed maintenance agreements 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

Task	Description	Compliance Status	Tasks Comments
1	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.	Fully Compliant	See Task VII.4
2	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.	Fully Compliant	See Task VII.4

Conducting Inspections

Task	Description	Compliance Status	Tasks Comments
1	Inspectors will review the facility layout to locate the storm drain system and/or stormwater drainage path.	Fully Compliant	See BMP tasks above and Appendix F materials. Inspectors have been trained through Clean Water Services training.
2	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.	Fully Compliant	See BMP tasks above and Appendix F materials. Inspectors have been trained through Clean Water Services training.
3	Inspectors will notify the Stormwater Program Manager of potential to discharge pollutants from non-stormwater discharges, and pollutant exposure to stormwater from a business.	Fully Compliant	See Appendix F.
4	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.	Fully Compliant	See Appendix F.

Task	Description	Compliance Status	Tasks Comments
	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

Task	Description	Compliance Status	Tasks Comments
1	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.	Fully Compliant	See BMP tasks above and Appendix F materials. Inspectors have been trained through Clean Water Services training.
2	Begin enforcement procedures, if appropriate, as per the enforcement authorities as set forth in the City's municipal ordinances.	Fully Compliant	See BMP tasks above and Appendix F materials. Inspectors have been trained through Clean Water Services training.

Summary of Effectiveness

Replacement of dry well in public alley behind McMenamins.

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 it has been seven years since the City has submitted the ISWMP 2022 and 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 continue to improve.

In FY 2020-21, staff will work to improve 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; and working to complete technical guidance on permeable pavements. Staff will also work together with Data Services to improve the processes for collecting data for and updating the private control database.

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FY2019-20 Annual Report

Section 8.0 Municipal Operations and Maintenance

Introduction

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 has 5,230 drywells, 963 drill holes, 4 drain fields, 225 swales (20.6 Acres), and 10,629 catch basins in addition to the over 65 miles of storm pipe, 14 miles of which drain to the Deschutes River. This component also includes reviewing corporation yard practices and making recommendations to improve the quality of stormwater runoff from these facilities.

Highlights

- The sweeping program collected 9,158 cubic yards of material.
- Stormwater Operations maintained:
  - 11,647 catch basins
  - 5,692 UICs (dry wells and drill holes)
  - 606 Sediment Manholes
- Removing 302 yards of material
- Installed 7 drywell inserts at the Bend Airport.
- Updated corporation yard inspection form.

Tasks Completed

Task	Description	Compliance Status	Tasks Completed	Effectiveness
ISWMP 2006 Task VIII-1	**Street Sweeping (MS4).** 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	Fully Compliant	The City continues to implement its Sweeping Operations Plan and in FY2019-20 created a stormwater quality specific plan (see Annual Report FY2016-17 Appendix G, and Appendix G respectively). The City operates 6 sweepers in total, 3 mechanical brooms and 3 air machines. The Stormwater Utility funds three FTEs sweeper positions.	This year the City sweeping program collected 9,158 cubic yards of material and traveled 27,607 miles. 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. The amount of material removed is also related to the type of winter

Task	Description	Compliance Status	Tasks Completed	Effectiveness
	implement the recommendation. The cleaning plan will include a monitoring component.		The sweeping plan is broken down into eight sweeping areas, each area has four zones and each zone requires approximately 40 hours for a sweeper to complete. Routes are designed based on the street classification and community needs. Sweeper operators review routes for accuracy and update the routes when needed. The City has finalized which GPS system will be used for tracking sweeper routes and broom up/down. In FY2020-21 the Fleet Manager will work with the IT 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. A copy of the door hanger was included in FY2017-18 Annual Report, Appendix G.	weather received and the quantity of traction material applied to the road. This winter was less severe than last year. Sweeping in the areas that drain to the river continues to be 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 FY2010-11 through FY2019-20 sweeping data. Stormwater and street staff meet as needed to discuss sweeping efficiency such, as the use of reader boards and the consideration of a callout system. In FY2019-20 staff met to finalize the stormwater quality street sweeping plan, and to discuss potential locations to test out a pre-notification pilot program to increase effectiveness. A pilot project is planned for FY2020-21.
ISWMP 2006 Task VIII-2	**Parking Lot Sweeping (MS4 and UIC).** Monitor the build-up of litter and sediment between sweepings of	Fully Compliant	The City is responsible for sweeping five parking lots throughout town: the downtown parking structure, Mirror Pond parking lots, the Brandis lot, and the Troy Field	Crews have not noticed excessive litter or sediments within the parking lots. See Task VIII-1 for more on effectiveness. The City continues to work

Task	Description	Compliance Status	Tasks Completed	Effectiveness
	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.		parking lot. The Street department is responsible for sweeping public roads and both corporation yards. The Facilities Department is responsible for sweeping parking lots and the parking structure. The City Stormwater Program Manager and the Sweeping Supervisor continue to meet and coordinate on sweeping efficiency.	improve sweeping efficiency over time.
ISWMP 2006 Task VIII-3	**Litter Collection and Material Disposal (MS4).** Establish a Clean Lots/Litter Task Group within Public Works, identify where improved cleaning needed most and develop cleaning plan and budget. Order additional equipment if necessary.	Fully Compliant	The City provides 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 with the DBBA and the City.	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.
ISWMP 2006 Task VIII-4	**Landscape Maintenance Practices (MS4 and UIC).** Establish a Landscaping Task Group within Public Works. Identify opportunities to improve practices and develop landscaping	Fully Compliant	In FY2019-20, the City recognized the culmination of several years of dedicated statewide work with the graphic finalization and release of a series of Oregon Association of Clean Water Agency brochures targeting various needed best management practices. Two of these brochures	The City is continuing to promote and install new stormwater surface controls in the right-of-way via low impact development. At present, the City has 225 landscaped stormwater facilities. The Stormwater Compliance Specialist

Task	Description	Compliance Status	Tasks Completed	Effectiveness
	guidance. Host a workshop on stormwater requirements and BMPs (in FY2010-11). Implement improved practices.		focused on landscape maintenance – one for homeowners seeking to hire a landscape professional, and one for landscape maintenance practices (see Appendix G). The City's Program Manager served as the project manager for the creation of the technical portion of the project, and she served on the steering committee for the graphics team finalization. These guides compliment previous efforts by the City staff, such as working with the OSU extension program to update the water wise landscape guide (2017) to include a section on stormwater facility planning, sizing and shows several low impact development examples, and suitable plants for rain gardens, now newly updated June 2020. (https://catalog.extension.oregonstate.edu/em9136/viewfile).	completed 15 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 in order to collect additional landscape data during inspections.
ISWMP 2006 Task VIII-5	**Improved Catch Basin/ Storm Drain Facilities Cleaning (MS4 and UIC).** Establish a Catch Basin Task Group within Public Works and identify opportunities to improve maintenance practices. Develop	Fully Compliant	Four dedicated stormwater operations staff along with two seasonal staff maintained 11,647 catch basins, 6,813 UICs (dry wells and drill holes), 606 Sediment Manholes, removing 302 yards of material from the stormwater system. In addition to routine cleaning and inspections, field crews completed 32,268	The City's Stormwater Maintenance Program has met its informal goal of inspecting and cleaning every catch basin, drill hole and dry well once per year, removing 302 yards of material from the system in FY2019-20. See Figure 8-2 below for a summary of

Task	Description	Compliance Status	Tasks Completed	Effectiveness
	improved maintenance procedures and implement those procedures.		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 762 inspections. Additionally, the Utility Department works with a landscape contractor to provide maintenance at 29 swale facilities throughout Bend.	FY2010-11 through FY2019-20 Storm Facility Cleaning data.
ISWMP 2006 Task VIII-6	**Spill Prevention, Response Materials, and Training (MS4 and UIC).** 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).	Fully Compliant	Field crews installed **7** drywell inserts at the Bend Airport. The City is continuing to looking for funding to retrofit the last remaining open topped drywell at the Bend Airport. In FY2013-14 Stormwater crews began implementing a drill hole shut-off valve program. In subsequent years, field crews experienced valve clogging issues and began looking for an alternative solution. This year Stormwater staff developed a new catch basin /manhole design, which provides spill control for existing drill holes. Staff shared the draft design with DEQ UIC staff for their input as well. The new design includes a 48” deep sump and 18” trap. City	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. The City installed 7 inserts at the Bend Airport. There is now only one remaining open top drywell. City staff will work to upgrade this drywell in FY2020-21. 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

Task	Description	Compliance Status	Tasks Completed	Effectiveness
			staff recently installed one of the new catch basin/manhole to verify effectiveness. In FY2020-21, crews will monitor for clogging. If accepted by maintenance crews, staff will develop a plan for implement this upgrade on existing drill holes. The Street Department keeps one sander loaded year round for spill response. For larger spills the City maintains two spill containment trailers stocked with absorbents, booms, containment. They are located at each corporation yard (15th Street and Boyd Acres). Staff maintain small spill kits in streets and stormwater vehicles. Staff continue to make spill kits available for all other utility vehicles. Streets and Utility Field Crews receive training annually in spill prevention and response and in illicit discharge prevention (see Appendix G). The City uses integrated pest management (IPM) techniques for weed control but does track its weed control program pesticide use. The reporting information that is provided yearly to the State is available upon request. Stormwater crews carry storm drain	protecting storm drain from spills.

Task	Description	Compliance Status	Tasks Completed	Effectiveness
			plugs and absorbents for spill response.	
ISWMP 2006 Task VIII-7	**Illicit Dumping (MS4 and UIC).** 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.	Fully Compliant	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. This year staff reported **15** of the **32** 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).	The City has implemented educational and inspection best management practices to help reduce the number and severity of illicit dumping incidences. Every storm drain facility is inspected annually by stormwater crews for evidence of illicit discharges.
ISWMP 2006 Task VIII-8	**City-owned Corporation Yards, Industrial and Commercial Facilities (MS4 and UIC).** 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	Fully Compliant	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. This year staff updated the inspection form and completed regularly-scheduled inspections (see Appendix G for an example inspection). In 2016 the underground fuel tanks and pumps at the Pilot Butte Campus were removed. The fueling pad was previously uncovered, posing a risk to	The City has been effective in conducting corporation yards quarterly inspections and initiating discussions with appropriate staff to improve practices as needed. The City has also taken steps to provide basic pre-treatment on open grate UICs at the Boyd Acres facility.

Task	Description	Compliance Status	Tasks Completed	Effectiveness
	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.		stormwater run-on and spills. Stormwater crews have installed Drywell-Catch Basin Inserts in all of the open topped drywells at the Boyd Acres Corporation Yard.	
ISWMP 2006 Task VIII-9	**Detect and Correct Cross-connections and Leaks (MS4).** 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	Fully Compliant	Stormwater crews are trained to look for illicit connections as part of routine inspections. City crews collect CCTV inspections data on all new stormwater pipes both when installed and at the end of the warranty period. Crews verify that pipes are installed per the approved plans. This pipe survey data helps provide base line information and will allow for quicker identification of illicit connections in the future. In FY2018-19 staff performed dry weather inspections on all River Outfalls. In FY2017-18 the City purchased field screening test kits that allow staff to quickly evaluate potential cross connections. The SE Bend Septic to Sewer project is reducing the potential for cross connections by removing septic systems and connecting residents to the sewer system. This project	Implementing CCTV inspections for stormwater together with smoke test in the sanitary sewer have been effective for ensuring that cross-connections are addressed. The SE Bend Septic to Sewer project will help reduce the potential for cross connections by connecting residents to the sewer system. .

Task	Description	Compliance Status	Tasks Completed	Effectiveness
			has the potential to eliminate 1,000 septic systems of the estimated 2,800 septic systems in operating within City limits. See the project website for additional information www.bendoregon.gov/government/se-bend-septic-to-sewer-advisory-committee.	
ISWMP 2006 Task VIII-10	**Promote Commute Alternatives for Municipal Employees and the Public (MS4).** Implement a transportation demand management program 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)	Fully Compliant	The City continued its Transportation Demand Management program (TDM) to encourage the use of alternative modes of transportation. This program is coordinated through the Get There Oregon website. The City has 131 employees that participate in the program. Due to COVID 19 and a high percentage of staff temporally working from home, the incentive pay portion of the program was put on hold. Additionally city staff are creating neighborhood greenways for safer walking and bike routes. The goals of the program are to provide safer connections; reduce cut through traffic and speeds; help people cross busier streets; and guide and help get people to where they are going with pavement markings and signs. Construction on Phase 2 started in May 2020 and was completed in August 2020 on Phase 2 of the project.	The City continued to promote the TDM program, and electronic reporting through the Oregon Drive Less Connect website. City staff efforts saved **19,694** trips and reduced the number of miles driven alone. Creating safer walking and bike routes encourages more people to take alternative transportation than single occupant vehicle travel. These therefore act as a source control for reducing automobile related pollutants.

Task	Description	Compliance Status	Tasks Completed	Effectiveness
			For more information see: https://www.bendoregon.gov/city-projects/infrastructure-projects/neighborhood-greenways	
ISWMP 2006 Task VIII-11	**Performance Standards (MS4 and UIC).** Prepare draft performance standards starting in Year 3 to obtain internal review, and finishing in Year 4 for inclusion in the permit package.	Fully Compliant	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 in FY2013-14. The City is meeting the scheduled requirements, and a summary of the performance standards implementation status has been included in Performance Standard Tables provided below. Performance Standard Trainings are uploaded into Target Solutions, a program used to track staff trainings. Streets and Utility staff completed **1,040** trainings courses in **10** categories including; Utility / Road Repair and Maintenance, Concrete Use and Disposal, Vehicle and Equipment Washing, Winter Road Care, Leaky Equipment and Fueling, Paint Use and Disposal, Pressure Washing and Surface Cleaning, Spill Prevention Control and Cleanup, Stormwater Pollution Prevention and Illicit	The City has met its goal of completing the performance standards for inclusion in the ISWMP 2022 and implementation efforts are progressing effectively. The City is effectively implementing the performance standards as part of the ISWMP 2022.

Task	Description	Compliance Status	Tasks Completed	Effectiveness
			Discharge Recognition and Reporting. See Appendix G for a complete list of staff training.	
ISWMP 2022 BMP VIII-1	**Street Sweeping (MS4 and UIC).** 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.	Fully Compliant	See ISWMP 2006 Task VIII.1 above.	See ISWMP 2006 Task VIII.1 effectiveness.
ISWMP 2022 BMP VIII-2	**Implement Performance Standards (MS4 and UIC).** Implemented the performance standards per the ISWMP 2022 schedule in Appendix B.	Fully Compliant	See ISWMP 2006 Task VIII.11	See ISWMP 2006 Task VIII.11 effectiveness
ISWMP 2022 BMP VIII-3	**Landscape Maintenance Practices (MS4 and UIC).** Ensure updated Standards and Specifications are implemented properly. Incorporate at least 5 stormwater surface controls (bioretention, filter strip, etc.) in right of	Fully Compliant	See also ISWMP 2006 Task VIII.4 The City of Bend Design Standards and Construction Specifications includes the design criteria and construction standards for all public infrastructures in the City of Bend and apply to both City Capital Improvement Projects (CIP's) and to private development projects where infrastructure will	The City installed 10 surface controls in FY2017-18 and an additional 15 this year, well exceeding the 5 required within the ISWMP 2022 permit planning term.

Task	Description	Compliance Status	Tasks Completed	Effectiveness
	way areas over ISWMP 2022 planning term. Properly maintain.		ultimately be owned by the City. The 2018 update was approved by City Council on March 1, 2018, and the 2020 update is currently undergoing review. In addition to the more than five landscaped stormwater facilities installed earlier in the permit period, the City is currently working to incorporate landscape facility measures into the Newport Corridor project. See Section VII for more details.	
ISWMP 2022 BMP VIII-4	**Improve Storm Drain Facilities Cleaning (MS4 and UICs).** Collect data through maintenance management system. Review and refine maintenance schedule if appropriate. Develop and implement improved maintenance procedures.	Fully Compliant	See ISWMP 2006 Task VIII.5	See ISWMP 2006 Task VIII.5 effect nesses
ISWMP 2022 BMP VIII-5	**Promote Commute Alternatives for Municipal Employees (MS4 and UIC).** Implement a Transportation Demand Management Program as	Fully Compliant	See ISWMP 2006 Task VIII.10.	See ISWMP 2006 Task VIII.10 effectiveness.

Task	Description	Compliance Status	Tasks Completed	Effectiveness
	separate funding allows city staff to encourage alternative modes of transportation and reduce single occupancy vehicle trips.			

Storm Drain Facilities Performance Standards

Routine Inspection and Cleaning

Task	Description	Compliance Status	Tasks Comments
1	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.	Fully Compliant	See Task VIII-5
2	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.	Fully Compliant	See Task VIII-5

Record Keeping

Task	Description	Compliance Status	Tasks Comments
1	Report the amount of material removed when cleaning storm drainage facilities in monthly record keeping forms.	Fully Compliant	See Task VIII-5
2	Document and track areas where spills were reported and coordinate with the City's illicit discharge control staff.	Fully Compliant	See Section 5
3	As needed, identify and target areas for: 1) more frequent cleaning throughout the year or just prior to the rainy season; and 2) distribution of public education materials to discourage illegal dumping, etc.	Fully Compliant	See Task VIII-5

Spill Response (Multiple Agencies Involved)

Task	Description	Compliance Status	Tasks Comments
1	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.	Fully Compliant	See Task VIII-6
2	Maintenance staff will establish a response/removal procedure for non-hazardous materials after work hours (e.g., per spill plan).	Fully Compliant	See Task VIII-6
3	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	Fully Compliant	See Task VIII-6

Task	Description	Compliance Status	Tasks Comments
	Program Analyst with records and for educational follow-up, sending a clean-up bill to the responsible party, etc.).		
4	Work with local Fire and Police Departments to obtain summaries or copies of spill reports to the Stormwater Manager or his/her designee.	Fully Compliant	For any spills with the potential to affect Utilities, our Utility Risk Management and Safety Program Manager Ken Vaughan gets advised. As our assigned point person in Utilities, Ken is working with Police and Fire to finalize the update to the Emergency Operations plan.
5	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.	Fully Compliant	See Task VIII-6

Disposal of Material

Task	Description	Compliance Status	Tasks Comments
1	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 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.	Fully Compliant	The City has a dedicated de-watering site used by both stormwater and street sweeping equipment. The concrete pad drains to an oil water separator and discharges into the sanitary sewer system.

Municipal Maintenance Performance Standards

Street Sweeping Frequency

Task	Description	Compliance Status	Tasks Comments
1	Clean streets according to the City's Sweeping Plan.	Fully Compliant	See Task VIII.1

Problems Associated With Efficient Street Cleaning

Task	Description	Compliance Status	Tasks Comments
1	Maintain a consistent sweeping schedule.	Fully Compliant	See Task VIII.1
2	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).	Fully Compliant	See Task VIII.1
3	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.	Fully Compliant	See Task VIII.1
4	Provide adequate staff for conveniently reporting trees interfering with street cleaning.	Fully Compliant	See Task VIII.1

Street Cleaning Maintenance to Maximize Pollutant Removal

Task	Description	Compliance Status	Tasks Comments
1	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.	Fully Compliant	See Task VIII.1

Task	Description	Compliance Status	Tasks Comments
2	Check street cleaning equipment for proper adjustment.	Fully Compliant	See Task VIII.1
3	Operate street cleaning equipment at the speed specified by the manufacturer.	Fully Compliant	See Task VIII.1

Street Cleaning Maintenance to Maximize Pollutant Removal

Task	Description	Compliance Status	Tasks Comments
1	Regularly inspect and maintain street cleaning equipment.	Fully Compliant	See Task VIII.1
2	Replace worn components as required to maximize efficiency.	Fully Compliant	See Task VIII.1

Spill Response

Task	Description	Compliance Status	Tasks Comments
1	Report spills observed on streets immediately for quick response by appropriate personnel.	Fully Compliant	See Task VIII.6
2	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.	Fully Compliant	See Task VIII.6

Record Keeping

Task	Description	Compliance Status	Tasks Comments
1	Track miles swept using a broom odometer or by tracking mileage.	Fully Compliant	See Task VIII.1
2	Track volume or weight of material removed for street cleaning.	Fully Compliant	See Task VIII.1

Task	Description	Compliance Status	Tasks Comments
3	Report summary of sweeping data in annual report.	Fully Compliant	See Task VIII.1
4	Document and track areas where spills were reported and coordinate with the City's illicit discharge control field surveys..	Fully Compliant	See IDDE Chapter V
5	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.	Fully Compliant	See Task VIII.1

Education/Training

Task	Description	Compliance Status	Tasks Comments
1	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.	Fully Compliant	See Task VIII.11

Operations and Maintenance of Pump Stations Performance Standards

Visual Inspections

Task	Description	Compliance Status	Tasks Comments
1	~~Inspect wet wells or forebays once per month for oil spills or other noticeable pollutant discharge.~~ *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." This meets the original intent of the performance standard and does not preclude IDDE efforts (see Section 5.0).*	Fully Compliant	Wet well inspections and cleaning are tracked in INFOR.

Maximize Removal of Pollutants Prior to Discharge

Task	Description	Compliance Status	Tasks Comments
1	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.	Fully Compliant	Wet well inspections and cleaning are tracked in INFOR.
2	If there is a large potential for pollutant discharge, have a spill kit readily available.	Fully Compliant	See Task VIII-6
3	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.	Fully Compliant	City stormwater staff receive yearly training on IDDE. See
4	Store oil absorbent materials in appropriate maintenance vehicles.	Fully Compliant	See Task VIII-6
5	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.	Fully Compliant	See Task V.7.

Disposal

Task	Description	Compliance Status	Tasks Comments
1	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.	Fully Compliant	Neither Corp Yard is within the MS4 system; screenings are ultimately deposited at the landfill.

Education/Training

Task	Description	Compliance Status	Tasks Comments
1	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.	Fully Compliant	Operators attend continuing education courses and Maintain Wastewater Collections Certifications. Also staff are trained yearly on IDDE.
2	Conduct drills as part of the training, as appropriate.	Fully Compliant	City on call staff regularly respond to pump station alarms and receive training on response procedures for both wastewater and stormwater pump stations. The City has one stormwater pump station.

Litter Control Performance Standards

Services

Task	Description	Compliance Status	Tasks Comments
1	Pick up litter receptacles located on City-owned property on a frequent enough basis to minimize or prevent spillage.	Fully Compliant	See Task VIII-3
2	Provide an adequate number of litter receptacles on City-owned property. The City will make every effort to contain litter in receptacles.	Fully Compliant	See Task VIII-3

Education and Enforcement

Task	Description	Compliance Status	Tasks Comments
1	Encourage participation in and assist with the litter removal activities associated with the Stream Stewardship Day or other similar clean-up event.	Fully Compliant	City staff assisted with Deschutes River Cleanup by using golf cart size rigs to collect materials and provide water to participants. (See Section 4)
2	Encourage public education efforts to include an anti-littering message.	Fully Compliant	See Section 3.

Winter Road Care Performance Standards

Winter Road Care to Minimize Pollutant Contribution

Task	Description	Compliance Status	Tasks Comments
1	City will consider full long-term social costs and environmental/public safety risks when determining winter road care strategies.	Fully Compliant	City staff together with Public Advisory Group members discussed winter road care materials in FY2017-18. Street Department staff are trained yearly on Stormwater BMPs to reduce impacts from winter road care activates.
2	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.	Fully Compliant	City trains on this using Target Solutions training with standard fact sheets.
3	Chemical deicers will be properly stored and handled per the chemical storage performance standards.	Fully Compliant	These are stored at our 15th street Corporation Yard.
4	Any solid deicers used shall be properly covered to prevent contact with stormwater, and be stored outside of the 100 year floodplain.	Fully Compliant	Both corporation yards are outside of the MS4 area and 100 year floodplain.

Spill Response

Task	Description	Compliance Status	Tasks Comments
1	Report spills observed on streets immediately for quick response by appropriate personnel.	Fully Compliant	See Section 5
2	Respond to spills in accordance with appropriate response procedures.	Fully Compliant	See Section 5

Record Keeping

Task	Description	Compliance Status	Tasks Comments
1	Track amount of product used per month (chemical deicer and basalt sanding).	Fully Compliant	See Figure 8-3 for a summary of deicer used by month.

Education/Training

Task	Description	Compliance Status	Tasks Comments
1	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.	Fully Compliant	This is included in the fact sheets used with Target Solutions training.

Corporation Yards Performance Standards

General Standards/Training

Task	Description	Compliance Status	Tasks Comments
1	Prepare and maintain a current Corporation Yard Stormwater Pollution Prevention Plan (SWPPP).	Fully Compliant	The SWPP was initially developed 2011 and last updated in 2015.
2	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.	Fully Compliant	See Task VIII.6
3	Mark or stencil inlets to the storm drainage system with a "protect our waters-no dumping"-type message.	Fully Compliant	See Task V.3
4	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.	Fully Compliant	See Task VIII.8
5	Post educational materials about these performance standards and best management practices in appropriate areas.	Fully Compliant	See Task V.7. Using Target Solutions
6	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.	Fully Compliant	See Tasks II.1 and VIII.8
7	Describe activities conducted to educate staff regarding the performance standards in the annual report.	Fully Compliant	See Task V.7

General Housekeeping

Task	Description	Compliance Status	Tasks Comments
1	Dispose of often, material removed from streets and storm drainage facilities to eliminate exposure to rainwater and runoff to the storm drain system.	Fully Compliant	Materials are dewatered at 15th Street (dewatering wash water is ultimately directed to sanitary sewer). Materials are screened to recover basalt rock for winter traction reuse and remaining materials are disposed of at Knott Landfill.

Task	Description	Compliance Status	Tasks Comments
2	Keep chemical storage areas neat and orderly	Fully Compliant	See Task VIII.8
3	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.	Fully Compliant	See Task VIII.8
4	Sweep the corporation yard at least bimonthly	Fully Compliant	Bimonthly sweeping to begin Oct. 2016. Neither corporation yard drains to the MS4/river or is in a time of travel area for UICs. Portions of 15th corporation yards drain to surface swales or sheet flows to adjacent landscaping.
5	Stockpile materials away from streets, gutters, storm drain inlets, or water channels when possible.	Fully Compliant	Occurring at 15th Street.

Refuse Holding Areas

Task	Description	Compliance Status	Tasks Comments
1	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 to evaporate to prevent discharges to the storm drain system. Dispose of the material at an appropriate facility.	Fully Compliant	See Task VIII.8

Auxiliary Storage Areas/Yards

Task	Description	Compliance Status	Tasks Comments
1	Store chemicals in appropriate areas to prevent pollutant discharge to the storm drains.	Fully Compliant	See Task VIII.8

Chemical Storage

Task	Description	Compliance Status	Tasks Comments
1	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	Fully Compliant	See Task VIII.8
2	Review the Spill Prevention Plan and/or other appropriate materials (e.g. MSDS) for hazardous materials storage requirements.	Fully Compliant	City has a service for easy MSDS availability.
3	Store paint and other chemicals in an approved covered containment area. Design the floor so that spilled materials will be contained and easily removed.	Fully Compliant	See Task VIII.8 and Task V.7
4	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.	Fully Compliant	Training occurring. See Task VIII.8 and Task V.7
5	When never-before-used materials are purchased, review the Material Safety Data Sheet (MSDS) to ensure that incompatible materials have the appropriate separation.	Fully Compliant	City has a service for easy MSDS availability and their use is encouraged by Safety and Risk Program Manager regularly at meetings.

Chemical Usage

Task	Description	Compliance Status	Tasks Comments
1	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.	Fully Compliant	See Task VIII.6
2	Review MSDSs.	Fully Compliant	The City subscribes to a MSDS website for quick access.
3	Minimize use of chemicals. Use water-based paints and non-toxic chemicals as much as possible.	Fully Compliant	Training occurring. See Task VIII.8 and Task V.7

Oil Based Paint

Task	Description	Compliance Status	Tasks Comments
1	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.	Fully Compliant	Training occurring. See Task VIII.8 and Task V.7

Water Based Paint

Task	Description	Compliance Status	Tasks Comments
1	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.	Fully Compliant	Training occurring. See Task VIII.8 and Task V.7

Automotive Fluids

Task	Description	Compliance Status	Tasks Comments
1	Collect used fluids and recycle or dispose at an appropriate facility.	Fully Compliant	Training occurring. See Task VIII.8 and Task V.7

Pesticides

Task	Description	Compliance Status	Tasks Comments
1	Refer to the State of Oregon pesticide applicator requirements for pesticide mixing, application, storage and disposal requirements.	Fully Compliant	Only certified applicators use pesticides.
2	Consider using integrated pest management methods. Given a choice, use the least toxic pesticides and herbicides that will accomplish the job.	Fully Compliant	City landscape crews do this taking in consideration location, workload, and staffing. Only certified applicators use pesticides.
3	Apply pesticides at appropriate times to maximize their effectiveness and minimize their potential to run off.	Fully Compliant	See above. Stormwater Program Manager conducted a ride-along in FY 2015-16 with pesticide applicator for mutual education and to confirm.
4	Mix only as much pesticide as needed. Do not mix or load pesticides next to storm drain inlets or watercourses.		See above. Stormwater Program Manager conducted a ride-along in FY 2015-16 with pesticide applicator for mutual education and to confirm.

Solvent/Cleaning Solutions

Task	Description	Compliance Status	Tasks Comments
1	Properly recycle or dispose of used solvents/chemicals	Fully Compliant	Training occurring. See Task VIII.8 and Task V.7

Washing Vehicles/Equipment

Task	Description	Compliance Status	Tasks Comments
1	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.)	Fully Compliant	Training occurring. See Task VIII.8 and Task V.7
2	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.	Fully Compliant	Most vehicles are washed off site through a contract with a local car wash. Boyd Acres Utility Corp Yard has a designated wash area.
3	Visually monitor the wash area to make sure it is consistently used.	Fully Compliant	See Task VIII.8

Fuel Dispensing Areas

Task	Description	Compliance Status	Tasks Comments
1	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.	Fully Compliant	See Task VIII.6
2	Train employees in proper fueling, cleaning, and spill response procedures.	Fully Compliant	See Task V.7. Using Target Solutions.
3	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.	Fully Compliant	Fuel station at 15th Street Corp Yard was removed. Employees use commercial-only fill stations within the community.
4	Design new fueling area(s) to prevent "run-on" of stormwater and runoff of spills	Fully Compliant	Stormwater regulations and staff were consulted in design of a small tank at 15th Street in FY2015-16. COSM was consulted. It has not been installed yet.
5	Install signs reminding people not to "top off" tanks.	Fully Compliant	Majority of fueling is conducted off-site now and that is posted at fueling stations. Small engines only and they do not top off.
6	Consider covering fuel-dispensing areas. Prohibit fueling over open ground; ground should be covered by concrete or asphalt protected with a sealant.	Fully Compliant	See comments above. Fueling is not allowed over open ground.

Fleet Maintenance/Vehicle Parking Areas

Task	Description	Compliance Status	Tasks Comments
1	Inspect equipment for leaks on a regular basis. Use drip pans under leaking vehicles. Repair vehicles with significant leaks.	Fully Compliant	Training occurring. See Task VIII.8 and Task V.7

Task	Description	Compliance Status	Tasks Comments
2	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.	Fully Compliant	Training occurring. See Task VIII.8 and Task V.7
3	Periodically dry sweep the area.	Fully Compliant	Training occurring. See Task VIII.8 and Task V.7
4	Schedule outdoor repair activities for dry weather, if possible. Prevent repair supplies or work material from entering storm drains or watercourses	Fully Compliant	Training occurring. See Task VIII.8 and Task V.7
5	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.	Fully Compliant	Training occurring. See Task VIII.8 and Task V.7

Road Repair and Maintenance Performance Standards

General Practices/Training

Task	Description	Compliance Status	Tasks Comments
1	Schedule excavation and road maintenance activities for dry weather, if feasible.	Fully Compliant	Training occurring. See Task V.7.
2	Equipment repairs and fueling or maintaining vehicles and equipment will be conducted in accordance with the Corporation Yard Performance Standards.	Fully Compliant	Training occurring. See Task V.7.
3	Recycle used motor oil, diesel oil, concrete, broken asphalt, etc. whenever possible.	Fully Compliant	Training occurring. See Task V.7.
4	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.	Fully Compliant	Community Development Department distributes materials as appropriate.
5	Train at least biennially municipal staff and contractors conducting road repair and maintenance to comply with these performance standards.	Fully Compliant	Municipal staff are trained. See Task V.7. The City project manager is responsible for making their contractor aware of local requirements.

Asphalt/Concrete Removal

Task	Description	Compliance Status	Tasks Comments
1	After breaking up old pavement, remove and recycle as much as possible to avoid contact with rainfall and stormwater runoff.	Fully Compliant	Training occurring. See Task V.7.
2	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.	Fully Compliant	Training occurring. See Task V.7.
3	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.	Fully Compliant	Training occurring. See Task V.7.
4	Remove saw-cut slurry (e.g., with a shovel or vacuum) before leaving at the end of the day.	Fully Compliant	Training occurring. See Task V.7

Patching and Resurfacing

Task	Description	Compliance Status	Tasks Comments
1	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.)	Fully Compliant	Training occurring. See Task V.7.
2	Cover and seal manholes and storm drain inlets before applying seal coat, slurry seal, etc.	Fully Compliant	Training occurring. See Task V.7.
3	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.	Fully Compliant	Training occurring. See Task V.7.
4	Use only as much water as necessary for dust control to avoid runoff.	Fully Compliant	Training occurring. See Task V.7.
5	Sweep up as much material as possible and dispose of properly.	Fully Compliant	Training occurring. See Task V.7.
6	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	Fully Compliant	Training occurring. See Task V.7.
7	After the job is complete, remove stockpiles (asphalt materials, sand, etc.) and other extra materials as soon as possible.	Fully Compliant	Training occurring. See Task V.7.
8	If it rains unexpectedly, take appropriate action to prevent pollution of stormwater runoff (e.g., divert runoff around work areas).	Fully Compliant	Training occurring. See Task V.7.
9	Wash down of streets is only permitted if runoff is controlled or contained, or appropriate best management practices are followed.	Fully Compliant	Training occurring. See Task V.7.

Signing and Striping

Task	Description	Compliance Status	Tasks Comments
1	Have spill kits or store spill absorbent materials on trucks to be used in the event of a spill.	Fully Compliant	Training occurring. See Task V.7.
2	Contain and clean up waste materials and dispose of them properly according to the MSDS.	Fully Compliant	Training occurring. See Task V.7.

Equipment Clean-up/Storage

Task	Description	Compliance Status	Tasks Comments
1	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.	Fully Compliant	Training occurring. See Task V.7.
2	If stored outdoors, cover sprayers, patch and paving equipment, if they contain pollutants, to prevent rainfall from transporting pollutants to the storm drain system.	Fully Compliant	Training occurring. See Task V.7. All are stored indoors.
3	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	Fully Compliant	Training occurring. See Task V.7. Corporation yard inspections are conducted quarterly.

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 TDM program continues to be a success as well. 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 to incorporate improved effectiveness through the use of GPS tracking in their sweepers, and working to refine their stormwater sweeping plan for water quality.

Figure 8-1 Street Sweeping Summary

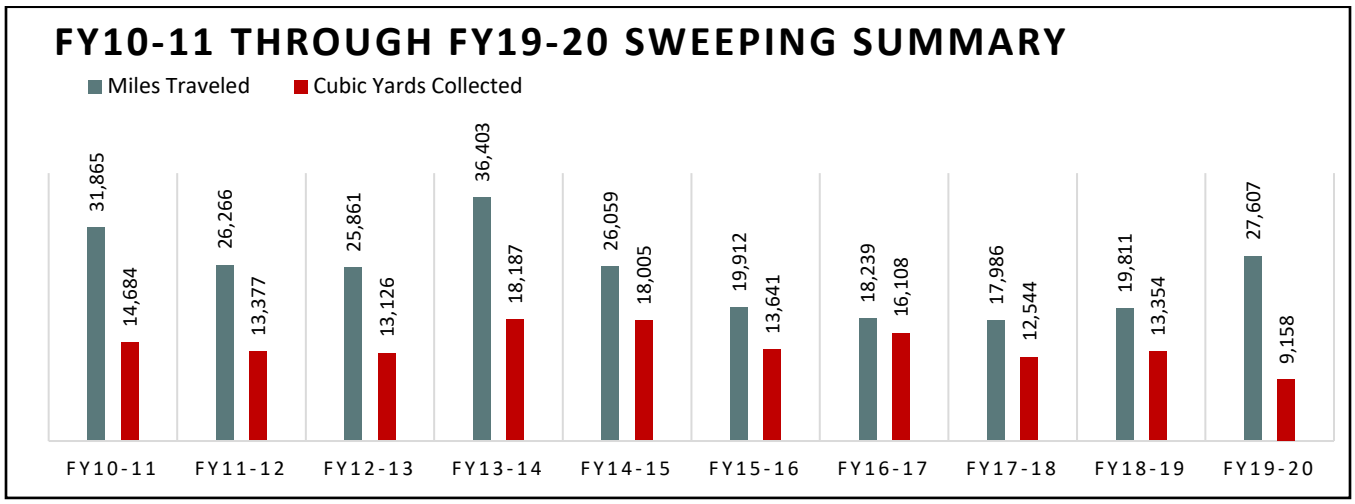


Figure 8-2 Storm Facility Cleaning Summary

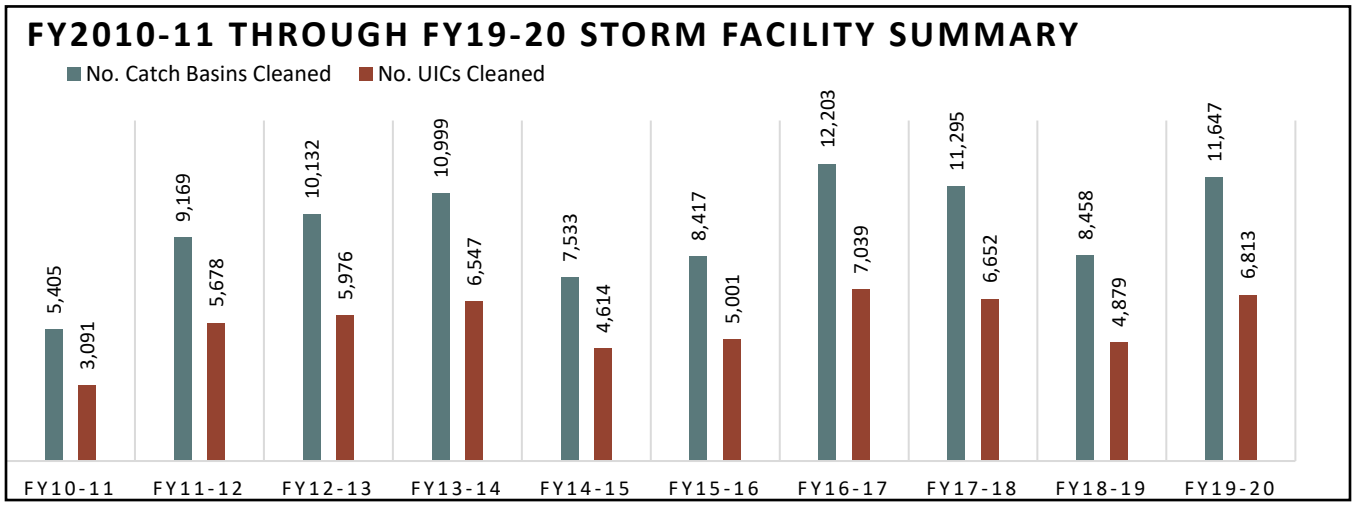


Figure 8-3 Winter Road Care by Month FY2019-20

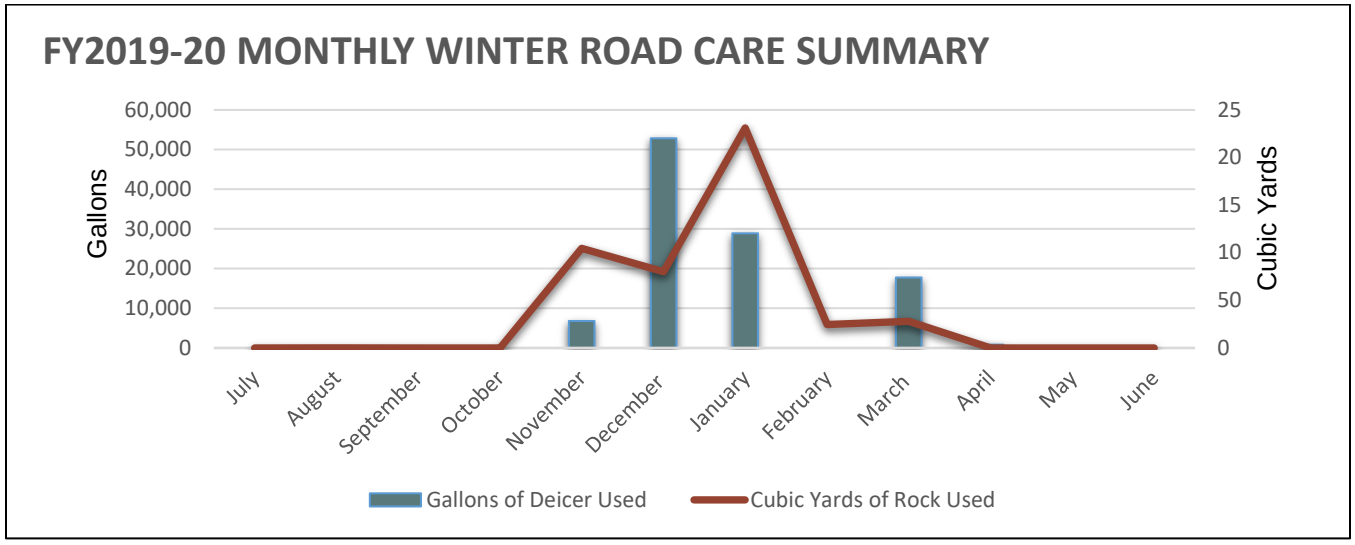
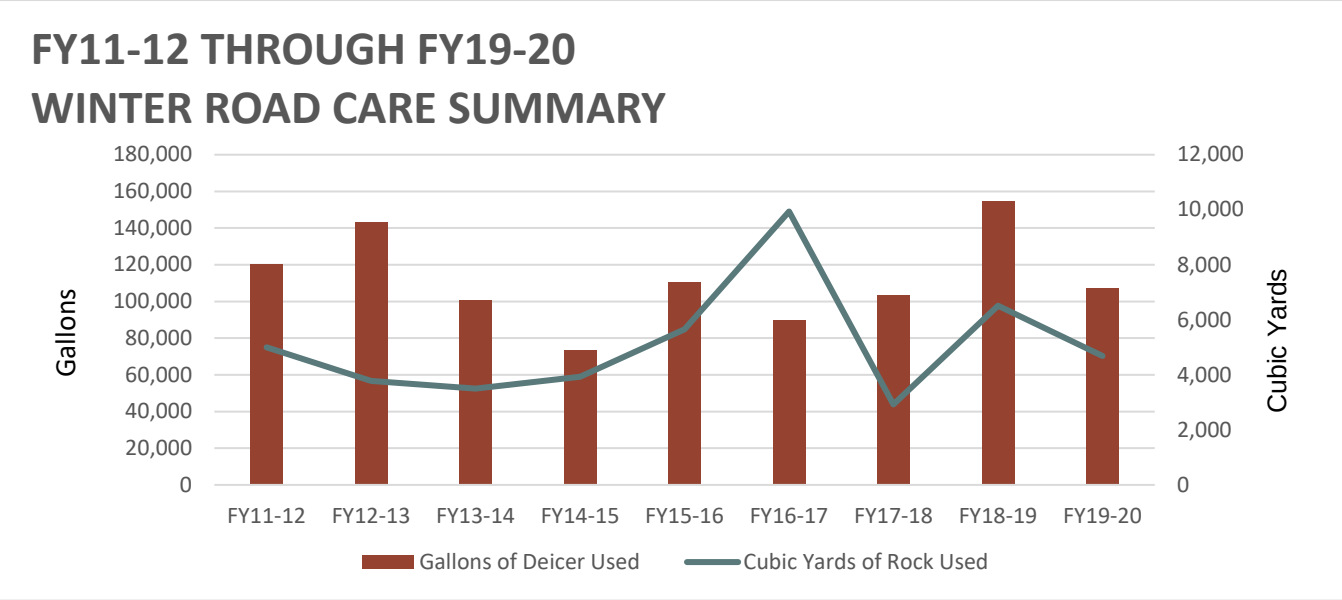


Figure 8-4 Winter Road Care Summary FY2011-12 through FY2019-20



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FY2019-2020 Annual Report
Section 9.0 Monitoring

Introduction

As a Phase II NPDES 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

- 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 into in FY2019-20.
- The City's lab is NELAP certified for drinking water.

Tasks Completed

Task	Description	Compliance Status	Tasks Completed	Effectiveness
ISWMP 2006 Task IX-1	**Monitor Stormwater Discharges to Deschutes River (MS4).** Fund and implement the Upper Deschutes Watershed Council monitoring plan. Analyze and report results.	Fully Compliant	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 hire 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	The completion of the multi-year monitoring report in FY2009-10 along with the updated report in FY2018-19 continue to provide the City with valuable information. This document helps the City understand baseline conditions, water quality trends and helps determine effectiveness of the MS4 stormwater program.

Task	Description	Compliance Status	Tasks Completed	Effectiveness
			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 on 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 FY2017-19 data is being reviewed and an updated report will be completed in FY2020-21.	
ISWMP 2006 Task IX-2	**Enhanced Drinking Water Well Monitoring (UIC).** Form enhanced Monitoring Task Group and develop an enhanced monitoring plan. Obtain funding for enhanced monitoring and prepare annual	Fully Compliant	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. The City continues to monitor drinking water quality as required under the Safe Drinking Water Act. The results of this	The City is meeting the Safe Drinking Water Act groundwater requirements through its regular well monitoring. The latest Water Master Plan update is currently underway. The City continues to collect data to help determine water quality changes over time.

Task	Description	Compliance Status	Tasks Completed	Effectiveness
	monitoring reports (write up in section of NPDES annual report may suffice).		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.	
ISWMP 2006 Task IX-3	**Stormwater Monitoring for UICs (UIC)**. 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.	Fully Compliant	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 form the semi-annual monitoring are summarized and incorporated into the annual report. See ISWMP 2022 BMP IX-2 below, for additional information on the UIC monitoring program.	See ISWMP 2022 BMP IX-2, effectiveness below.
ISWMP 2006 Task IX-4	**Performance standards (MS4 or UIC).** Prepared draft performance standards starting in Year 3 to obtain internal review, and finishing in Year 4 for inclusion in the permit package.	Fully Compliant	Performance standards have been completed and incorporated into the ISWMP 2022. The publically reviewed ISWMP 2022 was submitted in December of 2012 and approved by DEQ as part of the WPCF-UIC permit issuance.	The City continues to effectively implement the performance standards for monitoring as part of the ISWMP 2022 (see below).
ISWMP 2022 BMP IX-1	**Monitoring the Deschutes River (MS4).** Fund and implement a river water monitoring	Fully Compliant	The City continues to collect ambient water quality data since 2004. In March of 2019, the City completed reviewing and	The City continues to monitor the River ambient water quality and periodically

Task	Description	Compliance Status	Tasks Completed	Effectiveness
	plan update starting in FY2018-19 through FY2022-23. Analyze and report results.		compiling the river monitoring data from 2008-2017. The final report title: City of Bend Ambient River Water Quality Monitoring: Deschutes River 2008-2017 was included in Appendix H of the FY2018-19 Annual Report. In FY2019-2022, the City entered into a contact for continued review, compilation, and analysis of ambient water quality data and work has begun on the update incorporating more recent data.	reviews this data for any emerging trends.
ISWMP 2022 BMP IX-2	**Stormwater Monitoring for UICs (UIC).** 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.	Fully Compliant	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 an; all analytes monitored were within compliance levels (See Appendix H).	The City has successfully implemented the stormwater monitoring plan, tracked weather forecasts and deployed sampler's 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.

Task	Description	Compliance Status	Tasks Completed	Effectiveness
	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 occurs, planned and implemented corrective actions will be reported			
ISWMP 2022 BMP VIIII-3	**Implement Performance Standards MS4 and UIC).** Implemented the performance standards per the ISWMP 2022 schedule in Appendix B.	Fully Compliant	See ISWMP 2006 Task IX.4, tasks completed above.	See ISWMP 2006 Task IX.4, effectiveness above.

Monitoring Control Performance Standards

Facility Procedures

Task	Description	Compliance Status	Tasks Comments
1	Maintain a NELAC accredited facility for stormwater-related laboratory testing.	Fully Compliant	Due to a change in how the Oregon Environmental Laboratory Accreditation Program (ORELAP) assesses proficiency testing for laboratories in 2020, in FY2019-20 the City of Bend's Water Quality Lab (COBWQL) had to respond to a deficiency in its quality system. A corrective action was initiated, and is currently on-schedule to correct the proficiency testing deficiency. At no time did the City of Bend Water Quality Lab's accreditation lapse and 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

Task	Description	Compliance Status	Tasks Comments
			accreditation speaks to the fact that the City maintains proper QA/QC and operational procedures.

Preparing For and Conducting Monitoring Activities

Task	Description	Compliance Status	Tasks Comments
1	Maintain sampling plans and quality assurance plans, as appropriate.	Fully Compliant	Completed. See tasks above.
2	Conduct appropriate recordkeeping and reporting.	Fully Compliant	Completed. See Appendix H.

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 through the use of automated grab samplers in conjunction with hand grab samples.

This year the City met its requirements by 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.

Future analysis of ambient water quality data will be more regular given the City has entered into a contract to provide report updates, for increased efficiency.

The City's laboratory maintained its NELAP certification for drinking water.

FY2019-20 Annual Report

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

Introduction

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 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

- Continued implementing the open-grate drywell retrofit plan, installing 7 new drywell inserts at the Bend Airport.
- 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 manhole overtop the existing drill hole. Once initially installed (in early FY2020-21) City staff will monitor for effectiveness before developing a long term retrofit plan.
- Added 44 new drywells with sediment manhole treatment into the City's UIC system, and reported on 13 UICs decommissioned in the registration information being provided to DEQ with this report.

Tasks Completed

Task	Description	Compliance Status	Tasks Completed	Effectiveness
ISWMP 2006 Task X.1	**Drinking Water Protection Area Delineation (UIC).** Existing DWPAs need to be confirmed or replaced with new DWPAs that are based on the best available	Fully Compliant	Task was completed in past years, submitted to OHA and accepted. This information is available on BOOM our online mapping program. The City continues to improve the well location database. In FY2019-20	The original redelineation allowed for increased accuracy, allowing for improved resolution of the regional groundwater model. While the municipal supply wells and

Task	Description	Compliance Status	Tasks Completed	Effectiveness
	information. In FY2007-08 to FY2008-09, investigate the existing drinking water protection area delineations and if necessary redelineate.		staff worked with a consulting firm to review new well information from the FY2018-19 inspections and update the GIS database. This update will be completed in FY2020-21.	DWPA remain unchanged, the City continues to improve its database on private well locations and anticipates updating the online BOOM well map in FY2020-21.
ISWMP 2006 Task X.2	**Drinking Water Protection Plan (UIC).** 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.	Fully Compliant	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 worked with the Stormwater Coordinators group to develop guidance for targeting treatment by the area (drainage to river, wellhead, etc.). These changes were incorporated in the last standard and specifications update.	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 included more stringent development standards in Bend Code Title XVI and the Standards and Specifications.

Task	Description	Compliance Status	Tasks Completed	Effectiveness
	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.			
ISWMP 2006 Task X.3	**Groundwater Vulnerability Study (UIC).** Participate with COIC regarding the review and possible pursuit of a United	Fully Compliant	The City participated on the COIC work group and working together with the City of Redmond to completed a Groundwater Protectiveness study that informed the requirements	This task was completed on schedule and has been a useful tool for protecting Bend`s groundwater supply.

Task	Description	Compliance Status	Tasks Completed	Effectiveness
	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.		of the City's WPCF UIC permit and other similar permits in the Bend area.	
ISWMP 2022 BMP X-1	**Complete Systemwide Assessment (UIC).** Collect necessary data to refine Systemwide Assessment per permit requirements/ request. Submit to DEQ.	Fully Compliant	The City has reviewed and updated the initial Systemwide Assessment in FY2017-18 and submitted it to DEQ in June 2018.	The City was effective in improving data quality in its update of the Systemwide Assessment that was accepted by DEQ.

Task	Description	Compliance Status	Tasks Completed	Effectiveness
ISWMP 2022 BMP X-2	**UIC Registration (UIC).** Continue to update and maintain accuracy of the stormwater geodatabase as needed and provide required updates to DEQ of UIC registration database.	Fully Compliant	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 FY2019-20. Table 10.2 summarizes decommissioned UICs in FY2019-20. Table 10.3 contains a list of anticipated new UICs in FY2020-21 and beyond. Table 10.4 summarizes anticipated UIC decommissioning in FY2020-21.	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.
ISWMP 2022 BMP X-3.1	**UIC Retrofits, Upgrades, or Decommissioning (UIC).** Review results of the approved Systemwide Assessment(s) and WPCF-UIC Permit in light of the Groundwater Protectiveness Model results to determine if any UICs need to be retrofitted or decommissioned to protect water quality.	Fully Compliant	In light of the Groundwater Protectiveness Model results, no additional UICs must be decommissioned or modified at this time to meet permit requirements as a result of the Systemwide Assessment.	
ISWMP 2022	**UIC Retrofits, Upgrades or Decommissioning**	Fully Compliant	The City continued implementing its open-grate drywell retrofit plan.	The City is on schedule to complete the UIC drywell retrofit project

Task	Description	Compliance Status	Tasks Completed	Effectiveness
BMP X-3.2	**(UIC) (continued).** 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.		(See annual report FY14-15, Appendix I). This year City staff purchased 7 new inserts at the Bend Airport (see Table 10.5). A list of UICs decommissioned and planned are included in tables below (see Table 10.2). Table 10.5 summarizes the UIC drywell retrofit project status.	in FY2020-21, with only 11 drywells remaining to be retrofitted. Utility staff will continue to coordinate with Airport Management to fund the remaining insert installations. The City has budgeted $50,000 in FY19-20 for drill hole upgrades that includes the installation of sediment manhole pre-treatment.
ISWMP 2022 BMP X-3.3	**UIC Retrofits, Upgrades or Decommissioning (UIC) (continued).** 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.		The City has continued its program to upgrade open grate drywells. This year the City installed **7** drywells inserts at the Airport, which lies in the County outside of City limits. The airport is continuing to work on secure funding for last remaining drywell that needs upgraded. Staff conducted a field review of drill holes in wellhead protection areas and developed a database to be used to prioritize future retrofits. City stormwater crews are testing a new design for retrofitting drill holes, by placing a sediment manhole overtop the existing drill hole. In FY2019-20, staff prepared to install one of the structures just after the end of the fiscal year. In FY20-21 staff will work to verify that the design will work as intended.	The catch basin inserts installed have been holding up well. Stormwater staff will then begin working upgrading high risk drill holes.

UIC Tables

Table 10.1 New UIC Installation FY2019-20

UIC Number	Install Date	Location/Project
DDW010722	8/9/2019	Murphy Corridor Improvements
DDW010724	8/8/2019	Murphy Corridor Improvements
DDW010726	8/22/2019	Luderman Crossing Ph.1
DDW010727	8/22/2019	Luderman Crossing Ph.1
DDW010728	8/22/2019	Luderman Crossing Ph.1
DDW010729	8/22/2019	Reside at Bear Creek
DDW010730	8/22/2019	Reside at Bear Creek
DDW010731	8/22/2019	Reside at Bear Creek
DDW010739	7/26/2019	5th Street Townhomes
DDW010740	7/26/2019	5th Street Townhomes
DDW010746	9/18/2019	Outcrop
DDW010747	9/18/2019	Outcrop
DDW010748	9/18/2019	Outcrop
DDW010749	9/18/2019	Outcrop
DDW010750	9/18/2019	Outcrop
DDW010751	10/17/2019	Discovery West Ph.1
DDW010752	10/17/2019	Discovery West Ph.1
DDW010753	10/17/2019	Discovery West Ph.1
DDW010754	10/17/2019	Discovery West Ph.1
DDW010755	10/17/2019	Discovery West Ph.1
DDW010756	10/17/2019	Discovery West Ph.1
DDW010757	10/17/2019	Discovery West Ph.1
DDW010758	10/17/2019	Discovery West Ph.1
DDW010759	10/17/2019	Discovery West Ph.1
DDW010760	10/17/2019	Discovery West Ph.1
DDW010761	10/17/2019	Discovery West Ph.1
DDW010762	10/17/2019	Discovery West Ph.1
DDW010763	10/17/2019	Discovery West Ph.1
DDW010764	10/17/2019	Discovery West Ph.1
DDW010765	10/17/2019	Discovery West Ph.1
DDW010776	10/21/2019	Waterbrook at the Old Mill
DDW010777	10/21/2019	Waterbrook at the Old Mill
DDW010778	10/21/2019	Waterbrook at the Old Mill
DDW010779	10/21/2019	Waterbrook at the Old Mill
DDW010784	1/7/2020	Murphy Corridor Ph.3
DDW010785	1/7/2020	Murphy Corridor Ph.3
DDW010786	1/7/2020	Murphy Corridor Ph.3

UIC Number	Install Date	Location/Project
DDW010787	1/7/2020	Murphy Corridor Ph.3
DDW010788	2/4/2020	Sundown Subdivision
DDW010799	10/28/2019	COVO Row
DDW010811	4/17/2020	Murphy Corridor Improvements Ph. 4
DDW010813	4/17/2020	Murphy Corridor Improvements Ph. 4
DDW010814	4/17/2020	Murphy Corridor Improvements Ph. 4
DDW010815	4/17/2020	Murphy Corridor Improvements Ph. 4

Table 10.2 FY2019-20 Decommissioned City of Bend UICs Summary

UIC Number	Description
DDW003237	1781, SKYLINERS RD
DDW003336	1635, BROOKSWOOD BLVD
DDW003066	147, S HWY 97
DDW003490	874, MURPHY RD
DDW007133	4251, NE TUCSON WAY
DDW003112	1056, NE 27TH ST
DDW007467	SW BROOKSWOOD BLVD
DDH009847	BROSTERHOUS RD
DDH009162	122, NE 4TH ST
DDH009220	NE QUIMBY AVE
DDW010099	STREET A/C HIDDEN HILLS
DDW008162	4975, MURPHY RD
DDW007156	NW POLARSTAR AVE

Table 10.3 Anticipated UIC Installation in FY2020-21 and Beyond

UIC Number	Date Added to Database	Location/Project	Comments
DDH010032	6/27/2018	Northwest Stormwater Drainage Improvements - Schedule B	Under Construction
DDW010676	3/22/2019	8th Street Improvements	Under Construction
DDW010677	4/9/2019	H.62430 EAGLE RD. - HANAI CENTER	Under Construction
DDW010678	8/27/2018	Home2Suites Hotel	Under Construction
DDW010686	7/2/2019	Sunlight Solar	Under Construction
DDW010687	7/18/2019	Arena Acres Subdivision Ph.2	Under Construction
DDW010688	7/18/2019	Arena Acres Subdivision Ph.2	Under Construction
DDW010689	7/18/2019	Arena Acres Subdivision Ph.2	Under Construction
DDW010690	6/11/2019	BLSD - New High School	Under Construction
DDW010691	6/11/2019	BLSD - New High School	Under Construction
DDW010692	6/11/2019	BLSD - New High School	Under Construction
DDW010693	6/11/2019	BLSD - New High School	Under Construction
DDW010694	6/11/2019	BLSD - New High School	Under Construction
DDW010695	6/11/2019	BLSD - New High School	Under Construction
DDW010696	6/11/2019	BLSD - New High School	Under Construction
DDW010697	6/11/2019	BLSD - New High School	Under Construction
DDW010698	6/11/2019	BLSD - New High School	Under Construction
DDW010699	6/11/2019	BLSD - New High School	Under Construction
DDW010700	6/11/2019	BLSD - New High School	Under Construction
DDW010701	6/11/2019	BLSD - New High School	Under Construction
DDW010702	6/11/2019	BLSD - New High School	Under Construction
DDW010703	6/11/2019	BLSD - New High School	Under Construction
DDW010704	6/11/2019	BLSD - New High School	Under Construction
DDW010705	6/11/2019	BLSD - New High School	Under Construction
DDW010706	6/11/2019	BLSD - New High School	Under Construction
DDW010707	6/11/2019	BLSD - New High School	Under Construction
DDW010708	6/11/2019	BLSD - New High School	Under Construction
DDW010709	6/11/2019	BLSD - New High School	Under Construction
DDW010710	6/11/2019	BLSD - New High School	Under Construction
DDW010711	6/11/2019	BLSD - New High School	Under Construction
DDW010712	6/11/2019	BLSD - New High School	Under Construction
DDW010713	6/11/2019	BLSD - New High School	Under Construction
DDW010714	6/11/2019	BLSD - New High School	Under Construction
DDW010715	6/11/2019	BLSD - New High School	Under Construction
DDW010716	6/11/2019	BLSD - New High School	Under Construction
DDW010717	6/11/2019	BLSD - New High School	Under Construction
DDW010718	6/11/2019	BLSD - New High School	Under Construction

UIC Number	Date Added to Database	Location/Project	Comments
DDW010719	6/11/2019	BLSD - New High School	Under Construction
DDW010720	6/11/2019	BLSD - New High School	Under Construction
DDW010721	6/11/2019	BLSD - New High School	Under Construction
DDW010732	7/30/2019	Canal Commons Ph.1	Under Construction
DDW010733	7/30/2019	Canal Commons Ph.1	Under Construction
DDW010734	8/17/2019	Arena Acres Ph.3	Under Construction
DDW010735	8/17/2019	Arena Acres Ph.3	Under Construction
DDW010736	9/3/2019	Outpost 44	Under Construction
DDW010737	9/3/2019	Outpost 44	Under Construction
DDW010738	9/3/2019	Outpost 44	Under Construction
DDW010780	9/20/2019	Empire Corridor Improvements Ph.2 - Segment 2	Under Construction
DDW010783	10/2/2019	Maricopa Arms	Under Construction
DDW010789	2/26/2020	Luderman Crossing Ph.2	Under Construction
DDW010790	2/26/2020	Luderman Crossing Ph.2	Under Construction
DDW010791	2/26/2020	Luderman Crossing Ph.2	Under Construction
DDW010792	2/26/2020	Luderman Crossing Ph.2	Under Construction
DDW010793	11/1/2019	Stone Creek Ph.E-2	Under Construction
DDW010794	11/1/2019	Stone Creek Ph.E-2	Under Construction
DDW010795	11/1/2019	Stone Creek Ph.E-2	Under Construction
DDW010796	11/1/2019	Stone Creek Ph.E-2	Under Construction
DDW010797	11/1/2019	Stone Creek Ph.E-2	Under Construction
DDW010798	2/12/2020	12th Street Alley Improvements	Under Construction
DDW010807	3/31/2020	Petrosa Roundabout	Under Construction
DDW010801	3/31/2020	Petrosa Roundabout	Under Construction
DDW010808	3/31/2020	Petrosa Roundabout	Under Construction
DDW010802	3/31/2020	Petrosa Roundabout	Under Construction
DDW010803	3/31/2020	Petrosa Roundabout	Under Construction
DDW010806	3/31/2020	Petrosa Roundabout	Under Construction
DDW010804	3/31/2020	Petrosa Roundabout	Under Construction
DDW010805	3/31/2020	Petrosa Roundabout	Under Construction
DDW010800	3/31/2020	Petrosa Roundabout	Under Construction
DDW010809	2/26/2020	Brian's Cabinets	Under Construction
DDW010810	4/18/2020	H.339 Century Dr.	Under Construction
DDW010816	1/21/2020	2nd & 3rd St Watermain Replacement	Under Construction
DDW010817	3/17/2020	Empire Corridor Improvements Ph.2 - Segment 3	Under Construction
DDW010818	3/17/2020	Empire Corridor Improvements Ph.2 - Segment 3	Under Construction
DDW010819	5/4/2020	Discovery West Ph. 2A & 2B	Under Construction
DDW010820	5/4/2020	Discovery West Ph. 2A & 2B	Under Construction
DDW010821	5/4/2020	Discovery West Ph. 2A & 2B	Under Construction

UIC Number	Date Added to Database	Location/Project	Comments
DDW010822	5/4/2020	Discovery West Ph. 2A & 2B	Under Construction
DDW010823	5/4/2020	Discovery West Ph. 2A & 2B	Under Construction
DDW010824	5/4/2020	Discovery West Ph. 2A & 2B	Under Construction
DDW010825	5/4/2020	Discovery West Ph. 2A & 2B	Under Construction
DDW010826	5/4/2020	Discovery West Ph. 2A & 2B	Under Construction
DDW010827	5/4/2020	Discovery West Ph. 2A & 2B	Under Construction
DDW010828	5/4/2020	Discovery West Ph. 2A & 2B	Under Construction
DDW010829	5/4/2020	Discovery West Ph. 2A & 2B	Under Construction
DDW010830	5/4/2020	Discovery West Ph. 2A & 2B	Under Construction
DDW010831	5/4/2020	Discovery West Ph. 2A & 2B	Under Construction
DDW010832	5/4/2020	Discovery West Ph. 2A & 2B	Under Construction
DDW010833	5/4/2020	Discovery West Ph. 2A & 2B	Under Construction
DDW010834	5/4/2020	Discovery West Ph. 2A & 2B	Under Construction
DDW010835	5/4/2020	Discovery West Ph. 2A & 2B	Under Construction
DDW010836	5/4/2020	Discovery West Ph. 2A & 2B	Under Construction
DDW010837	5/4/2020	Discovery West Ph. 2A & 2B	Under Construction
DDW010838	4/29/2020	Skyline West Subdivision	Under Construction
DDW010839	4/29/2020	Skyline West Subdivision	Under Construction
DDW010840	4/29/2020	Skyline West Subdivision	Under Construction
DDW010841	4/29/2020	Skyline West Subdivision	Under Construction
DDW010842	4/29/2020	Skyline West Subdivision	Under Construction
DDW010843	4/29/2020	Skyline West Subdivision	Under Construction
DDW010844	4/29/2020	Skyline West Subdivision	Under Construction
DDW010847	4/29/2020	Skyline West Subdivision	Under Construction
DDW010848	4/29/2020	Skyline West Subdivision	Under Construction
DDW010849	4/29/2020	Skyline West Subdivision	Under Construction
DDW010850	6/1/2020	Petrosa Subdivision Ph.1	Under Construction
DDW010851	6/1/2020	Petrosa Subdivision Ph.1	Under Construction
DDW010852	6/1/2020	Petrosa Subdivision Ph.1	Under Construction
DDW010853	6/1/2020	Petrosa Subdivision Ph.1	Under Construction
DDW010854	6/1/2020	Petrosa Subdivision Ph.1	Under Construction
DDW010855	6/1/2020	Petrosa Subdivision Ph.1	Under Construction
DDW010856	6/1/2020	Petrosa Subdivision Ph.1	Under Construction
DDW010857	6/1/2020	Petrosa Subdivision Ph.1	Under Construction
DDW010858	6/1/2020	Petrosa Subdivision Ph.1	Under Construction
DDW010859	6/1/2020	Petrosa Subdivision Ph.1	Under Construction
DDW010860	6/1/2020	Petrosa Subdivision Ph.1	Under Construction
DDW010861	6/1/2020	Petrosa Subdivision Ph.1	Under Construction
DDW010862	6/1/2020	Petrosa Subdivision Ph.1	Under Construction

UIC Number	Date Added to Database	Location/Project	Comments
DDW010863	6/1/2020	Marken Summit	Under Construction
DDW010864	6/1/2020	Marken Summit	Under Construction
DDW010865	6/1/2020	Marken Summit	Under Construction
DDW010866	6/1/2020	Marken Summit	Under Construction
DDW010867	5/9/2020	Goodrich Park	Under Construction
DDW010868	7/28/2020	Countryside Ph.1	Under Construction
DDW010869	7/28/2020	Countryside Ph.1	Under Construction
DDW010870	7/28/2020	Countryside Ph.1	Under Construction
DDW010871	7/28/2020	Countryside Ph.1	Under Construction
DDW010872	6/28/2019	Desert Woods - Septic to Sewer	Under Construction
DDW010873	1/28/2020	Shevlin West Ph.1 & 2	Under Construction
DDW010874	1/28/2020	Shevlin West Ph.1 & 2	Under Construction
DDW010875	1/28/2020	Shevlin West Ph.1 & 2	Under Construction
DDW010876	1/28/2020	Shevlin West Ph.1 & 2	Under Construction
DDW010877	1/28/2020	Shevlin West Ph.1 & 2	Under Construction
DDW010878	1/28/2020	Shevlin West Ph.1 & 2	Under Construction
DDW010879	1/28/2020	Shevlin West Ph.1 & 2	Under Construction
DDW010880	1/28/2020	Shevlin West Ph.1 & 2	Under Construction
DDW010881	1/28/2020	Shevlin West Ph.1 & 2	Under Construction
DDW010882	1/28/2020	Shevlin West Ph.1 & 2	Under Construction
DDW010883	1/28/2020	Shevlin West Ph.1 & 2	Under Construction
DDW010884	1/28/2020	Shevlin West Ph.1 & 2	Under Construction
DDW010885	1/28/2020	Shevlin West Ph.1 & 2	Under Construction
DDW010886	1/28/2020	Shevlin West Ph.1 & 2	Under Construction
DDW010887	1/28/2020	Shevlin West Ph.1 & 2	Under Construction
DDW010888	1/28/2020	Shevlin West Ph.1 & 2	Under Construction
DDW010889	1/28/2020	Shevlin West Ph.1 & 2	Under Construction
DDW010890	9/11/2020	Murphy Corridor Improvements Ph. 5	Under Construction
DDW010891	9/11/2020	Murphy Corridor Improvements Ph. 5	Under Construction
DDW010892	9/11/2020	Murphy Corridor Improvements Ph. 5	Under Construction
DDW010893	9/11/2020	Murphy Corridor Improvements Ph. 5	Under Construction
DDW010894	9/11/2020	Murphy Corridor Improvements Ph. 5	Under Construction
DDW010895	9/11/2020	Murphy Corridor Improvements Ph. 5	Under Construction

Table 10.4 Anticipated Decommissioning in FY2020-21 and Beyond

UIC Number	Planned Activity	Project Timing	Project Name/ Comments
DDW002127	Decommissioned	Completed in 2020	Desert Woods and Neighborhood Extension Project; sent UIC testing reports to Kyle Winter on 8/25/20.
DDW008902	Decommissioned	Completed in 2020	Desert Woods and Neighborhood Extension Project; sent UIC testing reports to Kyle Winter on 8/25/20.
DDH009566	Decommissioning	Spring/Summer/Fall 2021	Neff and Purcell Intersection Improvements Project
DDH002068	Decommissioning	Spring/Summer/Fall 2021	Neff and Purcell Intersection Improvements Project
DDH009876	Decommissioning	Winter/Spring 2021	Columbia Roundabouts (1TCSR)
DDH009869	Decommissioning	Winter/Spring 2021	Columbia Roundabouts (1TCSR)
DDW008164	Decommissioning.	Summer 2021	Citywide Safety Improvements (1TCSI) – 3rd & Pinebrook Safety Crossing.

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	Scheduling for FY20-21
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
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

City Facility ID	DEQ UIC #	DEQ Well #	Status
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
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

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.