



Annual Report

MS4 Phase II Individual Permit

National Pollutant Discharge Elimination System MS4 Stormwater Discharge Permit

State of Oregon
Department of
Environmental
Quality

Monitoring Year: FY23-24

Permittee: City of Bend

Date Prepared/Submitted: 11/1/2024

DEQ File No.:102901

Certification and Signature

1. Permittee: City of Bend
2. Legally Authorized Representative: Michael Buettner
3. Title: Water Services Director
4. Email: mbuettner@bendoregon.gov
5. Phone: 541-388-5569

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate 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 (40 CFR 122.22(d)).

Signed by:



Signature D904229C673C4D3...

10/29/2024

Date

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Instructions

At least once per year, the permittee must evaluate compliance with the requirements of the MS4 Phase II individual permit using this Annual Report template. This self-evaluation includes assessment of progress made towards implementing the SWMP control measures in Schedule A, and implementation of actions to comply with any additional requirements identified pursuant to Schedule D.1 (Requirements for Discharges to Impaired Waterbodies).

For each SWMP control measure or activity listed below, please answer all the questions and in the comments field cite any relevant information and/or statistics that helps to illustrate implementation or compliance. If your answer is "No," in the comments field explain the reasons and outline the anticipated implementation timeline. If the requirement does not apply, explain why it is not applicable in the comments field.

No later than November 1 each year the permittee must submit an Annual Report to DEQ. One signed copy and one electronic copy must be submitted to DEQ using the address provided in permit. DEQ can provide an FTP site for submittal of the electronic copy, upon request.

General Information

Permittee Information

6. Permittee Name: City of Bend

7. Type(s): City / County / Special District / Other:

8. DEQ Permit No: 102901

9. EPA File No: 113602

10. Physical Address: 62975 Boyd Acres Road

City: Bend	State: OR	Zip: 97701
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11. Point of Contact: Elisabeth O'Keefe

Title: Program Manager	Email: eokeefe@bendoregon.gov	Phone: 541-317-3018
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12. Mailing Address (*if different*):

City:	State:	Zip:
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Municipal Separate Storm Sewer System (MS4) Information

13. Estimate the area in square mileage served by the MS4: 2.18 square miles

14. Estimate the population served by the MS4: 5,259 within MS4 area, 99,178 Citywide (2020 census)

MS4 Stormwater Discharge Information

Identify the names of all known waters that receive a discharge from your MS4.

Receiving Waterbody	# of Outfalls	Impaired waterbody		Impairment(s)
		303d listed	TMDL issued	
a. Deschutes River	36	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Temperature, turbidity, sedimentation, pH
b.		Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	
c.		Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	
d.		Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	
e.		Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	
f.		Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	
g.		Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	
h.		Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	
i.		Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	
j.		Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	

Coordination Among Permittee and Joint Agreements

Required for permit permittees relying on another entity to satisfy one or more of the requirements of the permit.

15. Is there a joint agreement in place for the implementation of one or more stormwater management program control measures? *Schedule A.2* Yes No

16. If yes, has there been any change to the joint agreement(s) submitted previously? Yes No
 If yes, include, as an attachment, a summary of the changes.
The summary must identify the co-implementers or other entities

Stormwater Management Program Information

17. Discuss the status and overall progress of establishing legal authority to control pollutant discharges into and discharges from the MS4 and to implement and enforce the conditions of this permit. *Schedule A.2.c*
 The City's legal authority for stormwater quality rests in [Bend Code Title 16](#), and the [Standards and Specifications](#), both of which refer to the [Central Oregon Stormwater Manual](#).

Stormwater Management Program Information

18. Is an updated SWMP Document attached? *Schedule A.2.c*

Yes No (*must be submitted by November 1, 2023*)

If necessary, provide an explanation:

19. Identify the publicly accessible website where the SWMP Document is posted. *Schedule A.2.c & A.3.b.i*
<https://www.bendoregon.gov/government/departments/utilities/stormwater-reports-regulations>

If necessary, provide an explanation:

20. Does the SWMP Document include an implementation schedule for control measures that have yet to be or are partially implemented? *Schedule A.2.c*

Yes No

If necessary, provide an explanation:

21. Describe the method used to gather, track, and use SWMP information to set priorities or assess compliance: *Schedule A.2.d*

The City uses several methods to track and document activities, as required in the ISWMP 2023. The CityView application is used to track IDDE complaints, enforcement, plan review, permitting and erosion control inspections. The INFOR asset management system tracks stormwater maintenance, street sweeping & winter road care activities. Relevant public outreach information, performance standards and metrics, are summarized in each Annual Report, and are used to set priorities and assess compliance.

22. Have finances, staff, equipment and other support capabilities been provided to implement the permit? *Schedule A.2.e*

Yes No

If necessary, provide an explanation:

23. During this monitoring year was compliance with the requirements of this permit evaluated? *Schedule B.1*

Yes No

If necessary, provide an explanation:

During FY23-24 the City completed the required Schedule D Special Conditions permit evaluation of 303(d) listed pollutants and BMPs listed in the SWMP document to evaluate the MS4's impact on receiving waters. The 303(d) evaluation is attached to this annual report.

24. During this monitoring year was it determined or reported that discharge from the MS4 caused or contributed to an excursion of an applicable water quality standard? *Schedule A.1.b*

Yes No

If "Yes", complete Water Quality Standards section (p. 21) of this template.

Stormwater Management Program Control Measures

Public Education and Outreach

25. Provide a brief summary of the ongoing public education and outreach program. *Schedule A.3.a*

The City's public education and outreach program activities are implemented by utility stormwater staff. The program is designed to educate the public about the impacts of stormwater discharges on surface and groundwaters and the steps they can take to reduce pollutants. This year the staff continued to implement the Student Video Contest, partnering with BendFilm and Central Oregon Daily. This year's topic repeated last year's theme: "My own front yard: It's a part of the Deschutes watershed!". The PSA's from the previous year's contest were aired on local TV and radio stations. The City also continues to sponsor and participate in the annual Deschutes River Cleanup Event with the Upper Deschutes Watershed Council and maintains a variety of educational resources and volunteer opportunities on its website. In FY 23-24, City staff also hosted an erosion control workshop and CESCL training in May that was open to the public, began a business outreach pilot program effort by partnering with EcoBiz, launched a self guided stormwater walking tour with interpretive signage along Newport Avenue, and began a One Water education pilot program with the Upper Deschutes Watershed Council for 5th graders and high school science students to learn about stormwater, water conservation, and wastewater treatment. In September of 2024, the City completed a series of erosion control BMP installation and maintenance videos to educate the local homebuilding community. The videos can be viewed here: <https://www.bendoregon.gov/government/departments/utilities/erosion-control>

26. Were the required components in place by the implementation date? *Schedule A.3.a.i*

Yes No (*Implementation date: November 1, 2023*)

27. Provide the number of education and outreach activities conducted: *Schedule A.3.a.iii*

During this reporting year: 10

28. During the permit term: 38

If necessary, provide an explanation:

29. Indicate target audiences addressed during this reporting year: *Schedule A.3.a.iv*

- General public, homeowners, homeowner association, schoolchildren, and businesses
- Local elected officials, land use planners and engineers
- Construction site operators
- Businesses
- Other Groups or Entities/Explain below if necessary:

30. Has each target audience been addressed during the permit term? *Schedule A.3.a.iv*

Yes No

31. Indicate target topics addressed during this reporting year: *Schedule A.3.a.iii.B*

- Impacts of illicit discharges on receiving waters and how to report them
- Impacts from impervious surfaces and appropriate techniques to avoid adverse impacts
- BMPs for proper use, application and storage of pesticides, herbicides and fertilizer
- BMPs for litter and trash control
- BMPs for recycling programs
- BMPs for power washing, carpet cleaning and auto repair and maintenance
- Low impact development/green infrastructure
- O&M practices for privately owned stormwater quality management facilities.

Watershed awareness and how storm drains lead to local creeks and rivers, and potential impacts to fish and other wildlife

Construction site control measures and BMPs, including information on where in depth training on erosion prevention and sediment control can be obtained.
 Outreach to construction site operators must be conducted at least twice during the permit term.

Other:

32. Describe the types of educational messages or activities distributed and/or offered during this reporting year.

Schedule A.3.a.iii

During FY23-24, staff attended 5 public events where educational materials were available and/or stormwater topics were discussed or presented. One event in FY23-24 included an in-person two day erosion control workshop and optional CESCL certification training hosted and sponsored by the City stormwater program with training instruction from CWT Training Academy. The free first day of the workshop was attended by 34 people consisting of local builders/contractors as well as City inspectors and engineers and included guest speakers from Oregon DEQ, OSU Cascades, and ACF West. The second day paid CESCL certification training was attended by 15 City staff and 11 local builders/contractors and included field work on BMP installation, a wet weather simulation, and hydroseed application demonstration. Additionally, in FY23-24 the City implemented a pilot program with EcoBiz eco friendly business certifications in June that included mailing 347 interest cards to businesses as well as in person outreach to 30 automotive, landscape, or restaurant businesses for spill prevention and stormwater education including distribution of 15 spill kits. The City will continue the EcoBiz pilot program into FY24-25 for interested businesses to receive certification. For more information on the EcoBiz certification see: <https://ecobiz.org/> The City also posted 11 outreach messages on social media platforms, aired 204 stormwater messages on the radio, 356 tv commercials, and maintains a stormwater public website that hosts multiple educational resources for target audiences listed under Schedule A.3.a.iii. During FY23-24, the City's public stormwater webpages received 5,776 views across 1,795 users.

33. Was outreach to construction site operators working within your community offered during this reporting year?

Schedule A.3.a.iii

Yes No

34. Total number during the permit term: 874

35. Identify and describe the assessment/evaluation of, at least, one education and outreach activity that occurred during this reporting year. Include the assessment process or metric for evaluation, and why this activity was considered successful. *Schedule A.3.a.iv.*

In FY23-24 the City of Bend completed a Stormwater Walking Tour that highlights stormwater management practices that benefit the Deschutes River and groundwater and shares pollution prevention information for Bend citizens. The self-guided tour is located along the recently completed Newport Corridor Improvements, an award-winning multi-phase project combining several types of needed infrastructure improvements, from replacing failing stormwater infrastructure and aging sewer and water pipes to improving safety and connectivity for all users. The goal of the capital project was to reduce the quantity and improve the quality of stormwater discharged into the Deschutes River. The project design incorporates stormwater treatment options, including in-ground filter-type units and Green Infrastructure, like planter boxes, to handle and treat a portion of that water before it gets to the river. These elements are all highlighted on twelve interpretive signs located along a looped walking tour.

Interpretive signs include information about above-ground stormwater facilities, underground infrastructure, native plants, the benefits of trees, preventing illicit discharges, where the stormwater goes, and more. QR codes on the signs also link to a city webpage that provides additional information. The City has recently engaged with the Upper Deschutes Watershed Council to also incorporate the Stormwater Walking Tour into a One-Water Education program targeting 5th graders and high school science students. The education program kicked off in spring 2024 and reached 130 students from 2 schools. Although the education program is in the early stages, pre and post surveys conducted show that students have an overall better understanding of what stormwater is and what personal choices they can make to help keep stormwater clean after participating in the program and field tour. The Stormwater Walking Tour itself also received great feedback from teachers and students. The Walking Tour is the result of a team effort of City staff in the Utilities and Engineering Departments. Digital PDFs of the interpretive signage are available on the City's website at bendoregon.gov/stormwaterwalkingtour

36. Will the assessment be used to inform future stormwater education and outreach efforts? *Schedule A.3.a.vi*

Yes No

37. Provide an explanation:

The One Water education pilot program with the Upper Deschutes Watershed Council and local schools will continue into FY24-25 during fall 2024 and spring 2025. Survey feedback from the initial pilot in 2024 will be used to improve the program in FY24-25.

Public Involvement and Participation

38. Provide a brief summary of the overall progress towards implementation of this control measure. *Schedule A.3.b*

The City continued to meet with its Stormwater Public Advisory Group (PAG) now known as the Utilities Public Advisory Group (UPAG) to focus on stormwater and water conservation topics. During FY23-24, UPAG stormwater topics focused on the Integrated Stormwater Management Plan document, erosion control program changes and implementation, the Stormwater Master Plan, and the updated Groundwater Protectiveness Study. The UPAG also toured the new stormwater walking tour on Newport Avenue to discuss lessons learned and perspectives of the green infrastructure designs and outreach signage. More information on the FY23-24 UPAG meetings including agendas and recordings are available on the City's website at [https://www.bendoregon.gov/government/departments/utilities/utilities-public-advisory-group#:~:text=The%20Utilities%20Public%20Advisory%20Group%20\(UPAG\)%20is%20made%20up%20of,Landscape%20design](https://www.bendoregon.gov/government/departments/utilities/utilities-public-advisory-group#:~:text=The%20Utilities%20Public%20Advisory%20Group%20(UPAG)%20is%20made%20up%20of,Landscape%20design). The City also hosted the annual Student Video Contest where students create 30-second commercials on a watershed topic. See <https://www.bendoregon.gov/government/departments/utilities/educational-resources/one-water-student-video-contest/one-water-student-video-contest-2024> to view the winning entries. The City continues to provide volunteer opportunities for the public to place stormwater drain markers and pick up trash through the Bend Beautification Program. The City also sponsored and partnered with the Upper Deschutes Watershed Council for their annual Deschutes River Cleanup event and Utility department staff worked the day of the event and took all collected trash to the landfill for disposal.

39. Were the required components in place by the implementation date? *Schedule A.3.b.*

Yes No (*Implementation date: November 1, 2023*)

40. Is the SWMP Document posted on a publicly accessible website? *Schedule A.3.b.i*

Yes No

41. Was the publicly accessible website updated during this reporting year? *Schedule A.3.b.i*

Yes No

If necessary, provide an explanation:

Major updates were made to the stormwater webpages in FY24 to organize the layout and consolidate information and resources. The website can be viewed at bendoregon.gov/stormwater.

42. Does the publicly accessible website include illicit discharge complaint/reporting information or procedures? *Schedule A.3.b.i.A*

Yes No

If necessary, provide an explanation:

The City updated the website in FY24 to include a separate report a spill page at <https://www.bendoregon.gov/government/departments/utilities/report-a-spill>

43. Does the publicly accessible website include draft documents issued for public comment, final reports, plans and other official SWMP policy documents? *Schedule A.3.b.i.B*

Yes No

If necessary, provide an explanation:

44. Does the publicly accessible website include links to all ordinances, policies and/or guidance documents related to the construction and post-construction stormwater management control programs, including education, training, licensing, and permitting? *Schedule A.3.b.i.C*

Yes No

If necessary, provide an explanation:

45. Does the publicly accessible website include contact information for relevant staff, including phone numbers, mailing addresses and email addresses? *Schedule A.3.b.i.D*

Yes No

If necessary, provide an explanation:

46. During this reporting year, was a stewardship opportunity created or partnered with another entity? *Schedule A.3.b.ii*

Yes No

If "Yes", summarize the stewardship opportunity(s).

The City partnered with the Upper Deschutes Watershed Council for the July 2023 Deschutes River Cleanup event. City Utility staff provide all garbage collection and disposal for the event and the City's stormwater program is a sponsor for the event.

Illicit Discharge Detection and Elimination

47. Provide a brief summary of the overall progress towards implementation of this control measure. *Schedule A.3.c*

During FY23-24 staff continued to make improvements to data tracking and reporting settings within Cityview to improve efficiency and track staff response to illicit discharges. During FY23-24 the highest three frequency IDDE cases were related to sediment discharge, followed by vehicle related oil/hydraulic fluid leaks and cooking oil/grease. In August of 2024, staff also completed an analysis to identify priority outfalls (see question # 72).

48. Were the required components in place by the implementation date? *Schedule A.3.c.*

Yes No (*Implementation date: November 1, 2024*)

49. Is the MS4 map(s) current? *Schedule A.3.c.i*

Yes No

50. Describe the MS4 map(s) format(s):

The City uses a digital MS4 mapping system through Esri GIS and AutoCAD formats. Mapping accuracy and processes are consistent with industry standards. Portions of the map and digital inventory may be viewed on the City's public website through Bend Data Viewer or downloaded under the data catalog tab, at:

<https://data.bendoregon.gov/pages/interactive-maps> The complete digital inventory can be made available to DEQ or the public upon request.

51. Is the MS4 map(s) included as attachment? Yes No

Or are the digital shapefiles available for electronic submittal? Yes No

52. Is the digital inventory of all known outfalls, with the associated receiving waterbody current? *Schedule A.3.c.i.B*

Yes No

If necessary, provide an explanation:

53. Indicate if the following features are included on your MS4 map:

- Location of all known outfalls, including the requirements in *Schedule A.3.c.i.B*
- Stormwater collection and conveyance system, including the requirements in *Schedule A.3.c.i.C*
- Stormwater structural controls, including the requirements in *Schedule A.3.c.i.C*
- Location of known chronic discharges *Schedule A.3.c.i.D*

If necessary, provide an explanation:

54. Have non-stormwater discharges into the MS4 been prohibited through enforcement of an ordinance or other regulatory mechanism? *Schedule A.3.c.ii*

Yes No

If necessary, provide an explanation:

55. Indicate which of the following have an ordinance or other regulatory mechanism to prohibit discharge to the MS4: *Schedule A.3.c.ii*

- Septic, sewage, and dumping or disposal of liquids or materials other than stormwater into the MS4
- Discharges of washwater resulting from the hosing or cleaning of gas stations, auto repair garages, or other types of automotive services facilities
- Discharges resulting from the cleaning, repair, or maintenance of any type of equipment, machinery, or facility, including motor vehicles, cement-related equipment, and port-a-potty servicing, etc.
- Discharges of washwater from mobile operations, such as mobile automobile or truck washing, steam cleaning, power washing, and carpet cleaning, etc.
- Discharges of washwater from the cleaning or hosing of impervious surfaces in municipal, industrial, commercial, or residential areas (including parking lots, streets, sidewalks, driveways, patios, plazas, work yards and outdoor eating or drinking areas, etc.) where detergents are used and spills or leaks of toxic or hazardous materials have occurred (unless all spilled material has been removed)
- Discharges of runoff from material storage areas, which contain chemicals, fuels, grease, oil, or other hazardous materials from material storage areas
- Discharges of pool or fountain water containing chlorine, biocides, or other chemicals; discharges of pool or fountain filter backwash water
- Discharges of sediment, unhardened concrete, pet waste, vegetation clippings, or other landscape or construction-related wastes
- Discharges of trash, paints, stains, resins, or other household hazardous wastes
- Discharges of food-related wastes (grease, restaurant kitchen mat and trash bin washwater, etc.)

If necessary, provide an explanation:

56. Is the permittee implementing an enforcement and response procedure as required? *Schedule A.3.c.iii*

Yes No

57. Is there a phone number, webpage, and/or other communication channel publicized for the public use to report illicit discharges? *Schedule A.3.c.iv.A*

- Phone number(s)
- Webpage(s)
- Other communication channels

If necessary, provide an explanation:

58. Provide the number of complaints received during this reporting year. *Schedule A.3.c.iv.D*

Number: 55 (*complaints related to IDDE*)

59. On average, how long did it take to respond to complaints? *Schedule A.3.c.v.B*

In working days: 0.15

60. Provide the number of complaints that included notification of the Oregon Emergency Response System during this reporting year. *Schedule A.3.c.iv.B*

Number of notification: 0

61. Provide the number of complaints where staff performed an investigation during this reporting year. *Schedule A.3.c.iv*

Number: 55 (*investigations related to IDDE*)

62. On average, how long did it take to conduct an initial investigation? *Schedule A.3.c.iv.B*

In working days: 1.94

63. Provide the number of illicit discharges discovered and eliminated during this reporting year. *Schedule A.3.c.v*

Number: 55

64. On average, how long did it take to eliminate an illicit discharge? *Schedule A.3.c.iv.B*

In working days: 1.91

65. Provide the number times the escalating enforcement procedure was used to eliminate illicit discharge during this reporting year. *Schedule A.3.c.iv.D*

Number: 45

Do any of the illicit discharges involve the repair or replacement of the wastewater and/or storm sewer conveyance systems? *Schedule A.3.c.iv.B*

Yes No NA

If necessary, provide an explanation:

66. Provide the number of illicit discharges that were referred to another entity during this reporting year. *Schedule A.3.c.iv.C*

Number: 0

67. On average, how long did it take to notify the entity(s)?

In working days: N/A

If necessary, provide an explanation:

68. Indicate which of the following are included in the complaints or reports tracking documentation: *Schedule A.3.c.iv.D*

- Date the complaint was received and, if available, the complainant's name and contact information
- Name of staff responding to the complaint
- Date the investigation was initiated
- The outcome of the staff investigation
- Corrective action(s) taken to eliminate the illicit discharge
- The responsible party for the corrective action(s)

The status of enforcement procedure(s), when necessary
 The date the corrective action(s) was completed and staff who evaluated final compliance

If necessary, provide an explanation:

69. Provide percentage of outfalls inspected. *Schedule A.3.c.v*

Known outfalls screened this reporting year: 22/36 or 61%

70. Known outfalls screened during the permit term: 100%

If necessary, provide an explanation:

As part of the 2023-2024 outfall reconnaissance effort staff identified and screened 36 outfalls. Staff screened 22 outfalls in August 2023 and the remaining 14 outfalls in August 2024. Staff found 2 outfalls that had not been previously identified that were screened and are being added to the City's GIS database. There were also 3 previously identified outfalls that were found to be abandoned due to redevelopment and have been removed from the list. Because of these changes, there may be variability with previously reported numbers. Staff also identified several points of interest that were found to be pump intake locations for Bend Parks and Recreation as well other types of infrastructure such as pass through culverts for bridge abutments. Moving forward the City has identified 36 outfalls connected to the public stormwater system.

(The permittee must conduct dry weather screening of at least 50% of their MS4 outfalls no later than September 30, 2023. The permittee must conduct dry weather screening at an additional 25% of their outfalls each year after.)

71. Provide percentage of outfalls inspected as part of field screening of priority location. *Schedule A.3.c.v.A*

Priority location outfalls screened this reporting year: 22/36 or 61% were screened in FY23-24. The remaining outfalls were screened in FY24-25.

72. Priority location outfalls screened during the permit term: 100%

If necessary, provide an explanation:

In August 2024, the City of Bend conducted an analysis to determine priority outfalls based on the following contributing factors of outfall drainage basins: soil infiltration rate, soil erodibility, slope, land cover, road area, drainage basin area, zoning, length of contributing storm main pipe, number of active storm drains in each drainage, and the number of IDDE cases in each drainage. A map and weightings of these factors can be found as an attachment. Traffic counts and population density were omitted from the total weighting due to incomplete data. Major roads were defined as highways, arterials, or corridors and assigned a 40ft width to calculate road area for each outfall drainage. As of August 2024, 100% of all outfalls have been screened (36 total). Of the 36 outfalls, there are 2 with very high priority, 3 with high priority, 6 with moderate priority, 15 with low priority, and 8 with very low priority, which can be found on the attached map. 2 of the 36 outfalls could not be ranked because they were newly discovered in August 2024 and the drainage basins have not yet been delineated using GIS by staff.

73. Indicate which of the following dry-weather field screening activities have been performed in the last year: *Schedule A.3.c.v*

General observation
 Field Screening and Analysis
 Pollutant Parameter Action Levels
 Laboratory Analysis

If necessary, provide an explanation:

During FY23-24, observation and field screenings of outfalls were conducted in August 2023. Dry weather field screening was also conducted in August of 2024. This resulted in no action levels or lab analysis.

74. If flow is observed and the source is unknown, provide a brief description of the field investigation and analysis process. *Schedule A.3.c.v.C*

Field evaluation of upstream drainage area supplemented by the use GIS data (land use, tax lots, stormwater system). Upstream points such as hard surfaces, manholes and catch basins are observed manually for flow/associated discharge. The system is investigated upstream until flow is no longer observed and/or no probable source is identified. If the source cannot be identified by visual observations during the field investigation, field sampling with Pollutant Parameter Action levels will be conducted. If neither the field investigation or field sampling result in source identification a grab sample will be collected and sent to a laboratory for further analysis.

75. Have pollutant parameter action levels been established and are they included as an attachment? *Schedule A.3.c.v.D*

Yes No

If necessary, provide an explanation: The action levels are attached in the Dry Weather Screening and Outfall Reconnaissance Inventory Plan with the prior year FY22-23 annual report. All annual reports are available online at <https://www.bendoregon.gov/government/departments/utilities/stormwater-reports-regulations>

76. Are all persons responsible for investigating and eliminating illicit discharges and illicit connections into the MS4 appropriately trained to conduct such activities? *Schedule A.3.c.vii*

Yes No

If necessary, provide an explanation:

77. Are all new staff working to implement the IDDE program trained within 30 days of their assignment to this program? *Schedule A.3.c.vi*

Yes No

If necessary, provide an explanation:

Yes, in addition during FY24 two full time stormwater compliance technicians obtained a 24-hour Hazwoper certification to better respond to illicit discharges.

Construction Site Runoff Control

78. Provide a brief summary of the overall progress towards implementation of this control measure. *Schedule A.3.d*
 Over FY23-24 and into the first part of FY24-25 the city worked towards meeting the 11/1/2024 construction site runoff control implementation deadline by making multiple improvements to erosion control management and enforcement. In August of 2024, the City updated municipal code for compliance including expanding construction site inspection and enforcement to projects with land disturbance of 5,000 or more square feet by removing prior exemptions for small developments. In addition, over FY23-24 and the first part of FY24-25 the City made updates to the construction site inspection and tracking database (Cityview) to capture these smaller sites through the existing building permit process including addition of a small site erosion control template plan, photo documentation of installed best management practices onsite, and tracking to complete onsite inspection for smaller sites. Resources for small site erosion control are available online at <https://www.bendoregon.gov/government/departments/utilities/erosion-control/small-site-erosion-control-instructions>
 During spring and summer of 2024 (FY23-24 and FY24-25), the City also worked towards updating standard drawings for erosion control BMPs to provide clarity on installation and maintenance and updated language in the special provisions for capital projects related to erosion control requirements. These changes will be effective by Nov 1, 2024. The City is also initiating a new process to track and manage capital project erosion control inspection forms to ensure consistency and oversight across all City projects that will go into effect on Nov 1, 2024.

79. Were the required components in place by the implementation date? *Schedule A.3.d*.
 Yes No (*Implementation date: November 1, 2024*)

80. Do ordinances or other regulatory mechanisms require erosion controls, sediment controls, and waste materials management controls to be used and maintained at all qualifying construction projects? *Schedule A.3.d.i*
 Yes No NA
 If necessary, provide an explanation:
 Please see 2024 code updates under Bend Municipal Code Chapter 16.35 Erosion Control Requirements at <https://bend.municipal.codes/BC/16.35>

81. Indicate the minimum land disturbance where construction site operators are required to complete and implement an Erosion and Sediment Control Plan (ESCP) for construction project sites: *Schedule A.3.d.i*
 In square feet or portion of an acre: 5,000 ft² , acres
 If necessary, provide an explanation:
 The threshold is effective November 1, 2024.

82. For construction projects that disturb one or more acres (or that disturb less than one acre, if it is part of a "common plan of development or sale" disturbing one or more acres), provide a brief description how these projects are referred to DEQ or the appropriate DEQ agent, to obtain a NPDES Construction Stormwater General Permit. *Schedule A.3.d.ii*
 The requirement for developers to check with DEQ for 1200c permit requirement is listed as a permit condition on all City-issued development permits and referenced in Bend City Code Title 16.

83. Provide the written specifications that address the proper installation and maintenance of such controls during all phases of construction activity as an attachment *Schedule A.3.d.iii*
 Attached: Yes No
 If necessary, provide an explanation:
 Please access the large documents online at: Central Oregon Stormwater Manual: <https://www.coic.org/stormwater/>

City Design Standards: Section 7 Grading and Erosion Control, City Standard Drawings Erosion (E), and Special Provision to the 2021 OSS Section 00280 Erosion and Sediment Control:
<https://www.bendoregon.gov/government/departments/engineering/standards-and-specifications>

84. Indicate which of the following are required for qualifying construction projects: *Schedule A.3.d.iii*

- Site operator required to complete a ESCP template or worksheet prior to beginning construction/land disturbance
- Site operator required to keep the ESCP on site
- Site operator required to maintain and update the ESCP as site conditions change, or as needed.
- Site operator required to provide the ESCP to the permittee, DEQ, or another administrating entity

If necessary, provide an explanation:

85. ESCPs [from construction projects that will result in land disturbance of one or more acres (or that disturb less than one acre, if it is part of a "common plan of development or sale" disturbing one or more acres)] are reviewed using a checklist or similar document to determine compliance. *Schedule A.3.d.iv*

Yes No

86. Provide the ESCP review template or checklist as an attachment. *Schedule A.3.d.iv*

Attached: Yes No

87. Indicate the minimum land disturbance where you require the ESCP to be reviewed:

5,000 ft² , acres

If necessary, provide an explanation:

For small projects, please see the attached template. Please refer to section 2.3.9 of the design standards for large projects <https://www.bendoregon.gov/government/departments/engineering/standards-and-specifications>

88. All construction projects that will result in land disturbance of 5,000 square feet or more are expected to be inspected at least once per permit term. *Schedule A.3.d.v*

Indicate the number of inspections completed to comply with this requirement during this reporting year: 697

Indicate the number of inspections completed to comply with this requirement during the permit term: 1260

If necessary, provide an explanation:

89. Are construction projects with visible sediment in stormwater/dewatering discharge or when a complaint is received inspected? *Schedule A.3.d.v.A.2*

Yes No

90. Indicate number of projects that were inspected based on this inspection trigger: 16

If necessary, provide an explanation:

91. Indicate the total number of construction projects that were inspected this monitoring year: 184

92. Indicate the total number of construction projects that were inspected during the permit term: 285

93. Indicate which of the following are documented during an inspection: *Schedule A.3.d.v.B*

- That the ESCP is reviewed to determine if the described control measures were installed, implemented, and maintained appropriately
- Assessment of the site's compliance with the ordinances or requirements
- Visual observation of any existing or potential non-stormwater discharges, illicit connections, and/or discharge of pollutants from the site
- Recommendations to the construction site operator for follow-up

Education or instruction provided to the site operator related to stormwater pollution prevention practices
 A written or electronic inspection report documents all necessary follow-up actions

If necessary, provide an explanation:

94. If available, provide a copy of the written or electronic inspection report form. *Schedule A.3.d.v.B.5*

Attached: Yes No

Please refer to the FY21-22 annual report for a copy of the electronic inspection report form for private development projects. <https://www.bendoregon.gov/government/departments/utilities/stormwater-reports-regulations>

The new inspection form for capital projects is attached.

95. Provide the written escalating enforcement and response procedure as an attachment. *Schedule A.3.d.vi*

Yes No

If necessary, provide an explanation:

The enforcement response procedure was updated in FY23-24 to reflect new BMP guidance and procedures.

96. Was the escalating enforcement procedure used to achieve compliance at any construction projects? *Schedule A.3.d.vi*

Yes No

Indicate number of times during this reporting year: 311

97. Indicate number of times during the permit term: 679

If necessary, provide an explanation:

98. Were all persons responsible for ESCP reviews, site inspections, and enforcement appropriately trained to conduct such activities? *Schedule A.3.d.vii*

Yes No

If necessary, provide an explanation:

99. Were all new staff working to implement the construction site runoff control program appropriately trained within 30 days of their assignment to this program? *Schedule A.3.d.vii*

Yes No

Post-Construction Site Runoff for New Development and Redevelopment

100. Provide a brief summary of the overall progress towards implementation of this control measure. *Schedule A.3.e*

The City continues to implement post-construction requirements in Bend Code Title 16 including plan review, issuance of private stormwater maintenance agreements, inspection and maintenance of publicly owned water quality facilities, and updates to digital inventory data. In conjunction with goals identified in the 2023 ISWMP document, the City is working to refine private stormwater facility maintenance enforcement and post-construction development requirements for the permit compliance deadline of November 1, 2025. During winter 2024 and calendar year 2025, post construction requirements will be discussed and included as part of the Stormwater Master Plan recommendations. The Stormwater Master Plan is anticipated to be completed in fall of 2025. As part of the Master Plan timeline and recommendations, updates to the Central Oregon Stormwater Manual as described in the ISWMP document will be postponed past 11/1/2025.

101. Were the required components in place by the implementation date? *Schedule A.3.e.i*

Yes No ((Implementation date: November 1, 2025)

102. For projects creating or replacing impervious area, indicate the area (or threshold) where the site is required to implement the post-construction site runoff program requirements: *Schedule A.3.e.i*

In square feet: 5,000 ft²

If necessary, provide an explanation:

City code currently has post-construction requirements for new and redevelopment adding 5,000 sq ft or more of impervious surface. Adjustments to the code are needed to account for replaced impervious surfaces by the 11/1/2025 implementation deadline.

103. Indicate which of the following are required at qualifying sites: *Schedule A.3.e.iii*

- A site-specific stormwater management approach that targets natural surface or predevelopment hydrological function through the installation and long-term operation and maintenance of stormwater controls
- Long-term O&M of stormwater controls at project sites that are under the ownership of a private entity

If necessary, provide an explanation:

The City of Bend currently requires all development to retain all stormwater on site. For private sites this includes a requirement to sign a maintenance agreement attached to the property deed to ensure long term O&M of stormwater controls/systems. In FY23-24 the City began a project planning effort to update existing stormwater maintenance agreements, tracking, and enforcement mechanisms for privately owned facilities by November 1, 2025. For publicly owned stormwater facilities, the City entered a new landscape maintenance contract in May of 2024 and has been tracking progress of the facilities. General maintenance (non-landscaping) of public storm facilities is still conducted by Utility Department field operations staff.

104. Were ordinance(s), code(s) and development standards reviewed to identify, minimize or eliminate barriers that inhibit design and implementation techniques intended to minimize impervious surfaces and reduce stormwater runoff? *Schedule A.3.e.ii*

Yes No

105. If barriers were identified or if necessary, provide an explanation:

In August of 2023, the City reviewed codes and standards for barriers that may inhibit implementation of low impact development techniques. No barriers were identified as a result of this review, as the City currently allows the use of LID techniques to manage stormwater onsite through development code. While conducting the barrier review, the City identified topics in development code such as walkway surfaces, street trees, and parking surfaces that can be further evaluated and encouraged as LID options. Furthermore, in conducting this review, the City identified areas of development code for the stormwater program to be aware of and involved with for any future code updates as they have a connection to stormwater (i.e. landscaping, tree code, and pavement requirements).

106. Indicate which of the following technical standards are used to determine the retention requirement: *Schedule A.3.e.iii.A*

- Volume-based method
- Storm event percentile-based method
- Annual average runoff-based method

If necessary, provide an explanation:

City Standards currently use a volume-based method to retain the 25-year, 24-hour storm event onsite which is equal to 2.5 inches of precipitation. As part of the Stormwater Master Plan, the City will be evaluating the need for future revisions to technical standards with consideration for local precipitation data and climate change.

107. For projects that are unable to meet the retention requirement, is the remainder of the rainfall/runoff treated prior to discharge with a structural stormwater control? *Schedule A.3.e.iii.B.1*

Yes No

108. Was the stormwater structural control designed to remove, at minimum, 80 percent of the total suspended solids?

Yes No

If necessary, provide an explanation:

Structural controls are designed following the Central Oregon Stormwater Manual guidance under section 6.2 Treatment Goals for 80% total suspended solids removal for typical concentrations ranging from 30mg/l to 100mg/l.

109. Are the allowable structural stormwater controls and specifications available for review? *Schedule A.3.e.iii.B.2*

Yes No

110. Indicate if they are attached or the location where they can be viewed:

Attached

Location: Central Oregon Stormwater Manual Chapter 6: <https://www.coic.org/stormwater/>

City Design Standards: Part V Standard Drawings- Stormwater STRM

<https://www.bendoregon.gov/government/departments/engineering/standards-and-specifications>

If necessary, provide an explanation:

111. Have alternatives for projects complying with the retention requirement been approved? *Schedule A.3.e.iii.C*

Yes No

The City will be evaluating recommendations for alternatives and exceptions as prior to the 11/1/2025 deadline.

112. If yes, are the written technical justifications evaluated? *Schedule A.3.e.iii.C*

Yes No

113. Provide a brief description of the factors of technical infeasibility or site constraints that prevented the on-site management of the runoff amount stipulated in the stormwater retention requirement or a portion thereof. *Schedule A.3.e.iii.C*

If necessary, provide an explanation:

N/A

114. Before the allowance of alternative compliance, were mitigation options established? *Schedule A.3.e.iii.D*

Yes No

If necessary, provide an explanation:

N/A, the City will be evaluating recommendations for alternative compliance including mitigation prior to the 11/1/2025 deadline.

115. If applicable, indicate which of the following mitigation options have been used and provide a narrative description of the implementation of the mitigation option? *Schedule A.3.e.iv.D*

- Off-Site Mitigation
- Off-Site Groundwater Replenishment Projects

If necessary, provide an explanation: N/A

116. Was a procedure developed for the review and approval of structural stormwater control plans for new development and redevelopment projects? *Schedule A.3.e.iv*

Yes No

If necessary, provide an explanation:

117. Indicate the minimum land disturbance or creation of new impervious area where plans are required to be reviewed: 5,000 ft² , acres of land disturbance creation of new impervious area

118. Are all sites that use alternative compliance to meet the retention requirement reviewed?

Yes No

If necessary, provide an explanation: N/A- Alternative compliance has not been developed.

119. Indicate if an inventory and implementation strategy is used to ensure that all stormwater controls are operated and maintained to meet the site performance standard in Schedule A.3.e.iii of the permit? *Schedule A.3.e.v*

Yes No

If necessary, provide an explanation:

120. Indicate which of the following strategies have been developed to ensure that all stormwater controls are operated and maintained to meet the site performance standard in Schedule A.3.e.iv. *Schedule A.3.e.v*

- Legal authority to inspect and require effective operation and maintenance of privately owned and operated stormwater controls
- Inspection procedures and an inspection schedule to ensure compliance with the O&M requirements of each stormwater control operated by the permittee and by other private entities
- A tracking mechanism for documenting inspections and the O&M requirements for each stormwater control
- Reporting requirements for privately owned and operated stormwater controls that document compliance with the O&M requirement in Schedule A.3.f.

If necessary, provide an explanation:

The City is revising its current strategy to update tracking mechanisms including enforcement actions and compliance for private facilities. The City is also working towards updating internal databases to include the location of all private structural controls in the MS4 Map.

121. Are the location of all public and private stormwater controls installed during this permit term documented on the MS4 Map? *Schedule A.3.e.v*

Yes No

If necessary, provide an explanation:

Currently, all city owned stormwater controls are mapped as well as newly constructed private facilities that are part of large subdivision developments. The City has developed an initial inventory of remaining known private stormwater controls and is in the process of verifying those to incorporate into the City's GIS by the 11/1/2025 permit deadline.

122. Were all persons responsible for performing post-construction runoff site plan reviews, administrating the alternative compliance program, or performing O&M practices or evaluating compliance with long-term O&M requirements appropriately trained to conduct such activities? *Schedule A.3.e.vi*

Yes No

If necessary, provide an explanation:

Currently, utility staff providing supplemental review of public infrastructure plans and long term O&M verification have been appropriately trained. Appropriate staff will be trained for review prior to the permit deadline 11/1/2025 for implementation of any new changes for post construction review or alternative compliance pathways.

123. Were all new staff working to implement the post-construction site runoff for new development and redevelopment program appropriately trained within 30 days of their assignment to this program? *Schedule A.3.e.vi*

Yes No

If necessary, provide an explanation:

Pollution Prevention and Good Housekeeping for Municipal Operations

124. Provide a brief summary of the overall progress towards implementation of this control measure. *Schedule A.3.f*
 The City has an established O&M program that is responsible for ongoing inspection, maintenance and repair of the publicly managed storm drain system. This includes catch basins, structural controls, water quality facilities and all other associated infrastructure. The City also manages a street sweeping program to reduce pollutant loading from hard surfaces. In addition, the City has developed performance standards for municipal maintenance activities that are used to guide programs associated with street sweeping, winter road care, fleet repair/washing, storm drain O&M, litter control, corporation yard management as well as road repair/maintenance. The City also utilizes a Water Conservation Program to guide better landscaping practices and reduce overwatering associated with dry weather discharges to the storm drain system. During FY22-23, the City began updating standard trainings for various municipal operations that are included in the digital Target Solutions training platform. These changes to digital standard trainings became effective in spring of FY23-24 and included updated training sheets and revised quiz questions.

125. Were the required components in place by the implementation date? *Schedule A.3.f*

Yes No (*Implementation date: November 1, 2024*)

126. Were O&M strategies for existing controls developed for both permittee-owned controls and controls owned and operated by another entity discharging to the MS4? *Schedule A.3.f.ii*

Yes No N/A

If necessary, provide an explanation:

127. Indicate the percentage of catch basins inspected/cleaned: *Schedule A.3.f.ii*

Percentage inspected this reporting year: 97% ; Percentage cleaned: 70% of inspected were cleaned

128. If known, estimate of material removed: 1,341.5 cubic yards

129. Percentage inspected during the permit term: 315% ; Percentage cleaned: 288%

130. If known, estimate of material removed: 3,573.75 cubic yards

If necessary, provide an explanation:

131. Indicate if a catch basin inspection prioritization system and/or an alternate inspection frequency has been established. *Schedule A.3.f.ii*

Yes No

If necessary, provide an explanation:

The City's current Operation and Maintenance SOP has a goal of a 2-year inspection interval for catch basins, while the MS4 permit requires a minimum of once every 5 years.

132. Have existing procedures and schedules for inspection and maintenance of the MS4 been reviewed and updated as required? *Schedule A.3.f.iii*

Yes No

133. Do any permittee-owned facilities have coverage under DEQ's 1200-Z Industrial Stormwater Discharge Permit? *Schedule A.3.f.v*

Yes No NA

If "Yes", provide DEQ File Number(s):

If necessary, provide an explanation:

134. Has the permittee completed a winter maintenance strategy and referenced the winter maintenance and operations program in the SWMP?

Yes No

The City maintains a Winter Street Operations plan that is available online and referenced in the SWMP.
<https://www.bendoregon.gov/government/departments/streets/street-operations/winter#Resources>

135. Are practices in place to reduce the discharge of pollutants to the MS4 associated with the application and storage of pesticides and fertilizers? *Schedule A.3.f.vi*

Yes No

If necessary, provide an explanation:

136. Are methods/practices in place to reduce the discharge of litter within the jurisdiction? *Schedule A.3.f.vii*

Yes No

If necessary, provide an explanation:

137. Are practices in place to ensure that collected material or pollutants removed in the course of maintenance are managed and disposed of in a manner such as to prevent such pollutants from entering the waters of the state in accordance with state and federal rules? *Schedule A.3.f.viii*

Yes No

If necessary, provide an explanation:

138. Were all persons responsible for evaluating O&M practices, evaluating compliance with long-term O&M requirements or ensuring pollution prevention at facilities and during operations appropriately trained to conduct such activities? *Schedule A.3.f. ix*

Yes No

If necessary, provide an explanation:

Responsible staff are routinely trained on pollution prevention for applicable municipal operations at recurring intervals through the City's online training platform, Target Solutions

139. Has a stormwater quality retrofit strategy been completed?

Yes No

If necessary, provide an explanation: The City is currently working on a stormwater quality retrofit strategy as part of the Stormwater Master Plan and will have it submitted once the Master Plan is complete with the fourth annual report due date (11/1/2025).

(Stormwater retrofit document due with fourth annual report)

140. Were all new staff working to implement the pollution prevention and good housekeeping for municipal operations program appropriately trained within 30 days of their assignment to this program? *Schedule A.3.f.xi*

Yes No

If necessary, provide an explanation:

Responsible staff are routinely trained on pollution prevention for applicable municipal operations at recurring intervals through the City's online training platform, Target Solutions and new hires are assigned trainings to complete within 30 days.

Monitoring

If the requirement does not apply, mark "NA" and explain why it does not apply to you in the comments field.

141. Was municipal stormwater monitoring performed at outfall locations, in the receiving waterbody, or to demonstrate compliance with this permit? *Schedule B.3*

Yes No

142. If "Yes" is the data included in the Annual Report?

Yes No

If necessary, provide an explanation: N/A

Water Quality Standards

143. During this monitoring year was it determined or reported that the MS4 discharge caused or contributed to an exceedance of an applicable water quality standard? *Schedule A.1.b*

Yes No

If necessary, provide an explanation: N/A

144. How and when did the exceedance of an applicable water quality standard occur? *Schedule A.1.b*

If necessary, provide an explanation: N/A

145. Was the exceedance self-reported or did DEQ send written notification? *Schedule A.1.b*

Self-reported: Yes No

If necessary, provide an explanation: N/A

146. Within 48 hours was an investigation started into the cause of the water quality exceedance? *Schedule A.1.b.i*

Yes No

If necessary, provide an explanation: N/A

147. Within 30 days of becoming aware of the exceedance, was DEQ notified in writing, if self-reporting? *Schedule A.1.b.ii*

Yes No

If necessary, provide an explanation: N/A

148. Within 60 days of becoming aware of or being notified of the exceedance, was a report submitted to DEQ that documents the following: *Schedule A.1.b.iii*

- The results of the investigation, including the date the exceedance was discovered
- A brief description of the conditions that triggered the exceedance or the cause
- Corrective actions taken or planned, including the date corrective action was completed or is expected to be completed

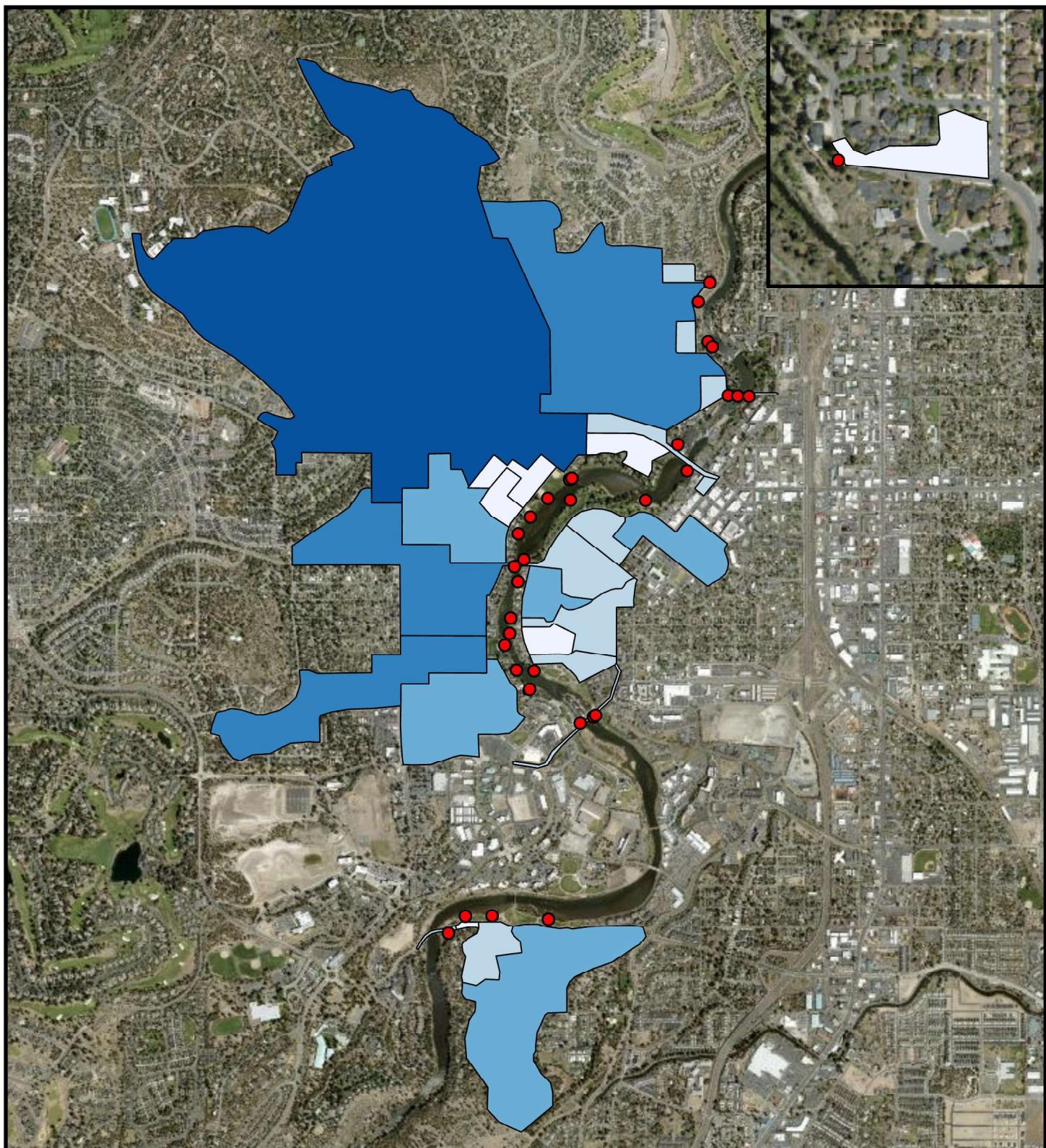
If necessary, provide an explanation: N/A

149. Were the corrective actions implemented in accordance with the schedule approved by DEQ? *Schedule A.1.b*

Yes No

If necessary, provide an explanation: N/A

150. Provide any additional comments or narrative description, if necessary: N/A



OUTFALL PRIORITIZATION ANALYSIS

BASIN PRIORITY RANKINGS

Very Low
Low
Moderate
High
Very High
Outfalls

Factor	Score	Zoning	3
Infiltration Rate	1	Public Road Length	4
Erodibility Factor	1	# of Flooding Events	4
Slope	2	Storm Main Length	4
Land Cover	2	# of Storm Drains	4
Basin Area	2	# of IDDE Cases	5



Map prepared by Luke Donaldson, City of Bend
Print Date: Sep 19, 2024
Sources: City of Bend, Deschutes County



CITY OF BEND

This map is for reference purposes only. Care was taken in the creation of this map, but it is provided "AS IS." Please contact the City of Bend to verify map information or to report any errors.

10/15/2024



Erosion and Sediment Control Inspection Guidance

CITY OF BEND

General Requirements:	
<ul style="list-style-type: none"> *Existing or potential pollutant discharges are not allowed to leave the project site and/or deposit on paved surfaces that has the potential to discharge to properties, stormwater systems, water bodies, sensitive areas, or their buffers. Any sediment released from the project shall be removed by sweeping, shoveling, and/or vacuuming within 24 hours. *Illicit connections and non-stormwater pollutant discharges are not allowed. BMPs are installed, implemented, and maintained per the approved ESCP. Additional BMPs are identified as needed to meet the intent of the approved ESCP as well as City standards and code. Temporary BMPs are removed once disturbed areas have been permanently stabilized. The approved Erosion and Sediment Control Plan (ESCP) is available onsite and updated as needed. Project site is compliant with City of Bend Code Title 16: Grading, Excavation, & Stormwater Management 	

Erosion and Sediment Control Requirements		STD DWG
1. Perimeter Control	Areas downslope are protected by perimeter control. Stockpiles are within the perimeter control of the project and protected. Stockpiles located on paved surfaces are covered and perimeter control is installed at the base of each stockpile at the end of the day.	E-1, E-4, E-10, E12 and E-13
2. Inlet Protection	Stormwater inlets are protected by inlet protection.	E-2A, E-2B, and E-2C
3. Construction Entrance	Adjacent paved surfaces are protected by rocked entrance(s). Sediment Ramps are not allowed at access points. Intentionally washing track-off into stormwater inlets is not allowed. All loose material must be swept from paved surfaces as needed, daily at a minimum.	E-8
4. Dust Control	Dust is mitigated to the maximum extent possible.	Bend Code Title 16.10.070(A)12
5. Concrete Management	Concrete waste is contained for proper disposal.	E-7
6. Stabilization	Areas with bare soil not actively being worked are stabilized.	E-5, E-5B and E-9
7. Structural Stormwater Controls	Sensitive areas and post construction infiltration facilities are protected during construction.	See Site Plan Specifics
8. Runoff Control	Diversion and settling basins are provided. Dewatering is controlled to prevent sediment laden runoff from leaving the project site.	E-11, E-12, E-13 E-14 and E15
9. Material Management	Spill Kits are provided. Hazardous chemicals are stored appropriately with secondary containment as needed. Material storage/ lay down areas are out of active right of way and protected.	E5, Bend Code Title 16.10.060(A)3

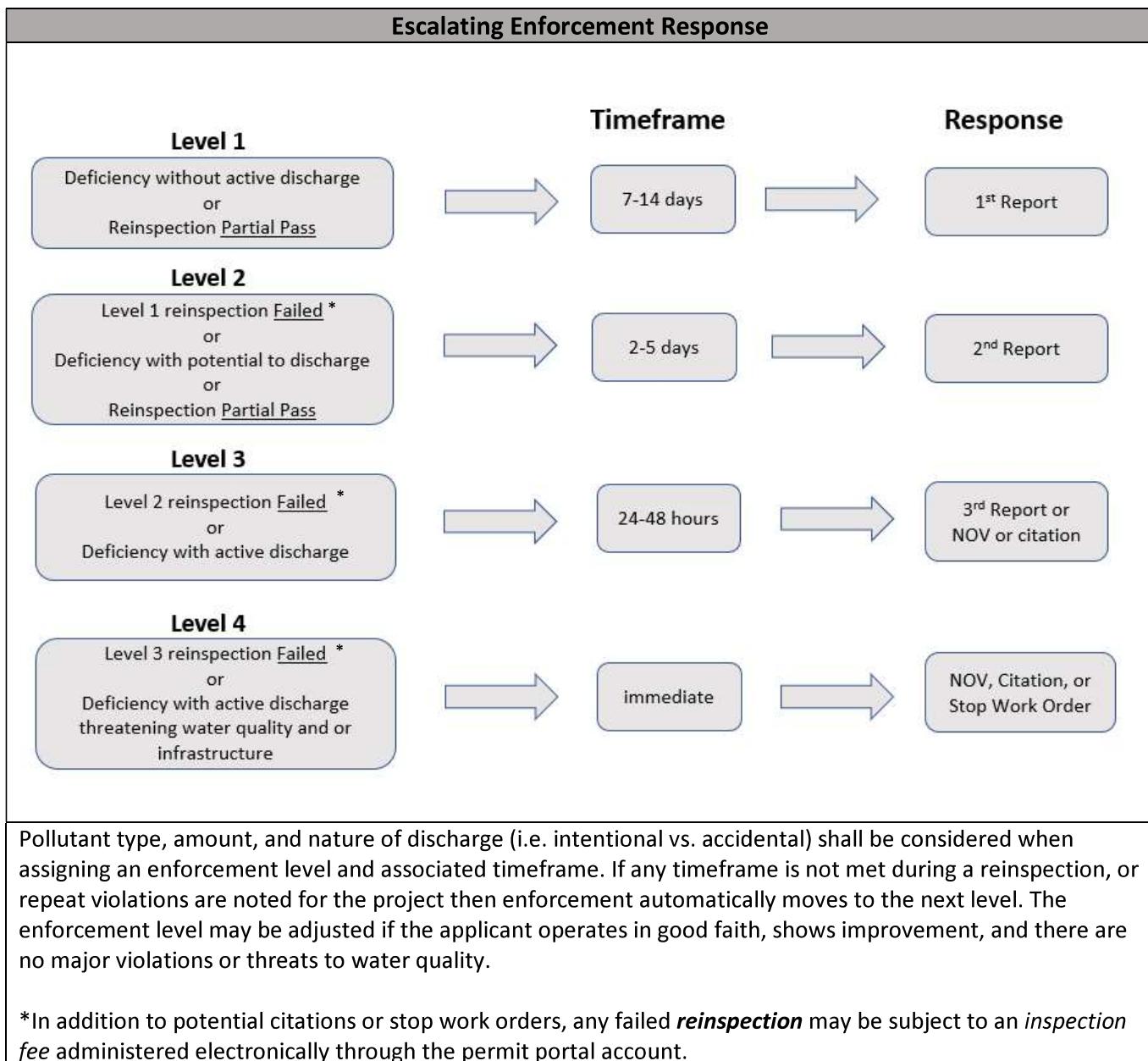
*Observations are documented with corrective actions necessary for follow up with the site operator.

10/15/2024

Inspection Type
<u>Initial Inspection (10 Erosion Control Initial)</u> – An initial inspection occurs when BMPs are first installed on site, prior to other ground disturbing activity. An initial inspection should be requested by the owner, applicant, or contractor, but may be initiated by staff if there is reason to believe work has begun.
<u>Routine Inspection (Erosion Control Routine)</u> – A routine inspection occurs when staff initiates an unsolicited inspection of a project. It could also be requested by the owner, applicant, or contractor for a check-in or to provide input for phasing.
<u>Complaint Inspection (Erosion Control Complaint)</u> - A complaint inspection occurs if a complaint regarding erosion control on a permitted project is received from the public, city staff or another agency.
<u>Final Inspection (60 Erosion Control Final)</u> – A final inspection occurs when a site is fully stabilized, all temporary BMPs have been removed and construction is complete. A final inspection should be requested by the owner, applicant, or contractor. A final inspection may be initiated by staff if there is a reason to believe work has ended, or the project is going into an inactive phase for an extended period.
<u>Reinspection (Assign label based on inspection type trigger)</u> – A reinspection occurs when staff have resulted an inspection above with an outcome other than “passed”. See Inspection Results below. A reinspection should be requested by the owner, applicant or contractor within the timeline provided by staff per the escalating enforcement response , designation below. Reinspections are focused on resolving deficiencies previously identified.

Inspection Results
<u>Passed</u> – An inspection yields no deficiencies or corrective actions and is in compliance with the approved ESCP and all related codes/specifications OR a reinspection finds that all previously identified deficiencies have been addressed and resolved.
<u>Partial Pass</u> – An inspection where staff identifies a deficiency deemed to be low risk or where a deficiency is being addressed or in progress at the time of inspection. A reinspection where not all deficiencies have been resolved but progress justifies keeping the project at the existing enforcement level or down grading based on the type of violation and status of discharge. A partial pass cannot be assigned for any project that currently has an active discharge.
<u>Failed</u> – An inspection where a deficiency is identified, triggering escalating enforcement. A reinspection where previously identified deficiencies have not been addressed adequately, leading to an escalation in the enforcement Level.
<u>Not Ready</u> – An initial or final inspection where the owner, applicant, or contractor has requested an inspection, but staff identifies the necessary work hasn't occurred. Staff initiated initial inspection where project hasn't started, staff uses report to educate applicant, owner, or contractor on process.
<u>Canceled</u> – A level 1 or 2 inspection that resulted in a deficiency where the contractor provided photo documentation that the issue has been adequately resolved.
<u>Voided</u> – This result is utilized to remove duplicative efforts with the inspection process for a single project. It is also utilized to remove inspections created in error. The technician will <u>provide an explanation</u> in the permit comment box when voiding, and reference the primary erosion permit ID# if applicable.

10/15/2024





Standard Erosion and Sediment Control Plan

1 – 4 Unit Development

Erosion Control Requirements & BMPs

1. Protect all downslope areas by providing perimeter control
2. Protect adjacent storm drains by installing inlet protection
3. Mitigate tracking of sediment onto paved surfaces by providing a rocked construction entrance
4. Minimize dust to the extent possible by providing dust control
5. Contain concrete waste for proper disposal by providing a concrete management facility
6. Protect trees and vegetation by installing tree protection fencing
7. Stabilize soil not actively being worked

General Housekeeping Requirements

1. This plan shall be available on site and updated as necessary.
2. Sweep sediment found offsite daily. Sediment ramps are not allowed for curb access.
3. Do not dump or wash material into a storm drain, dispose of trash in dumpster.
4. Keep portable toilets out of the street and sidewalk.
5. Inspect and maintain BMPs for the duration of the project.
6. Remove temporary BMPs once disturbed areas are stabilized.
7. Locate stockpiles within perimeter control for the project.
8. Clean spills promptly using dry cleanup methods.

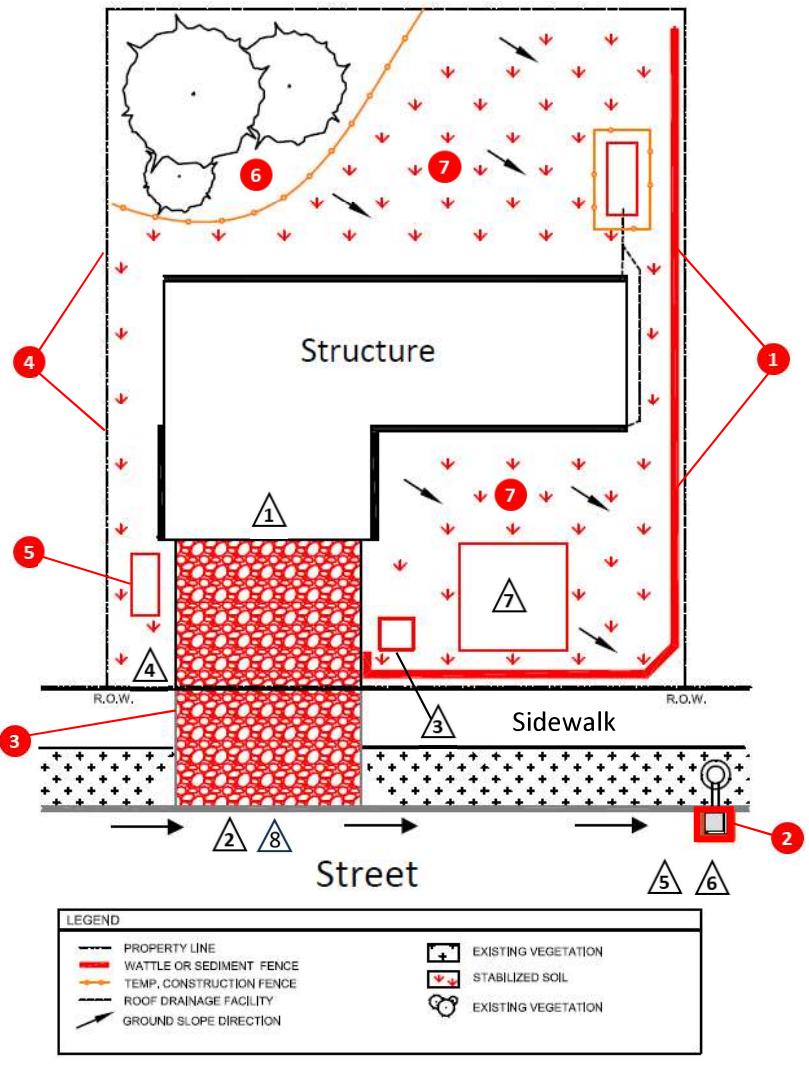
By signing this plan, I agree to meet each requirement and implement all necessary erosion, sediment and pollution control measures as outlined above to prevent erosion, sedimentation, and pollutants from leaving the site to the maximum extent practical. I understand that BMPs must be maintained, and they may need to change during construction to prevent erosion and prevent sediment, sediment laden water, and pollutants from leaving the site to the maximum extent practical. I understand that the City may inspect my project, and that failure to install or maintain adequate measures may result in re-inspection fees, fines, or other enforcement actions including a stop work order.

Tax Lot ID: _____

Site Address: _____

Name: _____

Signature: _____ Date: _____





CITY OF BEND

Erosion and Sediment Control Best Management Practices (BMPs) for Inspection

BMP	Description	Standard Drawings/Reference
1. Perimeter Control	Physical sediment barrier downslope of disturbed areas such as wattles, subgrade barrier, or sediment fence.	E-1, E-4, E-10
2. Inlet Protection	Prefabricated sediment filtration for curb and grated inlets/catch basins.	E-2A, E-2B, E-2C
3. Construction Entrance	Open graded rock placed at designated construction access point to stop sediment transfer.	E-8
4. Dust Control	Water available on site to control dust to the maximum extent practicable.	Bend Code Title 16.10.070(A)12
5. Concrete Management Facility	Provide a plastic lined concrete washout to ensure concrete waste is contained.	E-7
6. Tree Protection	Fencing to delineate protection areas surrounding designated trees.	E-3
7. Stabilization	Temporarily stabilize all soils, including stockpiles within 10 days of inactivity and permanently prior to issuance of Certificate of Occupancy.	E-5B, E9
<i>All applicable Best Management Practices (BMPs) shall be in conformance with City of Bend Standards and Specifications. Alternative measures and practices are allowed when approved by City of Bend – Erosion Control Inspection Staff.</i> https://www.bendoregon.gov/government/departments/engineering/standards-and-specifications		

BMP Maintenance

1. Remove sediment from behind bio bags, straw wattles, and other barriers when it has reached a height of 2 inches and prior to removal of control measures.
2. Remove sediment from behind sediment fence when it has reached a height of 1/3 the fence height and prior to fence removal.
3. Replace catch basin inserts when sediment has filled half of the sump area and prior to insert removal.
4. Remove accumulated dried concrete from the concrete management facility as needed to maintain adequate capacity. Completely remove debris prior to project completion.
5. Replace temporary BMPs as needed to maintain good working condition.

Resources

1. BMP Installation and Maintenance Videos:
<http://www.bendoregon.gov/government/departments/utilities/erosion-control/>
2. Construction Site Management Fact Sheets and Guidance Documents:
<https://www.bendoregon.gov/government/departments/utilities/stormwater-utility/stormwater-public-education-and-outreach/stormwater-best-management-practices>
3. For questions contact the Stormwater Program at 541-419-8733, 458-600-7728, or stormwater@bendoregon.gov



CITY OF BEND

Engineering Department Erosion and Sediment Control Inspection Form

In compliance with the City of Bend's Municipal Separate Storm Sewer System Permit and Water Pollution Control Facilities Permit, Engineering City staff shall complete this form monthly and in person at each capital improvement project site. If additional guidance or erosion expertise is needed, contact Water Services stormwater compliance technicians.

Project ID: _____ Project Name: _____ City PM: _____
 Completed By (City staff): _____ Date (MM/DD/YYYY): _____ Time: _____

Weather: Clear Wind Rain Overcast Snow

Instructions: Complete a separate inspection form for each capital improvement project site monthly and send completed forms to the Engineering Project Manager (PM). The Engineering Project Manager is responsible to communicate inspection results, deficiencies, and needed corrections with the contractor at the weekly project meeting. Upload completed forms monthly for reporting to the Water Services Stormwater Program on Sharepoint at https://bendoregon.sharepoint.com/sites/Util_SW/EIPD%20Erosion%20Control%20Inspections/Forms/AllItems.aspx

Erosion and Sediment Control Best Management Practice (BMP) Requirements		<u>Std Drawing, Code, or COSM</u>	Yes/No/NA
1. Perimeter Control	Are downslope project areas protected by effective perimeter control(s)? Are stockpiles located within the perimeter control of the project and protected? Are stockpiles located on paved surfaces covered? Is perimeter control installed at the base of each stockpile when not worked and/or by the end of each day? <i>Sediment is not allowed to discharge to the storm system. Released material needs to be cleaned up immediately and properly disposed.</i>	E-1, E-4, E-10, and E-12	
2. Inlet Protection	Do all stormwater inlets within and adjacent to the project area have functioning inlet protection devices installed?	E-2A, E-2B, and E-2C	
3. Construction Entrance(s)	Do adjacent paved surfaces have functioning and maintained rocked construction entrance(s)? <i>Sediment ramps are not allowed at access points. Intentionally washing track-off into stormwater inlets is not allowed. All loose material must be swept from paved surfaces, daily at a minimum. No visible trackout from the project is allowed.</i>	E-8, note 5, Sts& Specs Section 2-7.1.2	
4. Dust Control	Are dust control measures in place at the project site?	BMC 16.10.070(A)12	
5. Concrete Management	Is concrete waste contained in a designated washout area for proper disposal?	E-7	
6. Stabilization	Are areas with bare soil that are not actively being worked stabilized?	E-5, E-5B, E-9	
7. Structural Stormwater Controls	Are sensitive areas and post construction infiltration facilities being protected from damage during construction?	BMC 16.10.070(A)4 and 5	
8. Runoff Control	Are runoff controls such as diversion and settling basins provided? Are dewatering activities being effectively controlled to prevent sediment laden runoff from leaving the project site?	E-11, E-12, E-13, E-14, E-15	
9. Material Management	Are hazardous chemicals (oils, paints, fuels, etc.) appropriately stored to prevent spills with secondary containment as needed? Are material storage/lay down areas outside of the active right of way and protected?	COSM Section 9.4.3 (14) and E-5, BMC 16.10.060(A)3	
10. Prior Month Deficiencies	Were all prior month deficiencies addressed/corrected? Comments:		

All applicable Best Management Practices (BMPs) shall be in conformance with [City of Bend Standards and Specifications](#). Alternative measures and practices are allowed when approved by the City of Bend Project Manager. *All deficiencies noted by a "No" above should be addressed in more detail using the BMP Deficiency Log on page 2 of this form.

BMP Deficiency Log

#	Location/Rd Seg	Deficiency Description	Corrective Action	Due Date
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				



City of Bend Stormwater Utility

Street Sweeping for Stormwater Plan

CITY OF BEND

Background.

Sweeping for stormwater is important to keep pollutants such as litter and sediment out of the storm drain system and Deschutes River. Pollutants that accumulate in streets can also cause clogging of the storm drain facilities and contribute to localized flooding. Although the Utility Department Stormwater Operation and Maintenance program focuses on catch basin, sediment manhole, and UIC maintenance, streets which are considered part of the conveyance system for stormwater are not charged a fee for impervious surface coverage.

The needs of the stormwater quality program are separate from other sweeping needs. The Utility Department stormwater program currently funds 40% of the Transportation and Mobility Department's sweeping program each fiscal year. Currently, the Transportation and Mobility Department employs three sweeper personnel including one lead and two sweeper operators.

Goals. The goals of the stormwater sweeping program are to reduce localized flooding and prevent stormwater pollutants from entering receiving waters.

Objectives. The objectives of the stormwater sweeping are to:

- (a) reduce sediments and other pollutants in the area that drain to the Deschutes River; and
- (b) keep stormwater facilities clear of blocking debris that can result in localized flooding, including larger gross pollutants (trash and debris or leaves that can block inlets) together with smaller pollutants (sediments that can clog dry wells or drill holes, reducing infrastructure life) throughout the City.

Levels of Service Action Plan for Assigned Stormwater Fee Supported Sweepers.

Current annual spring cleanup of streets Citywide takes approximately 2 to 2.5 months to complete. The time required for spring cleanup increased from the 2019 estimate of 1.5 months due to the growth in new sidewalk and road lane mileage throughout the City over the years. Additionally, current fall cleanup of the entire City takes a focused effort of 1.5 - 2 months (compared to 1.5 months in 2019).

Streets Sweeping Program for Stormwater shall:

- 1) Schedule to sweep the curb lines of each of the public streets in the major basins that drain to the MS4 at least once per quarter on a prescheduled basis that allows for

proper outreach of timing (e.g., “first two weeks of October, January, April, July”, except during those times when temperatures or weather that are documented prohibit sweeping. Typically, the major basins in the MS4 get swept every other month when weather conditions allow. This includes sweeping public roads both with and without curb. Due to size and weight constraints of the sweeper machines alleyways are not swept within the MS4.

2) In 2023, the stormwater program conducted a desktop analysis using GIS to identify and refine the MS4 drainage basins to the Deschutes River that were originally based on sub watersheds to better reflect the MS4 system public infrastructure drainage. This analysis led to a decrease in the MS4 drainage area from 5.79 square miles to 2 square miles. Additionally, this reduced the total street lane miles in the MS4 from 90 to 45.9. In 2024, the stormwater program conducted an additional analysis looking at data within each MS4 drainage sub-basin including sub-basin area, slope, erodibility, infiltration, land cover, zoning, road type, road length, number of catch basins, flooding events, length of storm main pipe, and illicit discharge cases. This analysis was used to identify streets within the MS4 that are considered the highest priority for sweeping shown in Attachment 1 and available on the Utility Department stormwater regulatory map at [Stormwater Regulatory \(bend.or.us\)](http://Stormwater Regulatory (bend.or.us)).

3) For purposes of regulatory reporting this item will be met if each public street in the major basins that drain to the MS4 are swept on a scheduled basis at least four times per year on a quarterly schedule (given consideration for weather and equipment issues), unless otherwise shown that weather prevented sweeping.

In addition to the entire MS4 sweeping four times per year, certain areas near downtown are swept on a more frequent basis when weather is above 32 degrees. These specific areas include Newport corridor, Riverside, Galveston, Wall, Bond, Colorado, and Arizona (full length of streets) streets. Greenwood from 3rd street into town and Franklin from 3rd street are also swept weekly every Thursday.

4) Sweep in a manner that allows us to inform those that are in the MS4 basin when the sweeper is scheduled to be there so we can get cars off the street for added efficiency (e.g., Utility staff communicating an even/odd parking request for the scheduled two weeks as an interim measure to increase efficiency).

5) Sweep the full street in the MS4 area and each street in the rest of the City at a bare minimum of twice per year, at least once in spring and once in fall to keep the street basalt picked up, and timed to keep storm drain gutters clear of fall leaf drop and debris, with priority to known flooding problem areas and bottom of hillsides. Sweep as needed for storm cleanup to ensure public safety and to pick up sediments and debris carried onto public roadways. Use reader boards and notifications (e.g., door hangers, temporary signs, etc.) to inform public to increase efficiency by encouraging cars off the street and proper trimming of tree and shrubbery limbs to allow access to curb lines.

6) To the degree possible, assign specific sweepers to specific sweeper operator

employees for improved care and thus efficiency.

- 7) Track stormwater program sweeping through Infor for better record keeping and reporting effectiveness. Continue with GPS tracking to increase efficiency. Track time, locations, and miles spent sweeping with brooms up and brooms down, and sweeping average speed when brooms are down for stormwater sweeping. Also report total amounts of material collected and miles spent brooms down for total sweeping (stormwater and other sweeping). Report both to Stormwater Utility for use in quarterly financial reporting, annual reporting, and performance metrics. GPS data should be provided in a digital, usable format once available.
- 8) To ensure 40% of sweeping operations is spent on implementing the stormwater sweeping plan, provide the stormwater program manager with a breakout of time spent sweeping per the stormwater plan and in total (e.g., including time spent sweeping otherwise (e.g., accident cleanup, construction prep, etc.)). If replacements are used, provide their time sweeping per the stormwater plan.
- 9) Funds on resale of equipment purchased by the stormwater utility to be returned to utility for use in future stormwater sweeper program equipment purchases.
- 10) Include stormwater utility program staff in the decision making for which sweeper equipment to purchase with stormwater utility money to ensure high efficiency for water quality goals and stormwater utility needs.
- 11) Transportation and Mobility Department Sweeping Program to purchase the following equipment:
 - A) One overshot PB Loader (5-yard dump truck with loading attachment) to assist with efficiency as well as other needs. This item was purchased by the Sweeping Program in 2021 and received in 2024 due to manufacturing and supply chain delays.
 - B) One new single air machine purchased and received in calendar year 2024.
 - C) One mechanical broom road wizard purchased in 2023, but not yet received due to 12-month build time. Expected during FY24-25.
- 12) Provide occasional sweeping for debris cleanup in the right of way as needed for illicit discharge code enforcement cases when requested by stormwater program staff.

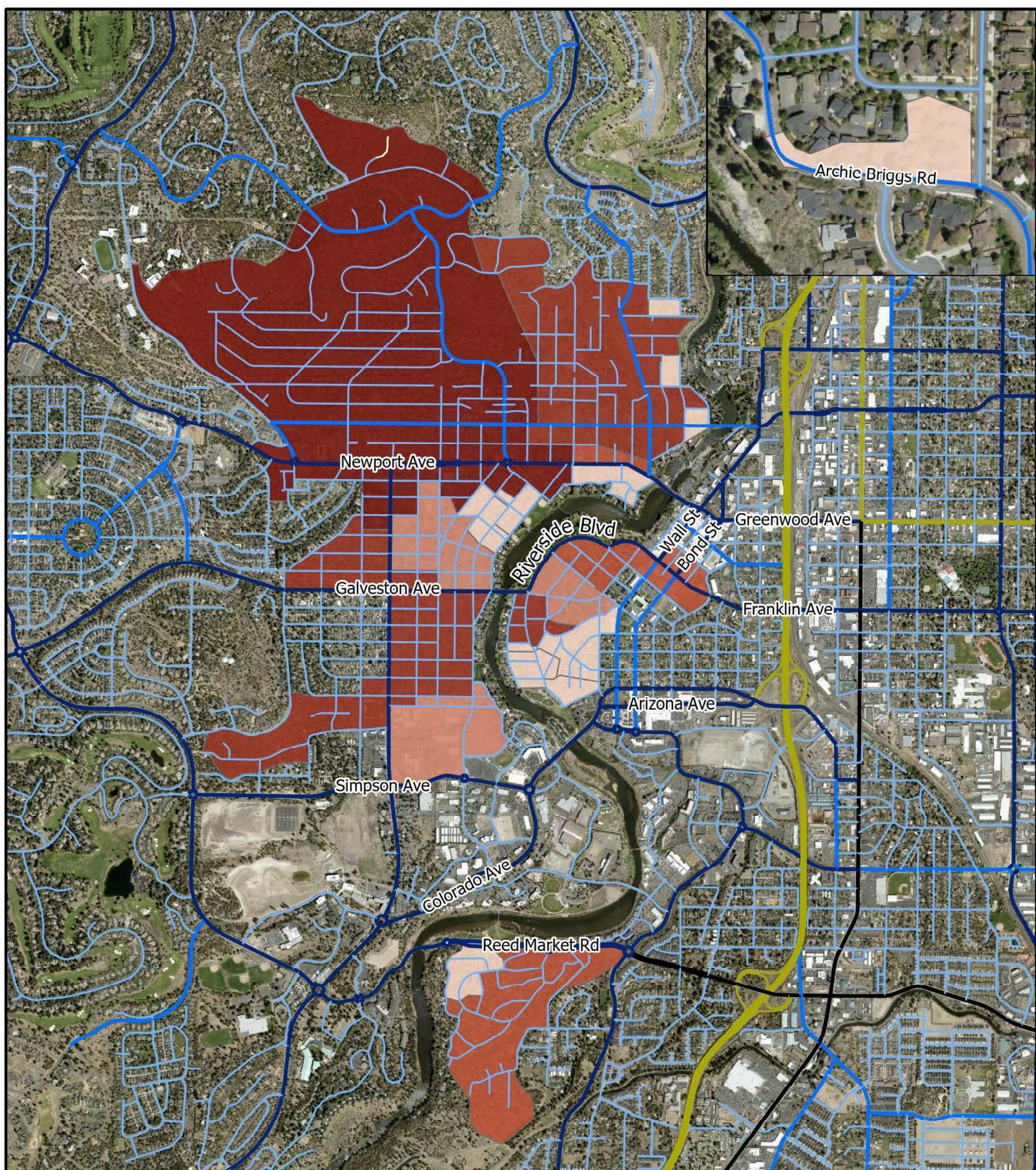
Stormwater Utility shall:

- 1) Prepare the draft annual report incorporating the sweeping data.
- 2) Continue to fund the 40% of the Streets Program for Stormwater Sweeping work.
- 3) Provide continued assistance with prioritization of GPS as needed.
- 4) Work together operationally as needed and requested and jointly approved.
- 5) Are available to assist with notification upon request in advance (e.g., provision of extra reader boards, dispersal of door hangers, robot notification phone calls,

social media notifications) to help clear street of cars, overhanging tree branches and basketball hoops.

6) Utility will help with location of pads and potentially costs for ecoblock fencing materials (rough estimate \$5,000 per site) for temporary storage of sweeper spoils, such as the pilot site at Murphy and Brosterhaus, currently under development.

Timing: The City has been working towards improved efficiency for the past few years. GPS data will be reported on as it becomes available in coordination with the Transportation and Mobility and IT Departments. Transportation and Mobility Department Sweeping Program staff will provide quarterly reports of street sweeping activities to the Utility Department Stormwater Program Manager as part of payment request and for regulatory reporting. This plan will be reviewed and updated as needed.



STREET SWEEPING PRIORITIZATION

MS4 AREA

Factors	Score	Flooding events
Road length (mi)		Priority 1
Minor arterial	3	Priority 2
Collector	2	Priority 3
Local	1	Storm drains
		5

Priority Level

Very low
Low
Moderate
High
Very high

0 0.25 0.5
Mi



CITY OF BEND

This map is for reference purposes only. Care was taken in the creation of this map, but it is provided "AS IS." Please contact the City of Bend to verify map information or to report any errors.



Municipal Separate Storm Sewer System (MS4) Permit Schedule D Special Conditions

303(d) List Review and Evaluation Report : October, 2024



CITY OF BEND



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Background

The City of Bend received its first Phase II NPDES MS4 Permit for stormwater discharges to surface water from the Oregon Department of Environmental Quality (DEQ), on February 26, 2007. The City's 2007 Phase II NPDES MS4 permit expired in 2012 and went into administrative extension until the City received its new, individual Phase II permit on December 15, 2021, effective January 1, 2022. The City's MS4 system that drains to the Deschutes River is concentrated on the west side of the City and covers a small portion of the city limits (Approximately 6.6 %). In addition to the MS4 Permit, the City also owns and operates approximately 6,500 UIC devices to infiltrate stormwater runoff from municipal property and right of way that are regulated under a separate Water Pollution Control Facilities (WPCF) Underground Injection Control Permit from DEQ.

Purpose

Under the 2022 MS4 permit, the City is required to provide an evaluation report of 303(d) listed pollutants under Schedule D- Requirements for Discharges to Impaired Waterbodies. The purpose of this report is to fulfill the following requirements listed in Schedule D:

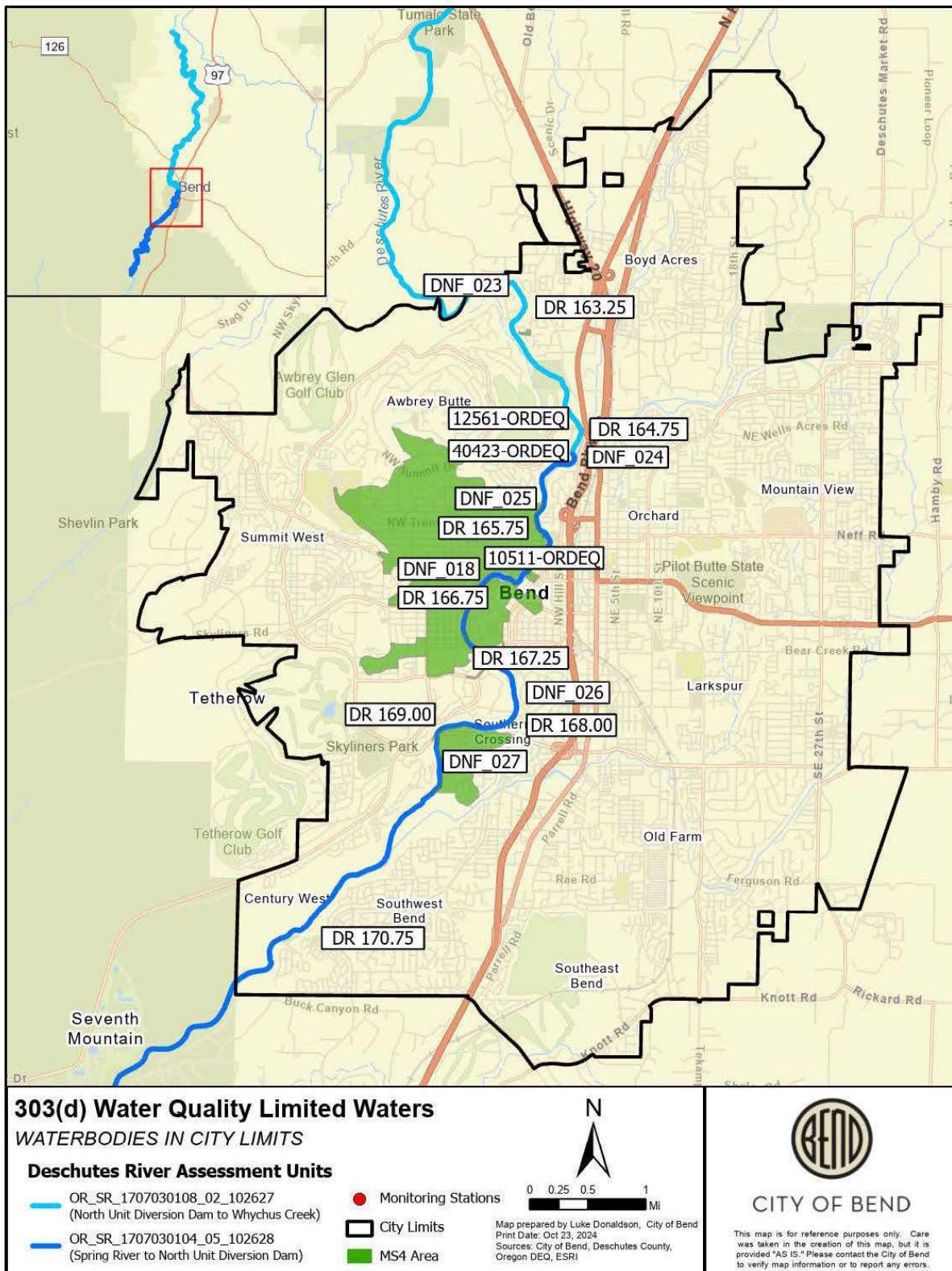
- i. *Review the applicable pollutants that are on the 2018/2020 Integrated Report's 303(d) list, or the most recent USEPA list if approved within three years of the issuance date of this permit, that are relevant to the permittee's MS4 discharges with the third annual report by November 1, 2024. Based on a review of the most current 303(d) list at the time, evaluate whether there is a reasonable likelihood for stormwater from the MS4 to cause or contribute to water quality degradation of receiving waters.*
- ii. *Evaluate whether the BMPs in the existing SWMP Document are effective in addressing and reducing the 303(d) pollutants. If the permittee determines that the BMPs in the existing SWMP Document are ineffective in addressing and reducing the applicable 303(d) pollutants, the permittee must describe how the SWMP will be modified or updated to address and reduce these pollutants to the MEP.*
- iii. *Submit a report summarizing the results of the review and evaluation, and identify any modifications or updates to the SWMP Document that are necessary to reduce applicable 303(d) pollutants to the MEP by November 1, 2024.*

303(d) Listed Pollutants

This report will focus on impairments for Deschutes River assessment units that fall partially within Bend City limits including the Spring River to North Unit Diversion Dam (OR_SR_1707030104_05_102628) and the North Unit Diversion Dam to Whychus Creek (OR_SR_1707030108_02_102627) (Figure 1). Approximately 24.6% (6.17 miles) of the Spring River assessment unit, and 5.3% (1.98 miles) of the Whychus Creek assessment unit fall within City limits. DEQ has not yet developed Total Maximum Daily Loads for these assessment units. Table 1 describes category 5 303d pollutants listed in the most recent DEQ 2022 Integrated Report.



Figure 1



**Table 1: 2022 303(d) Integrated Report List**

Assessment Unit	303d pollutants	Year listed	Year last assessed	DEQ TMDL Priority
Deschutes River – Spring River to North Unit Diversion Dam	Turbidity	1998	1998	Low
	pH	2022	2022	Medium
	Temperature	2004	2022	Medium
	Sedimentation	1998	1998	Low
Deschutes River – North Unit Diversion Dam to Whychus Creek	Temperature	2004	2022	Medium
	pH	2004	2018	N/A pH was removed from the 2022 report list

2023 Integrated Stormwater Management Program Document

In November of 2023, the City of Bend completed and submitted an Integrated Stormwater Management Program (ISWMP) document to DEQ with the Fiscal Year 2022-2023 stormwater annual report. This document describes how the City will implement the required measures in its two regulatory stormwater permits from the Oregon Department of Environmental Quality (DEQ). The ISWMP describes 25 individual BMPs that address 303d listed pollutants from the 2022 DEQ Integrated Report, as well as additional common stormwater pollutants such as herbicides and pesticides, and new and emerging pollutants such as per-and polyfluoroalkyl substances (PFAs).

MS4 Evaluation

The 25 BMP measures listed in the ISWMP cover all six of the control measure categories listed in the MS4 permit including public education and outreach, public involvement, illicit discharge detection and elimination, construction site runoff control, post construction site runoff for new development and redevelopment and pollution prevention and good housekeeping for municipal operations (Table 2). This ensures the BMPs in the ISWMP document were designed to address the most important categories and pathways of pollutants to the MS4 system and prevent any reasonable likelihood that stormwater from the City's MS4 system causes or contributes to degradation of receiving waters. Furthermore, as of the date of this report, the City is currently implementing or currently plans to implement the 25 BMPs in accordance with the schedule and deadlines in the MS4 permit.

**Table 2: List of ISWMP BMP's Addressing 303(d) Pollutants**

#	City BMP Number	City BMP Name	Primary Pollutants/Parameters Addressed				
			Temperature	Sediment/turbidity	pH	pesticides/herbicides	PFAs
1	ED-1	Provide Public Education Regarding Stormwater Management	X	X	X	X	X
2	ED-2	Implement a School Stormwater Education Program	X	X	X	X	X
3	ED-3	Provide Stakeholder Outreach Regarding Stormwater Management	X	X	X	X	X
4	ED-4	Provide Staff Education Related to Stormwater Management	X	X	X	X	X
5	PI-1	Maintain a Stormwater Program Website	X	X	X	X	X
6	PI-2	Provide Stormwater Volunteer/Stewardship Opportunities	X	X	X	X	X
7	ID-1	Implement Illicit Discharge Regulations	X	X	X	X	X
8	ID-2	Implement Spill and Illicit Discharge Reporting and Response Procedures	X	X	X	X	X
9	ID-3	Dry Weather Outfall Screening	X	X	X	X	X
10	EC-1	Implement Erosion and Sediment Control Code and Ordinances	X	X	X		
11	EC-2	Conduct Erosion Control Plan Review and Permitting	X	X	X		
12	EC-3	Conduct Erosion Control Site Inspections	X	X	X		
13	PC-1	Implement and Update Post-Construction Stormwater Code and Standards	X	X		X	
14	PC-2	Implement Stormwater Plan Review and Structural Stormwater Facility Installation Inspections for New/Redevelopment	X	X		X	
15	PC-3	Public Structural Stormwater Facility Inspection and Maintenance Program	X	X		X	
16	PC-4	Private Structural Stormwater Facility Inspection and Maintenance Program	X	X		X	
17	OM-1	Maintain an MS4 Map	X	X		X	
18	OM-2	Conduct Stormwater Infrastructure Maintenance	X	X			
19	OM-3	Conduct Street Sweeping and Roadway Maintenance Activities	X	X	X		
20	OM-4	Implement a Winter Maintenance Program	X	X	X		
21	OM-5	Implement Stormwater Controls on Municipal Property	X	X	X		
22	PL-1	Stormwater Planning for Water Quality Improvements	X	X	X	X	X
23	PL-2	Conduct Retrofit or Decommissioning of Public UICs	X	X	X	X	X
24	UIC-1	Regulate UIC Installations and Closures		X		X	X
25	UIC-2	Conduct Stormwater Monitoring for UICs		X		X	



Another important aspect to consider is the size of the MS4 system and nature of stormwater management in Bend. The City's MS4 system covers a small area in comparison to the WPCF UIC stormwater infrastructure that relies on infiltration to manage stormwater, further reducing the likelihood of the MS4 to contribute to receiving water degradation. In addition, in May of 2023, the City completed a capital project to retrofit the Newport Avenue Corridor which drains the City's largest MS4 basin. A combination of UICs, surface stormwater planters, and underground filter vaults were installed as part of the project to treat stormwater runoff from the MS4 prior to entering the Deschutes River.

Because there have been no significant changes since the 2022 integrated report pollutants list was approved by the US EPA in September of 2022, the BMPs listed in the ISWMP document are current and do not require updates at this time. The City may update BMPs in the ISWMP document when changes are made to future DEQ integrated reports to capture any newly listed pollutants and ensure they are being addressed by the stormwater program efforts.



Accommodation Information for People with Disabilities

To obtain this information in an alternate format such as Braille, large print, electronic formats, etc., please contact the Accessibility and Equity Department at accessibility@bendoregon.gov or 541-693-2198. Relay Users Dial 7-1-1.

CITY OF BEND
STANDARD OPERATING PROCEDURE

Standard Operation of: Stormwater Infrastructure Operation and Maintenance	Creation Date: 10/24/08
Approved By: Andy Robins Author: Travis Somers Reviewed By: Elisabeth O'Keefe	Revision No or Date: Rev. 2/9/11 Rev. 10/28/24
<p>Subject: This section contains information on the operation and maintenance of City of Bend public stormwater infrastructure including maintenance tracking, scheduling, data management, inspections, infrastructure repair, customer service response, and flood management procedures.</p>	
<p>Scope: The City of Bend stormwater infrastructure system is fully inspected and maintained on a two-year cycle by a five-person field crew comprised of one stormwater utility lead and four collection utility staff. In addition to existing infrastructure, the City inspects all newly installed infrastructure for the 1 year warranty and all grey infrastructure (concrete structures). System repairs are scheduled upon inspection results and customer service complaints are responded to regularly.</p>	
<p>System Infrastructure: The City's stormwater infrastructure contains 31,825 individual stormwater assets consisting of catch basins, curb inlet basins, lynch basins, up basins, channel drains, distribution boxes, sedimentation manholes, storm manhole, vaults, storm filters, storm main segments, outfalls, pipe inlets, drill holes, drywells and stormwater swales.</p>	
<p>Data Management: All stormwater infrastructure inspection, maintenance, and repair work is captured by the Utility Department within the City of Bend's asset management database called INFOR. Additionally, geographic data for stormwater infrastructure is maintained in ArcGIS by the Office of Performance Management Department.</p>	
<p>Inspection Process: Stormwater infrastructure inspections are organized by location into 67 distinct preventive maintenance zones (Attachment A: Stormwater Maintenance Zones). Stormwater preventative maintenance is tracked in the city's asset management system, INFOR. Stormwater preventative maintenance schedules are released monthly from February through November by the stormwater lead. Preventative maintenance work is not scheduled in December and January to allow staff to focus on fall debris and winter snow maintenance which includes reinspection of all zones to clear storm drain grates and curb inlets of debris. Routine preventative maintenance may occur in December and January if weather/temperatures permit however priority is assigned to flood response and customer complaints.</p>	

Storm Water Swales: The City of Bend has 267 stormwater swales. These swales are inspected and maintained in April, June, and August each year by stormwater staff. The swale preventative maintenance is stored in the city's asset management system.

Annual Inspection Schedule:

Month	Preventative Maintenance Zones
January	Fall Cleanup All Zones Snow Removal Snow Removal- Routine Maintenance (Weather Permitting)
February	7A – 4B – 4J – 4K – 1A Fire Department PM – Downtown Channel Drain PM
March	1F – 3D – 6A – 6B – 6C – 6D – 6E – 6F – AM Downtown PM – Airport PM – Newport Filtration Vault PM – West Hills PM
April	3B – 2A – 6I – 6N – 2D – Downtown Channel Drain PM – Franklin Underpass Vault PM – Swale Maintenance PM
May	8A – 8B – 8C – 2E – 2B – 7D
June	6I – 6M – 2G – 3A – 2H – 5E – 4C – Downtown Channel Drains PM – Swale Maintenance PM
July	5A – 5B – 6K – 6J – 7E – 4D – 3 rd St Underpass PM
August	1G – 7B – 7C – 5C – Downtown Channel Drains – Swale Maintenance
September	3C – 5D – 2C – 3E – 5F – West Hills PM – Newport Filtration Vault PM – Franklin Underpass Vault PM
October	1D – 6H – 6G – 1B – 2F – 4E – 4F – 4G – 4H – 4I – AM Downtown PM – West Hills PM – Downtown Channel Drains PM
November	8A – 8B – 8C – 1C – 1E – 4A – West Hills PM – Fall Cleanup All Zones
December	Fall Cleanup All Zones – Snow Removal – Routine Maintenance (Weather Permitting)

Inspection and Maintenance Documentation: All stormwater work is captured within the City of Bend asset management system, INFOR. After a monthly PM is released by the stormwater lead, zone maps are generated from the City of Bend's Utility Viewer and stored on the City of Bend's S drive. Stormwater operators are provided with a paper 11"x17" zone map with a time tracking form attached. Operators first perform a zone inspection to identify any stormwater assets in need of maintenance (See Attachment B: Routine Inspection Form – Triggers for Required Maintenance or Repair). Storm assets requiring maintenance are circled on the map with a red pen and assets not in need of maintenance are crossed off with a blue or black pen. Assets in need of repair are documented in the field on the time tracking form or map. The stormwater operator will then create a new INFOR workorder for every asset that needs repair. The damaged asset will then be evaluated by the stormwater lead and scheduled for repair. Stormwater operators will complete the zone maintenance work order, tracking their time and a rough estimate of the material they removed. Once the PM has been completed, all operator time, equipment time and material removed will be entered by the stormwater utility worker into INFOR. The stormwater lead reviews the

workorder and assigns it to the collection systems supervisor for closure in INFOR.

Stormwater Swales: The stormwater swale PM is released in April, June and August. The stormwater swales are broken down into 10 zones and each have a map book dedicated to each zone. Stormwater staff will work through all the zones inspecting each swale and performing maintenance as needed. Storm staff will also fill out a form that tracks the date, time and maintenance performed. This information will then be entered into the city's asset management system (INFOR) once maintenance is complete. Supplemental inspections are performed annually by compliance staff to document a broader look at each facility. Compliance staff assign a maintenance rating for each facility based on the Vegetated Water Quality Facility Inspection rating criteria (Attachment C). The value assigned to each facility is focused on overall function. This includes maintaining and replacing vegetation as well as the protection and maintenance of soil permeability to ensure water quality treatment is provided as designed. Compliance inspection data is stored on the stormwater sharepont site.

Stormwater Complaints/CSR's: Stormwater maintenance complaints received by the City generally involve drainage and blockage issues in the right of way. Complaints are received through the online complaint form ([link](#)), the online code enforcement module in CityView, or by phone to utility department customer service staff. After receiving a complaint, customer service staff notify the stormwater lead and operators, and generate an INFOR workorder with complaint information. The stormwater lead or operator contacts the customer and attempt to resolve the issue in a timely manner.

After the stormwater complaint is resolved, all time, equipment, and materials used are entered on the INFOR workorder for review and close out.

If the issue requires a long-term solution beyond the capabilities of the stormwater crew, the stormwater lead will fill out a utility department stormwater flooding report. and communicate this to the original customer complaint. Flooding reports are then reviewed and prioritized for capital improvements by the Assistant City Engineer and Stormwater Management Team. This information is documented within the original INFOR workorder. The workorder will then be reviewed by the storm lead and closed by the supervisor.

Attachment B: Routine Inspection Form – Triggers for Required Maintenance or Repair

Storm Drain (DCB) Inspection:

- Accumulation of 30% or more of debris (measured from bottom of the catch basin to bottom of pipe invert or top of drill hole)
- Large debris in catch basin (sticks, rocks, asphalt, concrete etc.)
- Floating debris (cans, bottles, toys etc.)
- Storm grate or curb line loaded with debris
- Floating debris mat
- Plugged drill hole filter
- Structure condition (damaged frame/grate(s), pre-cast curb inlet, concrete, sinkholes etc.)
- If suspected Illicit discharge, contact Sam Rossi 541-419-8733 or Billy Johnson 458-600-7728
- If the area is under construction and contractor's filters/erosion control devices are present, check the condition. If they need cleaned contact Sam Rossi 541-419-8733 (Utility Program Compliant Specialist) or Billy Johnson 458-600-7728

Sedimentation Manhole (DSMH)

- Inspect sed. manhole if the upstream storm drain was identified to receive maintenance.
- Accumulation of 30% or more of debris (measured from bottom of the sed. manhole to bottom of the pvc oil/water separator)
- Visible oil sheen on the waters surface
- Inspect the condition of the structure and concrete access pad

Drywell (DDW)

- Inspect drywell if the upstream storm drain or sed. manhole was identified to receive maintenance.
- Accumulation of 30% or more of debris (measured from bottom of the drywell to the top of drywell curtain)
- Inspect drywell curtain, note if its collapsing
- Inspect the condition of the structure and concrete access pad

Storm Pipe (DSP)

- If one of the above stormwater structures was identified for maintenance, visually inspect stormwater pipe. In the event a visual inspection is not possible, spray water into the upstream pipe and check downstream pipe for flow. If there is no downstream flow or if you are unable to get the downstream flow to run clear, jet the storm water pipe.



UTILITY DEPARTMENT

Vegetated Water Quality Facility Inspection Rating Criteria

Rating	Criteria
<i>No Maintenance Needed</i>	
1: Excellent	No apparent problems associated with the facility. All components appear to be operating properly and are structurally sound. Storm filter-style vaults, sediment manholes, and catch basins have no sediment and are generally clean. The facility is well vegetated or has new plantings, does not include any invasive species, and does not show sediment accumulation. No erosion or sediment accumulation. There are no immediate maintenance needs.
<i>Routine Maintenance Needed</i>	
2: Good	The facility is generally in operational condition. All components appear to be operating properly and do not show any serious structural problems. Storm filter-style vaults, sediment manholes, and catch basins may have minor sediment accumulation but are generally clean. The facility does not have any serious vegetation problems, is not overgrown by invasive species, and has only minor sediment accumulation. Any erosion is minor. Maintenance tasks are limited to minor trash cleanup.
3: Fair	Some problems are evident in the facility, but none are severe enough to seriously impede proper function. All components appear to be operational, and none show serious structural damage. Storm filters in vaults or catch basins have some sediment accumulation but have no indication of blockage (e.g. no sediment on filter casings and no scum line on walls of the vault). The facility is somewhat vegetated, is not completely overgrown with invasive species, and sediment accumulation is not severe enough to prevent proper function. Any erosion is moderate at worst. Maintenance tasks include removing trash and debris from the facility, digging out blockages of inlet and outlet structures, and removing invasive species.
<i>Non-Routine Maintenance Needed</i>	
4: Poor	The facility has problems extensive enough to partially prevent proper treatment. One or more components may not be operational, and the facility requires maintenance or repair to restore proper function. Storm filters in catch basins and vaults have indications of blockage and significant sediment accumulation on the filters casings and structure floor, and/or a significant scum line on the walls. The facility lacks vegetation and/or may be overgrown with invasive species. The facility may be overgrown by invasive species. There may be considerable sediment accumulation and/or erosion problems. Maintenance tasks require replacement of broken facility components and may require a professional contractor to complete the work. Maintain plantings and soil media per approved plans.
5: Very Poor	The facility has extensive problems. Some or all components are not operational and require immediate attention. Vegetation problems are severe enough to reduce the extent of treatment. Erosion or sediment accumulation may be extreme. Maintenance tasks are extensive, may require professional help to complete. Maintain and reconstruct plantings and soil media per approved plans.

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