



2019 STORMWATER MANAGEMENT PROGRAM (SWMP) PLAN

March 27, 2019

Prepared by
City of Snoqualmie
Parks and Public Works Department
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Note:

Some pages in this document have been purposely skipped or blank pages inserted so that this document will copy correctly when duplexed.

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EXECUTIVE SUMMARY

The City of Snoqualmie (City) has obtained coverage under the National Pollution Discharge Elimination System (NPDES) Phase II Municipal Stormwater Permit (Phase II permit) issued by the Washington State Department of Ecology. The Phase II permit is a federal requirement under the Clean Water Act that regulates the discharge of stormwater to surface waters and to ground waters of the State. The 2013–2018 Phase II permit (extended through July 31, 2019) requires all permitted municipalities to create and implement a Stormwater Management Program (SWMP), which address **five** required program elements. These elements include:

1. Public Education and Outreach
2. Public Involvement and Participation
3. Illicit Discharge Detection and Elimination (IDDE)
4. Controlling Runoff from New Development, Redevelopment and Construction Sites
5. Municipal Operations and Maintenance

Green boxes note items due in 2019.

Beige boxes note items that must be continued, or that are due annually.

The 2019–2024 Phase II permit which will be effective on August 1, 2019 (currently in draft form) requires all permitted municipalities to create and implement a SWMP, which address **eight** required program elements. These elements include:

1. Comprehensive Planning for Stormwater Management
2. Public Education and Outreach
3. Public Involvement and Participation
4. Municipal Separate Storm Sewer System Mapping and Documentation
5. Illicit Discharge Detection and Elimination (IDDE)
6. Controlling Runoff from New Development, Redevelopment and Construction Sites
7. Municipal Operations and Maintenance
8. Source Control Program for Existing Development

This document was prepared to meet the City's Phase II permit requirement for annual revision and development of a SWMP Plan to address the five required program elements in the 2013–

2018 Phase II permit and the eight required program elements in the 2019–2024 Phase II permit. In addition, this SWMP Plan also addresses requirements in S7, S8, and S9 of the Phase II permit which cover:

- Compliance with Total Maximum Daily Load Requirements (Section S7)
- Monitoring and Assessment (Section S8)
- Reporting Requirements (Section S9)

Finally, this SWMP Plan outlines all the requirements of the Phase II permit and provides a summary of the City's progress towards meeting those requirements.

THE GOAL

The goal of this SWMP Plan is to reduce the discharge of pollutants from the City's Municipal Separate Storm Sewer System (MS4) to the maximum extent practicable to protect water quality.

SUMMARY OF 2019 PHASE II PERMIT REQUIREMENTS

- Fully develop and implement the SWMP.
- Map known MS4 outfalls, known MS4 discharge points, receiving waters, stormwater treatment best management practices (BMPs)/facilities, flow control BMPs/facilities, and tributary conveyances with a 24-inch nominal diameter or larger.
- Implement an ongoing program designed to detect and identify non-stormwater discharges and illicit connections into the MS4.
- Implement an ongoing program designed to address illicit discharges, including spills and illicit connections, into the MS4.
- Inspect and, if needed, clean all catch basins and inlets owned or operated by the City (once during the Phase II permit term).
- Ongoing staff training for IDDE.
- Ongoing response to spill and illicit discharge hotline calls.
- Track additional information related to illicit discharges and report this information to Ecology through the WQWebIDDE system.
- Pay into the collective fund to implement the Regional Stormwater Action Monitoring (SAM) program.

SUMMARY OF 2018 HIGHLIGHTS

Public Education

- Offered 18 planting events in 2018 through the Green Snoqualmie Partnership. Approximately 437 participants volunteered in planting events in 2018.
- Evaluated the City's pet waste program. Approximately 190,000 pet waste bags were purchased and used in 2014; 190,000 in 2015; 200,000 in 2016; 220,000 in 2017; 208,000 in 2018 at pet waste bag dispensers.

Public Participation

- Promoting the redesigned City website in early 2018. Major updates to the City's website included a new, more user-friendly look and additional resources for residents and businesses.

Illicit Discharge Detection and Elimination (IDDE)

- Ongoing mapping.
- Ongoing field screening of catch basins for illicit discharges.
- The spill reporting hotline received 1 call in 2018.
- Presented illicit discharge trainings to City staff in March and December 2018.
- Presented a standard operating procedure training to City staff in December 2018.
- Presented training on the updated SWPPP to City staff in December 2018.
- Developed an illicit discharge inspection form.

Controlling Runoff from Development and Construction

- Finalized the City's Addendum to the 2016 King County Surface Water Design Manual in (final version is dated January 2, 2019).
- Conducted permitting and plan review for new development and redevelopment projects.
- Prepared summary report that summarized the review of the City's municipal code to facilitate implementation of LID principles and LID BMPs.

- Continued enforceable document review (Citywide Comprehensive Plan, Parks Plan, and Development Standards) to facilitate implementation of low impact development (LID) principles and LID best management practices (BMPs).

Municipal Operations and Maintenance

- Conducted annual inspections of 40 stormwater ponds, 15 swales, 3 stormceptors, and 4 filter cartridge vaults.
- A total of 2,821 catch basins were inspected in and 1,063 catch basins were cleaned in 2018. The City has cleaned 3,104 catch basins since the Phase II permit began in 2013.
- Updated the Stormwater Pollution Prevention Plan (SWPPP) for the City's Public Works Operations Facility (City Shop).
- Developed a catch basin inspection form.

INTRODUCTION

PURPOSE

This document was prepared to meet the City of Snoqualmie's (City) requirement for development of a Stormwater Management Program (SWMP) Plan as required under condition S5 of the National Pollution Discharge Elimination System (NPDES) Phase II Municipal Stormwater Permit (Phase II permit).

This SWMP Plan outlines the requirements in the Phase II permit and summarizes the City's work program for the upcoming calendar year, January 1, 2019, through December 31, 2019. Since 2019 is a transition year between the 2013–2018 Phase II permit (extended through July 31, 2019) and the 2019–2024 Phase II permit is still in draft form, this document reflects the City's plans for ongoing compliance with the 2013–2018 Phase II permit and the proposed language in the 2019–2024 Phase II permit, but may need to be modified once the final 2019–2024 Phase II permit is released.

The SWMP Plan must include a written description of department coordination mechanisms to eliminate permit barriers, and opportunities for public participation in the SWMP Plan development and decision-making process, which were required starting August 1, 2014.

The City must post the SWMP Plan to its website, and the annual report required under S9.A, no later than May 31 each year.

While not stipulated in the Phase II permit, this SWMP Plan also reviews previous activities (January 1, 2015, through December 31, 2018) that have helped maintain compliance with Phase II permit conditions.

THE NPDES PROGRAM

The National Pollutant Discharge Elimination System (NPDES) program was created under the Federal Clean Water Act with the intent of protecting and restoring water quality in lakes and streams so that they can support "beneficial uses" such as fishing and swimming. Governmental and private entities wishing to discharge water or wastewater to surface waters regulated by the Federal Government (Waters of the US) must obtain permits and comply with certain conditions or face fines and other penalties.

In Washington State, the United States Environmental Protection Agency has delegated the authority over NPDES permits to the Washington State Department of Ecology (Ecology). Ecology has issued several general permits for stormwater system discharges that apply to

municipalities with different population sizes. The Phase II permit refers to those municipalities with a population of less than 100,000 according to the 1990 census.

PHASE II PERMIT

The City has a population of 13,110 and must comply with the Phase II permit as issued by Ecology under a 5-year term starting August 1, 2012, effective August 1, 2013, and modified January 16, 2015. The Phase II permit was originally set to expire on July 31, 2018, but was extended for 1 year to July 31, 2019. The Phase II permit allows cities, counties, and secondary permittees to discharge stormwater from municipal systems into "waters of the state" such as rivers, lakes and streams, as long as they implement programs to reduce stormwater pollutants to the "maximum extent possible" by conducting activities in the following program areas:

- Public Education and Outreach
- Public Involvement
- Illicit Discharge Detection and Elimination (IDDE)
- Controlling Runoff from New Development, Redevelopment, and Construction Sites
- Municipal Operations and Maintenance
- Monitoring and Assessment

In addition to the program areas listed above, the draft 2019–2024 Phase II permit also includes the following program areas:

- Comprehensive Planning for Stormwater Management
- Municipal Separate Storm Sewer System Mapping and Documentation (formerly in the IDDE section)
- Source Control Program for Existing Development

PHASE II PERMIT REPORTING

Progress on implementing this SWMP Plan should be documented annually and submitted to Ecology on March 31. The Annual Report, current SWMP Plan, and associated documents are also posted on the City web site.

Specific Phase II permit requirements are summarized in the following sections along with planned activities and previously conducted activities for each specific element of the SWMP.

DEPARTMENT RESPONSIBILITIES

The Phase II permit broadly applies to many city activities, including maintenance and operations of city facilities, permitting and inspections of new development and redevelopment, and other activities conducted in different City departments and divisions, including:

- The Parks and Public Works (P/PW) Department.
- The Community Development (CD) Department.

P/PW acts as the coordinator between City departments to verify that all Phase II permit requirements are being implemented. These tasks will be further refined each year in accordance with specific Phase II permit conditions.

PUBLIC COMMENTS

The City appreciates public input in the ongoing development and implementation of this document. Comments or concerns regarding this SWMP Plan may be sent to the following address:

City of Snoqualmie
Parks and Public Works Department
Attention: Tom Holmes, Stormwater Program & Wastewater Superintendent
38624 SE River Street
P.O. Box 987
Snoqualmie, WA 98065

COMPREHENSIVE STORMWATER PLANNING

OVERVIEW

This is a new permit section that was not included in the 2013–2018 Phase II permit. Section S5.C.1 in the draft 2019–2024 Phase II permit describes requirements for comprehensive stormwater planning:

- **Coordination with long-range plan updates:** Report how water quality and watershed protection were addressed in the 2013–2018 Phase II permit cycle will be addressed during the 2019–2024 Phase II permit cycle.
- **Low impact development code-related updates:** Continue the code and enforceable document review process required by section S5.C.4.f. of the 2013–2018 Phase II permit to minimize impervious surfaces, native vegetation loss, and stormwater runoff from development. In addition to integrating LID principles into new documents and code, existing documents and code should be reviewed on an annual basis for barriers to LID.
- **Stormwater Management Action Planning:** This requirement includes documenting and assessing existing information related to local receiving waters and contributing areas, prioritizing receiving waters (no later than June 30, 2022), and developing a Stormwater Management Action Plan (SMAP) for at least one high-priority basin (no later than December 31, 2022).

PLANNED ACTIVITIES

The City plans to implement the activities listed in Table 1 in 2019.

Table 1. Planned Comprehensive Stormwater Planning Activities for 2019.		
Item	Department/ Public Involvement	Timeline Notes
Describe how water quality and watershed protection were addressed during the 2013–2018 Phase II permit cycle in updates to the City's Comprehensive Plan.	P/PW	Due by March 31, 2020
Annual LID code review: Assess previously identified barriers and report newly identified administrative or regulatory barriers. to implementation of LID principles or LID BMPs	P/PW and CD	Ongoing

PAST ACTIVITIES

None to report; this is a new permit section.

PUBLIC EDUCATION AND OUTREACH

OVERVIEW

The 2013–2018 Phase II permit (Section S5.C.1) requires the City to provide a stormwater education and outreach program that will:

- Prioritize and address Phase II permit target audiences and subject areas most relevant to current City stormwater issues and practices.
- Develop education and outreach programs designed to reduce or eliminate behaviors and practices that cause or contribute to adverse stormwater impacts.
- Create opportunities for, and/or partner with organizations encouraging residents to participate in, stewardship activities such as stream teams, storm drain marking, volunteer monitoring, riparian plantings and education activities.
- Measure the understanding and adoption of the targeted behaviors for at least one target audience in at least one subject area. As a New Permittee, the City must begin using resulting measurements to direct education and outreach resources most effectively, as well as evaluate changes in targeted behaviors, by August 1, 2017.

According to S5.C.1 in the 2013–2018 Phase II permit, the City was required to develop and begin to implement its public education and outreach program no later than August 1, 2015. The Phase II permit lists target audiences and subject areas for education, and target audiences and Best Management Practices (BMPs) with a goal of behavior change.

The draft 2019–2024 Phase II permit (Section S5.C.2) requires the City to provide a stormwater education and outreach program that will:

- Build general awareness about methods to address and reduce impacts from stormwater runoff.
- Effect behavior change to reduce or eliminate behaviors and practices that cause or contribute to adverse stormwater impacts.
- Create stewardship opportunities that encourages community engagement in addressing the impacts from stormwater runoff.

The requirements for the public education and outreach program were expanded in the draft 2019–2024 Phase II permit to include:

- Selecting at least one target audience and one subject area for an annual general awareness program.
- Selecting one target audience and one BMP for a behavior change program.
- The behavior change program must be evaluated by July 1, 2020.
- The City shall implement social marketing practices and methods to develop a program evaluation plan and tailor the behavior changes program by February 2, 2021.

PLANNED ACTIVITIES

The City currently implements and participates in stormwater outreach and environmental education programs. The education program to date has consisted of activities such as providing on-line and print material, direct target audience outreach, and coordination with regional agencies. Past stormwater education activities are summarized in the following section. The Phase II permit public education program is developed jointly between the Parks and Public Works, and Community Development Departments. Outreach activities, funding sources, and implementation schedule are planned annually for future years. Highlights of the planned activities for 2019 include:

- Continued publication and promotion of spill reporting hotline.
- Continued coordination with Ecology staff and other NPDES jurisdictions.
- Continued stewardship activities through partnerships with Green Snoqualmie and King County.

Ongoing public education activities include:

- Publication and promotion of spill reporting hotline
- Volunteer stewardship projects

Table 2 summarizes the planned 2019 City programming, with target audiences, activities and behaviors.

Table 2. Planned Education and Outreach Programs and Activities for 2019.

Item	Target Audience	Goal/Behavior/Activity	Cost (estimate)
City Website	General Public	The City's website has been used to promote community activities and educational opportunities.	N/A
Spill Response	General Public	Continue to monitor water quality complaints, spill reporting and illicit discharge reporting hotline, and publicize it via news releases and the City website. Businesses and citizens who are found to be causing illicit discharges receive education, and potentially enforcement actions, if they refuse to voluntarily correct the problem.	N/A
Newsletter E-Notices	General Public	The City will continue to e-notice in the City News on water-related best management practices. The Newsletter reaches ~700–800 persons in the City e-mail list; ~2,000 Twitter followers, and ~3,000 Facebook followers. This information was also shared with the Snoqualmie Ridge Residential Owners Association (ROA) with its weekly publications reaching ~4,000.	N/A
Promotional Material	General Public and Homeowners	Continue to distribute promotional material on Public Outreach topics developed at City-sponsored events for 2019.	\$3,600
Pet Waste Stations	General Public	The City plans on continuing to provide pet waste disposal bags at the pet waste stations that have been installed in local parks.	\$5,148
Volunteer Stewardship Projects	General Public	The City will be partnering with the Green Snoqualmie Partnership and King County on several planting events in 2019. Green Snoqualmie Partnership events are currently scheduled at Three Forks Natural Area on March 30, 2019 at Cottonwood Forest on April 13, 2019.	N/A
Hazardous Waste Collection	General Public and Homeowners	The City collects fluorescent light bulbs, batteries and prescription medications at various City buildings. The annual hazardous waste collection event sponsored by King County is scheduled for June 28–30, 2019.	N/A
Stormwater Comprehensive Plan	General public, City staff, and Businesses	The City is in the process of updating its Stormwater Comprehensive Plan to better identify projects and programs that protect water resources and water quality.	\$190,000

Measurement and Tracking

The annual public education and outreach program is developed based on local water quality needs, staff experience and feedback from previous programs. Measurement tools utilized for various programs thus far include: number of educational events, actual or estimated number of target audience reached, total amount of site visits, e-mail newsletter counts, number and type

of materials distributed, and anecdotal information from program participants. Programs have not yet utilized post-program surveys, preprogram assessments and social media marketing, but could be integrated in the future. Tracking records on public education and outreach are maintained in independent project files and compiled annually for reporting purposes.

PAST ACTIVITIES

Table 3 summarizes the target audiences and behaviors addressed through public education activities conducted from 2013 through 2018. Some educational programs occur regularly or are static, providing a resource that requires moderate renewed effort once established (e.g., continued webpage content; passive hazardous waste collection sites). Other efforts occur intermittently; for instance, restoration planning continues to inform regular grant applications, but restoration grant awards are more sporadic by nature, and sometimes reflect one-time opportunities. As such, programs are influenced by funding, collaborative opportunities (regional efforts, grants, etc.), and staff time.

Table 3. Previous Education and Outreach Programs and Activities.		
Item	Target Audience	Goal/Behavior/Activity
City Website	General Public	The City's website has been used to promote community activities and educational opportunities. Major updates, including a new, more user-friendly look and additional resources for residents and businesses were launched as part of the City's website redesign in late 2017. The Street and Storm Division Page was separated, a new hotline was generated to Operations-Utilities staff, and information targeted to help developers navigate the City's updated municipal stormwater regulations was added.
Spill Response	General Public	The City continued a water quality complaint, spill reporting, and illicit discharge reporting hotline in 2018 publicized via the City website.
Newsletter E-Notices	General Public	The City e-noticed quarterly in the City News to promote classes, stewardship opportunities, and water-related best management practices. This information was also shared with the Snoqualmie Ridge ROA with its weekly publications.
Promotional Material	General Public and Homeowners	Beginning in 2015, staff has distributed promotional materials on car washes, car leaks and pet waste at City-sponsored events including Arbor Day/Earth Day, Snoqualmie Railroad Days, and Ridge Block Party.
Pet Waste Stations	General Public	The City installed pet waste bag stations and signs in local parks. Bag purchase and use tallies include the following: <ul style="list-style-type: none"> • 2014 = 190,000 bags • 2015 = 190,000 bags • 2016 = 200,000 bags • 2017 = 220,000 bags • 2018 = 208,000 bags

Table 3 (continued). Previous Education and Outreach Programs and Activities.

Item	Target Audience	Goal/Behavior/Activity																		
Volunteer Stewardship Projects	General Public	<p>The Green Snoqualmie Partnership was formed in 2016. The City partnered with the Green Snoqualmie Partnership and King County on several planting events since 2017. Green Snoqualmie Partnership events in 2018 occurred at:</p> <table border="1"><tbody><tr><td>Community Park</td><td><ul style="list-style-type: none">• Apr. 21, 2018 (Earth Day)• Oct. 6, 2018 (Green Snoqualmie Day)</td></tr><tr><td>Cottonwood Forest</td><td><ul style="list-style-type: none">• Jan. 6, 2018• May 12, 2018• July 21, 2018</td></tr><tr><td>Greenridge Natural Area</td><td><ul style="list-style-type: none">• Jan. 15, 2018</td></tr><tr><td>Meadowbrook Slough</td><td><ul style="list-style-type: none">• Oct. 6, 2018 (Green Snoqualmie Day)</td></tr><tr><td>Snoqualmie Point Park</td><td><ul style="list-style-type: none">• Apr. 28, 2018• Nov. 10, 2018</td></tr><tr><td>Snoqualmie River Forest</td><td><ul style="list-style-type: none">• Mar. 10, 2018</td></tr><tr><td>Snoqualmie Valley Community Center</td><td><ul style="list-style-type: none">• Mar. 24, 2018</td></tr><tr><td>Stillwater Bog</td><td><ul style="list-style-type: none">• May 26, 2018• June 23, 2018• Aug. 18, 2018</td></tr><tr><td>Three Forks Natural Area</td><td><ul style="list-style-type: none">• Feb. 24, 2018• Mar. 10, 2018• June 16, 2018• Oct. 21, 2018</td></tr></tbody></table>	Community Park	<ul style="list-style-type: none">• Apr. 21, 2018 (Earth Day)• Oct. 6, 2018 (Green Snoqualmie Day)	Cottonwood Forest	<ul style="list-style-type: none">• Jan. 6, 2018• May 12, 2018• July 21, 2018	Greenridge Natural Area	<ul style="list-style-type: none">• Jan. 15, 2018	Meadowbrook Slough	<ul style="list-style-type: none">• Oct. 6, 2018 (Green Snoqualmie Day)	Snoqualmie Point Park	<ul style="list-style-type: none">• Apr. 28, 2018• Nov. 10, 2018	Snoqualmie River Forest	<ul style="list-style-type: none">• Mar. 10, 2018	Snoqualmie Valley Community Center	<ul style="list-style-type: none">• Mar. 24, 2018	Stillwater Bog	<ul style="list-style-type: none">• May 26, 2018• June 23, 2018• Aug. 18, 2018	Three Forks Natural Area	<ul style="list-style-type: none">• Feb. 24, 2018• Mar. 10, 2018• June 16, 2018• Oct. 21, 2018
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Three Forks Natural Area	<ul style="list-style-type: none">• Feb. 24, 2018• Mar. 10, 2018• June 16, 2018• Oct. 21, 2018																			
Hazardous Waste Collection	General Public and Homeowners	<p>The City collects fluorescent light bulbs, batteries and prescription medications at various City buildings. A hazardous waste collection event sponsored by King County was held from July 6–8, 2018, and July 7–9, 2017, at Mount Si High School's freshman campus in Snoqualmie. Items accepted for disposal free of charge included pesticides, oil-based paints, automotive products (e.g., oil, antifreeze, lamps, etc.), and fluorescent bulbs/tubes.</p>																		
Stormwater Outreach for Regional Municipalities	General Public	<p>The City participated in Stormwater Outreach for Regional Municipalities (STORM), an organization of jurisdictions that have joined to address non-point pollution in the Puget Sound. The City supports regional stormwater awareness campaign activities.</p>																		
Stormwater Utility Rate Structure	General Public and Businesses	<p>The City adopted new Stormwater Utility rates for 2017 through 2020 in February 2017. The approval processes included discussion of Stormwater and water quality with the public and businesses.</p>																		
Stormwater CIP	General public, City staff, and Businesses	<p>The Stormwater Capital Improvement Program (CIP) is included in the City's 20-year CIP, providing public comment opportunity. In addition, a more user-friendly, publicly available format for each project is was implemented by creating the CIP storybook format for council and public presentation.</p>																		

PUBLIC INVOLVEMENT AND PARTICIPATION

OVERVIEW

The 2013–2018 Phase II permit (Section S5.C.2) requires the City to:

- Create opportunities for the public to participate in the decision-making processes involving the development, implementation and updates of the SWMP Plan. The City Plan includes consideration of public comment in the SWMP Plan's development and implementation.
- Make the available SWMP Plan and Annual Report available to the public, including posting on the City's website, no later than May 31 each year.

Ongoing public involvement activities include:

- Posting the SWMP Plan and Annual Report on the City's website

The requirements for public involvement and participation have not changed in the draft 2019–2024 Phase II permit, but are now listed in Section S5.C.3.

PLANNED ACTIVITIES

Table 4 summarizes the public involvement activities planned for 2019.

Table 4. Planned Public Involvement Activities for 2019.			
Item	Department/ Public Involvement	Cost (estimate)	Timeline Notes
The City maintains a web page for the Stormwater Division located under the Public Works and Utilities Division home pages. The web page is updated with the latest Annual Report and SWMP Plan each year.	P/PW	\$0	Ongoing
Work on water quality and watershed issues; with WRIA-7	WRIA-7	\$1,800	Ongoing

PAST ACTIVITIES

Table 5 summarizes the public involvement activities that occurred from 2013 through 2018.

Table 5. Previous Public Involvement Activities.			
Item	Department/ Public Involvement	Cost (estimate)	Timeline Notes
Any studies, projects, proposed rate changes or actions requiring City Council input or approval include a public participation process with public notice, discussion at council committee meetings, and public input at City Council and Council Committee meetings.	P/PW; CD; Parks and Public Works (PPW) and Community Development (CDC) Committees	\$112,000 Equally split by the Water, Sewer and Stormwater Utilities	2015–2017
The Shoreline Hearings Board, created under SMC19.08.210 in 1986, serves to help protect the shorelines of Snoqualmie through updates to the Shoreline Master Program (SMP). The SMP incorporates State Policy RCW 90.58.020 by reference, which states that shoreline “uses shall be preferred which are consistent with control of pollution and prevention of damage to the natural environment.”	P/PW, CD, and Shoreline Hearings Board	\$0	Established in 1986; meets for Plan Updates
The City maintains a web page for the Stormwater Division located under the Public Works and Utilities Division home pages. The web page is updated with the latest Annual Report and SWMP Plan each year.	P/PW	\$0	Ongoing
Work on water quality and watershed issues; includes Snoqualmie Tribe, King County, Snoqualmie Valley cities, and citizen members.	Snoqualmie Watershed Forum	\$0	Established in 2005; ongoing

ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE) AND MAPPING

OVERVIEW

The Illicit Discharge Detection and Elimination (IDDE) program refers to the process of detecting and removing illicit connections and discharges – including spills not under the purview of another responding authority – into the municipal separate storm sewer system (MS4) owned or operated by the City.

Mapping

The 2013–2018 Phase II permit requires the creation and ongoing maintenance of a MS4 map (Section S5.C.3.a). At a minimum, maps are required to include or depict:

- All known municipal separate storm sewer outfalls and MS4 discharge points, receiving waters, and stormwater treatment and flow control BMPs/ facilities owned, operated or maintained by the City.
- Tributary conveyances to all known outfalls and discharge points with a 24-inch nominal diameter or larger (or equivalent cross-sectional area for non-pipe systems), showing all tributary conveyance types, materials and size where known; associated drainage areas; and land uses.
- All authorized or allowed MS4 connections since August 1, 2013.
- Connections between the City's MS4 and MS4s of other municipalities or public entities.
- Geographic areas served by the MS4 that do not discharge stormwater to surface waters.

Ongoing IDDE activities include:

- Municipal stormwater system map updates

These mapping requirements have been moved to the MS4 Mapping and Documentation section (Section S5.C.4) of the draft 2019–2024 Phase II permit and have been expanded to include:

- Size and material of outfalls (beginning on January 1, 2020)
- Connections to privately owned stormwater systems (no later than August 1, 2021)

The required format for maps will be electronic beginning August 1, 2021.

Illicit Discharge Ordinance

The 2013–2018 and the draft 2019–2024 Phase II permit require the City to implement an ordinance or other regulatory action necessary to effectively prohibit non-stormwater, illicit discharges into the stormwater system by February 2, 2016. Ordinance requirements are outlined under S5.C.3.b in the 2013–2018 Phase II permit (S5.C.5.c in the draft 2019–2024 Phase II permit).

IDDE Program

The Phase II permit requires the City to implement an ongoing IDDE program to detect and remove illicit connections, discharges, and improper disposals including spills into the MS4. IDDE program components listed under S5.C.3.c in the 2013–2018 Phase II permit (S5.C.5.d in the draft 2019–2024 Phase II permit) include field screening, a hotline, staff training, communication of hazard information, and other requirements.

Field Screening and Discharge Elimination

This section addresses MS4 field screening investigation procedures for illicit connections (S5.C.3.c.i), and developing procedures to characterize, trace and eliminate illicit discharges, including spills and illicit connections, to the MS4.

The City's IDDE program must:

- Implement a field screening methodology appropriate to the City's MS4 characteristics and water quality concerns, to be documented in the annual report.
- As a New Permittee, the City must field screen at least 12 percent of its MS4 by December 31, 2017, and on average 12 percent annually thereafter.

Ongoing IDDE activities include:

- Annual field screening of 12% of the MS4

Starting in August 2019, the City will also be required to track the total percentage of the MS4 screened

IDDE Timelines

Immediately respond to all illicit discharges, including spills, determined to constitute a threat to human health, welfare, or the environment, consistent with General Condition G3.

Within 7 days on average, investigate or refer to an agency with appropriate authority complaints, reports or monitoring data indicating a potential discharge.

Within 21 days of a report or discovery of a suspected illicit connection, commence an investigation to determine a connection's source, nature and discharge volume, and the party responsible for the connection.

Within 6 months, use the compliance strategy in a documented effort to eliminate the illicit connection upon an illicit connection confirmation. All known illicit MS4 connections shall be eliminated.

The City must also implement procedures for the following per S5.C.3.d.i-iv in the 2013–2018 Phase II permit (S5.C.5.e.i-iv in the draft 2019–2024 Phase II permit):

- Characterizing the nature of, and potential public or environmental threat posed by, any illicit discharges found by or reported to the City. Procedures shall address evaluating whether the discharge must be immediately contained, and the steps to be taken for discharge containment.
- Tracing the source of an illicit discharge, including visual inspections and, when necessary: opening manholes; using mobile cameras; collecting and analyzing water samples; and/or other detailed inspection procedures.
- Eliminating the discharge and its source, including: notifying appropriate authorities; notifying the property owner; technical assistance to eliminate the discharge; follow-up inspections; and use of the compliance strategy developed pursuant to S5.C.3.b.v in the 2013–2018 Phase II permit (S5.C.5.c.iv in the draft 2019–2024 Phase II permit) including escalating enforcement and legal actions if the discharge is not eliminated.
- Compliance with IDDE program procedures shall be achieved by meeting the timelines under S5.C.3.d.iv in the 2013–2018 Phase II permit (S5.C.5.e.iv in the draft 2019–2024 Phase II permit); these are listed in the IDDE Timelines callout box.

Public Information and Hotline

Publicize a hotline or other telephone number for public reporting of spills and other illicit discharges by August 1, 2015 per S5.C.3.c.ii in the 2013–2018 Phase II permit (S5.C.5.d.ii in the draft 2019–2024 Phase II permit).

Training

This SWMP Plan section addresses two Phase II permit sections on staff training, namely training for all field staff who might come into contact with illicit discharge per S5.C.3.c.iii in the 2013–2018 Phase II permit (S5.C.5.d.iii in the draft 2019–2024 Phase II permit) and training staff specifically designated to address illicit discharges per S5.C.3.e in the 2013–2018 Phase II permit (S5.C.5.f in the draft 2019–2024 Phase II permit).

Ongoing IDDE activities include:

- Responding to calls to the illicit discharge hotline
- Training
- Recordkeeping

- All Field Staff: Implement an ongoing training program for all municipal field staff on identifying illicit discharge/connection, and on the proper procedures for reporting and responding to the illicit discharge/connection. This training should be provided to all field staff, who might come into contact with or otherwise observe an illicit discharge or illicit storm system connection as part of their normal job responsibilities (S5.C.3.c.iii in the 2013–2018 Phase II permit; S5.C.5.d.iii in the draft 2019–2024 Phase II permit).
- Designated Field Staff: Municipal field staff responsible for identification, investigation, termination, cleanup, and reporting of illicit discharges, including spills, and illicit connections are required to be trained to conduct these activities (S5.C.3.e in the 2013–2018 Phase II permit; S5.C.5.f in the draft 2019–2024 Phase II permit).
- Both Training Program Components: Provide follow-up training as needed to address changes in procedures, techniques, requirements or staffing. Document the trainings provided and the staff trained, including the number of trainings and staff trained, names of staff trained and training topics.

Hazard Information

- Inform public employees, businesses, and the general public of the hazards associated with illegal discharges and improper waste disposal by February 2, 2017 per S5.C.3.c.iv in the 2013–2018 Phase II permit (S5.C.5.b in the draft 2019–2024 Phase II permit).

Recordkeeping

According to S5.C3.f in the 2013–2018 Phase II permit (S5.C.5.g in the draft 2019–2024 Phase II permit), the City should track and maintain records of activities conducted to meet the requirements of the Phase II permit. Per Sections S5.C.3.a–e of the 2013–2018 Phase II permit

(S5.C.5.b-f in the draft 2019–2024 Phase II permit), this means the City should track and at least retain records of the following:

- Connections to the MS4 authorized or allowed by the City after August 1, 2013.
- Number inspections made for illicit connections, including field screenings.
- Number of illicit discharges, including spills, identified and/or eliminated.
- Number of trainings provided, training subjects, and the staff trained.

The draft 2019–2024 Phase II permit also requires the City to track specific information to submit to Ecology through the WQWebIDDE system. This information includes the following:

1. City name and permit number
2. Incident ID assigned by the City
3. Date of incident
4. Date incident was reported to the City
5. Date of beginning of response
6. Date of end of response
7. Discharge to MS4?
8. How was the incident discovered or reported to the City?

Starting in 2019, the City will also be required to track additional information related to illicit discharges and report this information to Ecology through the WQWebIDDE system

If the illicit discharge enters the MS4, the City must also provide the following information:

9. G3 notification?
10. Incident location
11. Pollutants identified
12. Source or cause
13. Source tracing approach used
14. Correction/elimination methods used
15. Field notes, explanations, and/or other comments

PLANNED ACTIVITIES

The City currently conducts a variety of IDDE program activities; major items for continued compliance include:

- Update draft procedures to comply with IDDE program requirements.
- Maintain and continue to publicize a spill hotline.
- Track the number of illicit discharges and illicit connections, including spills.
- Field screening of 12 percent of the MS4 annually.

The IDDE activities planned for 2019 are summarized in Table 6.

Table 6. Planned IDDE Activities for 2019.

Item	Departments	Timeline Notes
Mapping. Map known MS4 outfalls, known MS4 discharge points, receiving waters, stormwater treatment and flow control BMPs/facilities owned or operated by the City, tributary conveyances for 24-inch nominal diameter or larger outfalls and discharges points, connections between the MS4 and other municipalities or public entities, and geographic areas that do not discharge stormwater to surface waters. Continue to track and map all new MS4 connections.	P/PW, CD, GIS	Ongoing
Ordinances. Continued enforcement of SMC 15.18.150 (Illicit Discharges to storm water system or water prohibited).	P/PW and CD	Ongoing
Field Screening. Implement ongoing field screening of the City's MS4.	P/PW	Screen 12% of the MS4 per year.
Hotline. Maintain spill reporting hotline number; continue to publicize via the City website, signs at 7 City-owned stormwater ponds, and public outreach materials.	P/PW	Hotline established; maintenance ongoing.
City Staff Trainings. Encourage City staff to attend the fall 2019 trainings on illicit connection and illicit discharge field screening and source tracing that will be part of the IC/ID Field Screening and Source Tracing Manual update.	City Staff	Trainings will be offered in the fall of 2019.
IDDE Procedures. Implement procedures to comply with IDDE characterization, tracing, and elimination requirements.	P/PW	Ongoing
Spills. Implement spill reporting forms. Investigate spill sources and follow up, including code enforcement as necessary.	P/PW	Ongoing
Recordkeeping. Explore documentation of ongoing field screening using new asset management software (MaintStar). Update spill reporting form and/or develop a spreadsheet to track the information required in Appendix 12 of the draft 2019–2024 Phase II permit that needs to be reported to WQWebIDDE.	P/PW and IT	Ongoing; deadline for starting to track the WQWebIDDE information will be included in the final 2019–2024 Phase II permit

PAST ACTIVITIES

The City has been working towards IDDE program compliance. Major items completed from 2015 through 2018 are summarized in Table 7.

Table 7. Previous IDDE Actions and Activities.		
Item	Departments	Timeline Notes
Mapping. The City has been recording all connections to the MS4 as they are received since August 1, 2013. In 2013 the City hired Tetra Tech to develop the Snoqualmie Ridge Stormwater System Operations Manual, which included additional, limited stormwater map data development.	P/PW, CD, and IT	All new authorized MS4 connections must be mapped since August 1, 2013.
Ordinances. In 2011, the City adopted Ordinances 1081 and 1082. Ordinance 1081 addressed Chapter 15.18 Surface and Stormwater Management and Ordinance 1082 addressed Chapter 15.20 Clearing and Grading. In 2014, the Street & Storm Division webpage was updated to provide additional information and guidance regarding the updated City Stormwater Regulations.	P/PW and CD	Ordinance implemented in 2011. Website updated in 2014.
Field Screening. The City developed a methodology and work plan for a field screening program and tracks the percentage of the MS4 screened annually. The City developed an illicit discharge inspection form in 2018.	P/PW	Screen 12% of the MS4 per year.
Hotline. The City established a spill reporting hotline number which it publicized via the City website, signs at 7 City-owned stormwater ponds, and public outreach materials. In 2015, 2016, and 2017, the hotline received zero calls. In 2018, the hotline received 1 call. The spill hotline reporting form is provided in Appendix A of this plan.	P/PW, CD, IT, and Communications	Operational as of February 20, 2015
City Staff Trainings. In 2015 and 2018, City staff attended staff trainings on illicit discharge awareness, and response and enforcement. Training topics and a list of participating staff are included in Appendix A of this plan.	P/PW, CD, Police, and Fire	Trainings conducted in January 2015 and March 2018.
IDDE Procedures. In 2018, the City developed draft procedures to comply with IDDE characterization, tracing, and elimination requirements.	P/PW	Operational as of February 2, 2018
Spills. In 2014, staff established ERTS notice designees, and began tracking spills according to Ecology guidelines. The City developed an internal spill reporting form, investigates spill sources, and conducts follow up, including code enforcement as necessary.	P/PW	Tracking began in 2014.
Recordkeeping. Ongoing field screening and illicit discharge response.	P/PW	Ongoing

RUNOFF PROGRAM: NEW DEVELOPMENT, REDEVELOPMENT, AND CONSTRUCTION SITES

OVERVIEW

The City is required to develop, implement, and enforce a runoff program to reduce stormwater runoff pollutants to its MS4 from new development, redevelopment and construction site activities. This program applies to private and public development, including roads; it must include the following:

- Runoff ordinance
- Stormwater site plan review
- Construction site inspections
- Private facility inspections
- Notice of Intent (NOI)
- Staff training
- LID code review

Runoff Ordinance

The City must implement an ordinance or other enforceable mechanism that addresses runoff from new development, redevelopment and construction sites.

- The ordinance/mechanism shall apply to all applications submitted on or after January 1, 2018, as well as prior applications which have not started construction by January 1, 2023 per S5.C.4.a in the 2013–2018 Phase II permit (S5.C.6.b in the draft 2019–2024 Phase II permit).
- The ordinance/mechanism should include the minimum requirements, technical thresholds, and definitions in Appendix 1 (or an Ecology-approved equivalent); see S5.C.4.a.i in the 2013–2018 Phase II permit (S5.C.6.b.i in the draft 2019–2024 Phase II permit), local requirements listed under S5.C.4.a.ii in the 2013–2018 Phase II permit

(S5.C.6.b.ii in the draft 2019–2024 Phase II permit), and legal authority to inspect and enforce maintenance standards for private stormwater facilities approved under this section’s provisions per S5.C.4.a.iii in the 2013–2018 Phase II permit (S5.C.6.b.iii in the draft 2019–2024 Phase II permit).

Stormwater Site Plan Review

The City must implement a permitting process to review all stormwater site plans for proposed development activity per S5.C.4.b.i in the 2013–2018 Phase II permit (S5.C.6.c.i in the draft 2019–2024 Phase II permit).

Construction Site Inspections

The City must inspect construction sites, and take enforcement action against those failing to follow approved guidelines per S5.C.4.b.ii–iv and S5.C.4.c.vi in the 2013–2018 Phase II permit (S5.C.6.c.ii–vi and S5.C.7.b.i(c) in the draft 2019–2024 Phase II permit):

- Inspect, prior to clearing and construction, all permitted sites that have a high potential for sediment transport. As an alternative to evaluating each site, the City may choose to inspect all construction sites that meet the minimum thresholds specified in the Phase II permit.
- Inspect all permitted development sites during construction to verify proper installation and maintenance of required erosion and sediment controls.
- Inspect all permitted development sites upon completion of construction and prior to final approval or occupancy to ensure proper installation of permanent stormwater facilities.
- Inspections of all permanent stormwater treatment and flow control BMPs/facilities and catch basins in new residential developments every 6 months until 90 percent of the lots are constructed (or when construction is stopped, and the site is fully stabilized) to identify maintenance needs and enforce compliance with maintenance standards as needed.

Private Facility Inspections

The City is required to conduct annual inspections of all stormwater treatment and flow control BMPs/facilities that discharge to the MS4 and were permitted by the City on or after January 1, 2018, as well as prior applications which have not started construction by January 1, 2023 per S5.C.4.c in the 2013–2018 Phase II permit (S5.C.7.b.i(b) in the draft 2019–2024 Phase II permit). The private facility inspection program should include a procedure to retain inspection and enforcement action records, including reports, maintenance activities, warnings, violation notices, and other records.

Notice of Intent

The program shall make both Construction and Industrial Activities Notices of Intent (NOI) copies available for re/development representatives by August 1, 2013 (S5.C.4.d in the 2013–2018 Phase II permit; S5.C.6.d in the draft 2019–2024 Phase II permit). The City shall continue to enforce local runoff ordinances for sites also covered by Ecology stormwater permits.

Trainings

Ensure that those charged with program implementation are properly trained; provide staff trainings on new/revised regulations, standards, processes and procedures, and document the training topics and staff attending per S5.C.4.e in the 2013–2018 Phase II permit (S5.C.6.e in the draft 2019–2024 Phase II permit).

LID Code and Enforceable Document Review

Review, revise and adopt codes, standards and rules to incorporate and require LID principles and BMPs; revisions should be designed to minimize impervious surface, native vegetation loss, and stormwater runoff. Future code review related to this topic has shifted to S5.C.1 in the draft 2014–2019 Phase II permit and is described in the Comprehensive Stormwater Planning section of this plan.

Watershed-scale Stormwater Planning

The 2013–2018 Phase II permit requirements for watershed-scale stormwater planning only applies to jurisdictions with all or part of their coverage area in a watershed selected under condition S5.C.5.c in the 2013–2018 Phase II permit. The City is not located in a selected watershed, so the watershed-scale requirements listed in the 2013–2018 Phase II permit do not apply. A new section on Comprehensive Stormwater Planning has been added to the draft 2019–2024 Phase II permit; requirements are summarized in the Comprehensive Stormwater Planning section of this plan.

PLANNED ACTIVITIES

Planned runoff program activities for 2019 are listed in Table 8.

Table 8. Planned Runoff Program: New Development, Redevelopment, and Construction Site Activities for 2019.

Item	Department/ Public Involvement	Timeline Notes
Ordinances. Implement and enforce Chapter 15.18 SMC (Surface and Stormwater Management) and Chapter 15.20 SMC (Clearing and Grading).	P/PW and CD	Ongoing
Notices of Intent. Maintain links to the Construction and Industrial NOIs on the City's Storm and Street facilities webpage.	P/PW	Ongoing
Recordkeeping. Keep plan review records and inspection reports in individual project files. Explore documentation of plan review and inspection reports using new asset management software (MaintStar).	P/PW and CD	Ongoing
Stormwater Site Plan Review. Conduct development review, permitting, and inspections during the construction process. Drainage and Temporary Erosion and Sediment Control (TESC) plans are reviewed by a consultant and approved by the Community Development Department.	P/PW and CD	Ongoing
Construction Site Inspections. Contract with consultants to conduct inspections of facilities during construction and at final construction.	P/PW and CD	Ongoing
Private Facility Inspections. Ramp up the private facility inspection program to ensure that all known private stormwater facilities that meet the Phase II permit timelines are identified, inspected, and mapped before the end of 2019.	P/PW	Implement program and complete initial round of inspections in 2019
LID Code and Enforceable Document Review. Complete the LID review process and provide recommendations for enforceable documents including the City's Comprehensive Plan, the Parks, Recreation, and Open Space Plan; Snoqualmie Ridge Development Standards; and Development Standards for Snoqualmie Ridge II.	P/PW and CD	April 2019

PAST ACTIVITIES

Table 9 summarizes the runoff program activities that occurred from 2013 through 2018.

Table 9. Previous Runoff Program: New Development, Redevelopment, and Construction Site Activities.		
Item	Department/ Public Involvement	Timeline Notes
Ordinances. In 2011, the City adopted Ordinances 1081 and 1082 in advance of Phase II permit deadlines; Ordinance 1081 addresses Chapter 15.18 Surface and Stormwater Management, and Ordinance 1082 addresses Chapter 15.20 Clearing and Grading. Both require drainage review; Chapter 15.18 SMC incorporates the Phase II permit Appendix I by reference. SMC 15.18.100 (c) requires developers to grant the City "an easement permitting access for inspection and performance of any required maintenance ..."; such easements are included for new plats. In 2017, the City revised Chapter 15.18 SMC to adopt the 2016 King County Surface Water Design Manual.	P/PW and CD	Ordinances adopted in 2011 and 2017
Surface Water Design Manual Addendum: The City developed a City-specific addendum to the 2009 King County Surface Water Design Manual (KCSWDM) in 2011 and revised it in 2013. The City developed an updated City-specific addendum to the 2016 KCSWDM that became effective on January 2, 2019.	P/PW	Addendum to the 2009 KCSWDM in July 2011; revised in July 2013 Addendum to the 2016 KCSWDM in January 2019
Notices of Intent. The City posted links to the Construction and Industrial NOIs in 2013, on its Storm and Street facilities webpage. Links to these NOIs are retained at all times.	P/PW	Ongoing
Recordkeeping. Records on plan review and inspection reports are, to date, maintained in individual project files.	P/PW and CD	Ongoing
Stormwater Site Plan Review. The City currently conducts development review, permitting, and inspections during the construction process. Drainage and TESC plans are reviewed by a consultant and approved by the Community Development Department.	P/PW and CD	Ongoing
Construction Site Inspections. The City contracts with consultants to conduct inspections of facilities during construction and at final construction.	P/PW and CD	Ongoing
LID Code and Enforceable Document Review. The City went through a detailed code review and revision process in 2017. Revisions to allow LID principles and LID BMPs were integrated into Title 12, Title 13, Title 15, Title 16, and Title 17 of the Snoqualmie Municipal Code. Ordinance 1198 was adopted on December 11, 2017. Enforceable documents (City's Comprehensive Plan, the Parks, Recreation, and Open Space Plan; Snoqualmie Ridge Development Standards; and Development Standards for Snoqualmie Ridge II) were also reviewed in 2017–2018 and proposed revisions were developed; however, the minor recommendations provided will not be integrated into those documents until the next update cycle.	P/PW and CD	Adopted December 11, 2017; Effective December 28, 2017

MUNICIPAL OPERATIONS AND MAINTENANCE

OVERVIEW

The City must develop and implement an operations and maintenance (O&M) program for public facilities that includes a training component, with the ultimate goal of preventing or reducing pollutant runoff from municipal operations. The program shall be fully implemented by December 31, 2017. This section primarily affects the Parks and Public Works Department (including Facilities); see S5.C.5 of the 2013–2018 Phase II permit (S5.C.7 in the draft 2019–2024 Phase II permit).

The 2013–2018 Phase II permit (S5.C.5) and the draft 2019–2024 Phase II permit (S5.C.7) requires City O&M to include:

- **Maintenance Standards.** Implement maintenance standards as protective as those in the Stormwater Management Manual for Western Washington, Chapter 4, Volume V; standards should meet the O&M timelines summarized on the following page, and be updated or created as necessary to meet the Phase II permit requirements, per S5.C.5.a of the 2013–2018 Phase II permit (S5.C.7.a in the draft 2019–2024 Phase II permit).
- **Annual Inspections.** Annually inspect all City-owned or operated stormwater treatment and flow control BMPs/facilities, and take appropriate maintenance actions per adopted maintenance standards (previous bullet and O&M timelines summarized on the following page). Options to annual inspections are listed in the 2013–2018 Phase II permit under S5.C.5.b (S5.C.7.b.i.(b) in the draft 2019–2024 Phase II permit).
- **Spot Checks.** Spot check potentially damaged stormwater treatment and flow control facilities after a major storm event (24-hour storm event within a 10-year-plus interval). If spot checks indicate widespread damage/maintenance needs, inspect all such facilities and conduct repairs per the O&M timelines summarized on the following page and per S5.C.5.c of the 2013–2018 Phase II permit (S5.C.7.c.ii in the draft 2019–2024 Phase II permit).

Ongoing Municipal O&M activities include:

- Annual inspections of stormwater treatment and flow control facilities
- Spot checks
- Catch basin inspections and cleaning
- Updating SOPs

- **Catch Basins.** Annually inspect and, if needed clean, all catch basins and inlets owned and operated by the City once by February 2, 2018, and every 2 years thereafter. The Phase II permit provides some alternatives to this requirement; see S5.C.5.d of the 2013–2018 Phase II permit (S5.C.7.c.iii(a) in the draft 2019–2024 Phase II permit).

Note: Required inspection compliance for S5.C.5.b, c, and d of the 2013–2018 Phase II permit (S5.C.7.b and c in the draft 2019–2024 Phase II permit) is determined by the presence of an inspection program designed to inspect all sites, achieving 95%+ of inspections per S5.C.5.e of the 2013–2018 Phase II permit (S5.C.7.d in the draft 2019–2024 Phase II permit).

- **Practices, Policies, and Procedures.** Implement practices, policies and procedures to reduce runoff pollutants from all lands owned or maintained by the City, including streets, parking lots, roads or highways, buildings, parks, open space, road rights-of-way, maintenance yards, and stormwater treatment and flow control BMPs/facilities; for the full list of activities that must be addressed, see S5.C.5.f of the 2013–2018 Phase II permit (written documentation is specified in S5.C.7.e in the draft 2019–2024 Phase II permit).
- **Staff Training.** Hold an ongoing staff training program addressing water quality, O&M standards, inspection procedures, selecting appropriate BMPs, job performance to minimize water quality impacts, and procedures to report water quality concerns. Document and maintain records of training provided and the staff trained, per S5.C.5.g of the 2013–2018 Phase II permit (S5.C.7.f in the draft 2019–2024 Phase II permit).
- **Stormwater Pollution Prevention Plan (SWPPP).** Implement a Phase II permit-compliant SWPPP for all heavy equipment maintenance/storage, and material storage, yards and facilities, owned or operated by the City, including structural BMPs per S5.C.5.h of the 2013–2018 Phase II permit (S5.C.7.g in the draft 2019–2024 Phase II permit). The draft 2019–2024 Phase II permit requires annual inspections of the facility.

O&M Timelines

See S5. C5.a.ii of the 2013-2018 Phase II permit (S5.C.7.a.ii in the draft 2019-2024 Phase II permit)

When an inspection identifies an exceedance of the maintenance standard, maintenance shall be performed within:

- 6 months for catch basins.
- 1 year for typical maintenance of facilities (except catch basins).
- 2 years for maintenance that requires capital construction of less than \$25,000.

These timelines apply except for circumstances beyond City control such as property access denial, permit delays or reallocations of staff for unexpected emergency work.

PLANNED ACTIVITIES

The City plans to implement the activities listed in Table 10 in 2019.

Table 10. Planned Municipal Operations and Maintenance Activities for 2019.

Item	Department/ Public Involvement	Timeline Notes
O&M. The City has had a longstanding program to maintain public Stormwater facilities. The City is planning on updating its Stormwater System Operations and Maintenance Manual in 2019.	P/PW	Ongoing; City O&M manual updated by June 2019
Inspections. City-owned stormwater facilities are inspected annually. The City will assess whether it is feasible to reduce required annual inspection frequency where possible.	P/PW	Ongoing
Spot Checks. Spot checks of potentially damaged permanent treatment and flow control facilities are conducted after major storms. Staff check all of the City's stormwater ponds and structures annually.	P/PW	Ongoing
Catch Basins. The City stormwater maintenance program includes catch basin inspections and maintenance with documentation in written reports. The City will explore documentation of maintenance activities using new asset management software (MaintStar).	P/PW	Ongoing
SOPs. The City is planning on preparing an updated and consolidated set of SOPs in 2019.	P/PW	Ongoing
Staff Training. Identify and attend relevant O&M trainings.	P/PW	Ongoing
Stormwater Pollution Prevention Plan (SWPPP). The Public Works Operations Facility (City Shop) SWPPP should be reviewed annually and updated as needed. The draft 2019–2024 Phase II permit requires a minimum of one annual inspection of the facility that should be documented in an inspection report or checklist.	P/PW	Ongoing

PAST ACTIVITIES

Table 11 summarizes the municipal O&M activities that occurred from 2013 through 2018.

Table 11. Previous Municipal Operations and Maintenance Activities.		
Item	Department/ Public Involvement	Timeline Notes
O&M. The City has had a longstanding program to maintain public stormwater facilities. The City developed a Stormwater System Operations and Maintenance Manual that was adopted in 2015.	P/PW	Ongoing; City O&M manual adopted in 2015
Inspections. City-owned stormwater facilities are inspected annually.	P/PW	Ongoing
Spot Checks. Spot checks of potentially damaged permanent treatment and flow control facilities are conducted after major storms. Staff check all of the City's stormwater ponds and structures annually.	P/PW	Ongoing
Catch Basins. The City stormwater maintenance program includes catch basin inspections and maintenance with documentation in written reports. The City developed a catch basin inspection form in 2018.	P/PW	Ongoing
SOPs. In 2018, the City adopted the City of Sammamish's City Facility Maintenance Manual which includes many of the SOPs required by the 2013–2018 Phase II permit. SOPs for land disturbing construction projects are addressed through a Public Works Permit, which addresses temporary erosion and sediment control (TESC), and pollution prevention.	P/PW	Ongoing
Staff Training. City staff attended a LID O&M and General O&M training in January 2015. Training topics and a list of participating staff by department are included in Appendix A.	P/PW	Training conducted in January 2015
Stormwater Pollution Prevention Plan (SWPPP). A SWPPP was developed for the Public Works Operations Facility (City Shop) in 2017 and was updated in 2018.	P/PW	SWPPP prepared in 2017, updated in 2018

SOURCE CONTROL PROGRAM FOR EXISTING DEVELOPMENT

OVERVIEW

This is a new permit section that was not included in the 2013–2018 Phase II permit. Section S5.C.8 in the draft 2019–2024 Phase II permit describes requirements for establishing a source control program to prevent and reduce pollutants in runoff from existing development. The program will include the following phases:

- **Source Control Ordinance:** The City will develop and adopt an ordinance requiring the application of source control BMPs for pollutant generating sources (no later than August 1, 2022).
- **Source Control Inventory:** The City will develop an inventory of all publicly and privately-owned commercial and industrial properties with the potential to generate pollutants (no later than August 1, 2022).
- **Source Control Inspection Program:** In addition to providing education materials related to pollution generating activities to businesses, the City will inspect 20 percent of all businesses on an annual basis to ensure compliance with source control requirements (no later than January 1, 2023).
- **Source Control Enforcement:** The City will development an enforcement policy that requires businesses to comply with stormwater requirements (no later than January 1, 2023).
- **Source Control Training:** The City will provide training for staff responsible for implementing the source control program.

PLANNED ACTIVITIES

None to report.

PAST ACTIVITIES

None to report.

TMDL REQUIREMENTS

OVERVIEW

Additional requirements apply if there is an applicable, approved Total Maximum Daily Load (TMDL) for stormwater discharges from MS4s owned or operated by the City listed in Phase II Permit Appendix 2; see Section S7 in the 2013–2018 Phase II permit and the draft 2019–2024 Phase II permit.

- The City is not listed for TMDLs listed in Appendix 2 under the 2013–2018 Phase II permit or the draft 2019–2024 Phase II permit.
- If the City has actions associated with TMDLs under future Phase II permit terms, it should incorporate requirements as pertinent at that time.

PLANNED ACTIVITIES

None to report.

PAST ACTIVITIES

None to report.

MONITORING AND ASSESSMENT

OVERVIEW

Section 8 of the 2013–2018 Phase II permit requires all permittees to “provide, in each annual report, a description of any stormwater monitoring or stormwater-related studies” conducted by the City, on behalf of the City, or reported to the City. The annual report should briefly provide a description of the type of information gathered or received. This summary description is not currently required by the draft 2019–2024 Phase II permit.

Permittees with TMDLs have other monitoring requirements; these do not apply to the City.

Since the City is a new permittee, they were not required to pay into the collective fund to implement the Regional Stormwater Monitoring Program (RSMP) for the 2013–2018 Phase II permit; however, they will be required to pay into the collective fund to implement the Regional Stormwater Action Monitoring (SAM) program starting on December 1, 2019. The SAM program includes the following areas:

- Regional Status and Trends Monitoring (S8.A)
- Stormwater Management Program Effectiveness and Source Identification Studies (S8.B)

PLANNED ACTIVITIES

Starting in December 2019, the City will be paying into the collective fund to implement the SAM program.

PAST ACTIVITIES

None to report.

Starting in December 2019, the City will be paying the following amounts annually to support regional monitoring studies:

- Status and Trends = \$2,185
- Effectiveness and Source Identification Studies = \$3,993

REPORTING REQUIREMENTS

OVERVIEW

Section 9 of the 2013–2018 Phase II permit and the draft 2014–2024 Phase II permit describes reporting and recordkeeping requirements. The Annual Report and SWMP Plan are prepared and submitted each year to Ecology.

As part of the implementation of the SWMP, the City gathers, tracks, maintains, and uses information on an ongoing basis to evaluate the SWMP development and implementation.

- The City strives to submit an annual report on the Phase II permit no later than March 31 each year for activities the previous year.
- Records related to the Phase II permit and SWMP shall be retained for at least 5 years.
- Records related to the Phase II permit and SWMP shall be reasonably available to the public.
- Administration items, such as annexations, must be included in the Annual Report.

Ongoing Reporting activities include:

- Submitting Annual Report and SWMP Plan to Ecology

The requirements for public involvement and participation have not changed in the draft 2019–2024 Phase II permit.

PLANNED ACTIVITIES

Table 12 summarizes planned reporting activities for 2019.

Table 12. Planned Reporting Activities for 2019.		
Item	Department/ Public Involvement	Timeline Notes
Submit Annual Report and SWMP Plan to Ecology.	P/PW	March 31, 2019
Retain all records related to the Phase II permit and the SWMP for at least 5 years.	P/PW	Ongoing

PAST ACTIVITIES

Table 13 summarizes reporting activities conducted from 2015 through 2018.

Table 13. Previous Reporting Activities.		
Item	Department/ Public Involvement	Timeline Notes
Submitted Annual Report and SWMP Plan to Ecology.	P/PW	March 31, 2015 March 31, 2016 March 31, 2017 March 31, 2018
Retain all records related to the Phase II permit and the SWMP for at least 5 years.	P/PW	Ongoing

APPENDIX A

Supplemental Information

Table A-1 lists the staff trainings conducted in 2015 and 2018, including the date held, the topics covered, and the number of total attendees broken out by department.

Table A-1. Staff Training Summary.		
Date	Topics	Attendees by Department
January 21, 2015	<ul style="list-style-type: none"> • Preventing illicit discharges • Illicit discharge indicators • Field screening and source tracing methodologies • Data management • Terminating illicit discharges • Field exercise 	<ul style="list-style-type: none"> • Parks and Public Works: 25 • Police: 5 • Building: 3 • Fire: 7 • Total: 40
January 23, 2015	<ul style="list-style-type: none"> • LID O&M overview • BMP specifics • Administrative tools • Field exercise 	<ul style="list-style-type: none"> • Parks and Public Works: 25 • Total: 25
March 19, 2018	<ul style="list-style-type: none"> • Preventing illicit discharges • Illicit discharge indicators • Field screening and source tracing methodologies • Data management • Terminating illicit discharges • Field exercise 	<ul style="list-style-type: none"> • Parks and Public Works: 21 • Total: 21
December 6, 2018	<ul style="list-style-type: none"> • Preventing illicit discharges • Illicit discharge indicators • Field screening and source tracing methodologies • Terminating illicit discharges • Review City O&M manual • Review Stormwater Pollution Prevention Plan (SWPPP) for the City Shop 	<ul style="list-style-type: none"> • Parks and Public Works: 17 • Total: 17

This appendix also includes an example of the form that is used for recording stormwater hotline calls (Attachment A-1), the illicit discharge inspection form that was developed in 2018 (Attachment A-2), and the catch basin inspection form that was developed in 2018 (Attachment A-3).

ATTACHMENT A-1

Stormwater Hotline Report Form



City of Snoqualmie

Stormwater Hotline Report Form

Call Information

Date: _____ Caller Name: _____
Location of Incident: _____ Phone Number: _____

Type of Incident

Spill Illicit Connection Other Illicit Discharge

Physical Indicators

Color: _____ Surface scum Debris
 Odor: _____ Outfall damage Stains or deposits
 Other: _____

Details

Description of Spill/ Illicit Discharge:

Follow-up Action(s):

(Eg: Discharge containment and investigation; compliance strategy implementation)

City Employee Signatures

By signing this form, you attest that the above information is accurate and complete

Street/Storm Supervisor Signature

Date

Operations Manager Signature

Date

ATTACHMENT A-2

Illicit Connection & Illicit Discharge Inspection Form



City of Snoqualmie – Illicit Connection & Illicit Detection Inspection Form

Section 1: Background Data

Drainage basin name:	Catch basin, ditch, or outfall ID:	
Date:	Time (Military):	
Ambient air temperature:	Inspector(s):	
Amount of precipitation in the past 48 hours (inches):	Photos taken (Y/N):	If yes, photo numbers:

Section 2: Selection of a Field Screening Methodology

System Type	Field Screening Methodology (circle one)				
Piped System	Business Inspections	Catch Basin / Manhole Inspections	Outfall Inspections	Stormwater BMP Inspections	Video Inspections
				Ditch Inspections	

Section 3: Visual and Olfactory Observations

Indicator	Yes	No	Description	Comments
Color	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Tan to brown <input type="checkbox"/> Brown to reddish brown <input type="checkbox"/> Brown to black <input type="checkbox"/> Black <input type="checkbox"/> Gray to milky white <input type="checkbox"/> Orange-red <input type="checkbox"/> Dark red or purple <input type="checkbox"/> Blue green/brown green <input type="checkbox"/> Yellow to bright green <input type="checkbox"/> Other: _____	
Odor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Musty <input type="checkbox"/> Rotten egg, hydrogen sulfide, natural gas <input type="checkbox"/> Rotten/spoiled <input type="checkbox"/> Sewage <input type="checkbox"/> Chlorine <input type="checkbox"/> Sharp, acrid, or pungent <input type="checkbox"/> Soapy/perfume <input type="checkbox"/> Pungent sweet/musty <input type="checkbox"/> Rotten eggs, kerosene, or gasoline <input type="checkbox"/> Beer, wine, alcohol, or yeast <input type="checkbox"/> Rotten egg or chlorine <input type="checkbox"/> Other: _____	
Visual Indicators	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Excessive vegetation <input type="checkbox"/> Dead vegetation <input type="checkbox"/> Deposits and staining <input type="checkbox"/> Fish kills <input type="checkbox"/> Sewage fungus (white or grayish growth) <input type="checkbox"/> Dried white mat-like residue <input type="checkbox"/> Green or brown algae growth <input type="checkbox"/> Algae blooms <input type="checkbox"/> Bubbles or suds with a rainbow sheen <input type="checkbox"/> Fats, grease, and oils <input type="checkbox"/> Petroleum sheen <input type="checkbox"/> Other: _____	

Do visual and olfactory observations suggest an illicit discharge is present? Yes No



City of Snoqualmie – Illicit Connection & Illicit Detection Inspection Form

Section 4: Flow

Flow Present?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Flow Description	<input type="checkbox"/> Trickle	<input type="checkbox"/> Moderate	<input type="checkbox"/> Substantial

Section 5: Primary Screening Indicator Sampling (if dry weather flow is observed)

Primary Screening Indicator	Test Result	Trigger for Further Investigation	Investigate Further for Illicit Discharge?	Field Equipment Used or Laboratory Analysis
pH		< 5 or > 9	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Field test strips <input type="checkbox"/> Field meter
Turbidity		> 50 NTU or visible/cloudy/opaque	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Field meter <input type="checkbox"/> Visual observation
Ammonia		> 1 mg/L	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Field test strips <input type="checkbox"/> Field test kit <input type="checkbox"/> Ion probe (multimeter) <input type="checkbox"/> Laboratory analysis
Temperature		Above ambient air temperature	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Field meter

Do primary field screening indicator results suggest an illicit discharge is present? Yes No

Section 6: Follow-up Indicator Sampling (if triggered by primary screening indicator results)

Follow-up Indicator	Test Result	Trigger for Further Investigation	Investigate Further for Illicit Discharge?	Field Equipment Used or Laboratory Analysis
Chlorine		> 0.3 mg/L	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Field test strips <input type="checkbox"/> Field test kit <input type="checkbox"/> Digital colorimeter
Detergents/surfactants		> 0.25 mg/L	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Field test kit <input type="checkbox"/> Digital colorimeter <input type="checkbox"/> Laboratory analysis
Fecal coliform bacteria		> 5,000 CFU/100 mL during wet weather > 500 CFU/100 mL during dry weather	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Laboratory analysis
Hardness		Commercial/industrial only ≤ 10 mg/L as CaCO ₃ or ≥ 1,000 mg/L as CaCO ₃	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Field test strips <input type="checkbox"/> Field test kit <input type="checkbox"/> Laboratory analysis
Nitrate		> 1 mg/L	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Field test strips <input type="checkbox"/> Digital colorimeter <input type="checkbox"/> Ion probe (multimeter)
Potassium		> 5 mg/L Ammonia/Potassium ratio > 1 or <1	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Field meter <input type="checkbox"/> Spectrophotometer

ATTACHMENT A-3

Catch Basin Inspection Form



Catch Basin/Manhole Maintenance Inspection Checklist

Catch Basin/Manhole ID: _____

Date: _____ Inspector(s): _____

Photos taken (Y/N): _____ Photo numbers (if applicable): _____

Maintenance Component	Defect or Problem	Conditions When Maintenance is Needed	Results Expected When Maintenance Is Performed	Satisfactory	Unsatisfactory	Comments
Structure	Sediment	<ul style="list-style-type: none"> Sediment > 60% of the depth from the bottom of the catch basin to the invert of the lowest pipe into or out of the catch basin <u>or</u> Sediment within 6 inches of the invert of the lowest pipe into or out of the catch basin 	<ul style="list-style-type: none"> Sump of catch basin contains no sediment 			
	Trash and debris	<ul style="list-style-type: none"> Trash or debris > $\frac{1}{2}$ cubic foot which is located immediately in front of the catch basin opening <u>or</u> Trash or debris blocking capacity of the catch basin by > 10% 	<ul style="list-style-type: none"> No trash or debris blocking or potentially blocking entrance to catch basin 			
		<ul style="list-style-type: none"> Trash or debris in the catch basin that > $\frac{1}{3}$ the depth from the bottom of basin to invert the lowest pipe into or out of the basin 	<ul style="list-style-type: none"> No trash or debris in the catch basin 			
		<ul style="list-style-type: none"> Dead animals or vegetation that could generate odors (e.g., methane) 	<ul style="list-style-type: none"> No dead animals or vegetation present within the catch basin 			
		<ul style="list-style-type: none"> Deposits of garbage > 1 cubic foot in volume 	<ul style="list-style-type: none"> No condition present which would attract or support the breeding of insects or rodents 			

Catch Basin/Manhole Maintenance Inspection Checklist



Maintenance Component	Defect or Problem	Conditions When Maintenance is Needed	Results Expected When Maintenance Is Performed	Satisfactory	Unsatisfactory	Comments
Structure (cont.)	Damage to frame and/or top slab	<ul style="list-style-type: none"> Corner of frame extends $> \frac{3}{4}$-inch past curb face into the street (If applicable) 	<ul style="list-style-type: none"> Frame is even with curb 			
		<ul style="list-style-type: none"> Top slab has holes > 2 square inches or cracks $> \frac{1}{4}$-inch 	<ul style="list-style-type: none"> Top slab is free of holes and cracks 			
		<ul style="list-style-type: none"> Frame not sitting flush on top slab (separation of $> \frac{3}{4}$-inch of the frame from the top slab) 	<ul style="list-style-type: none"> Frame is sitting flush on top slab 			
	Cracks in walls or bottom	<ul style="list-style-type: none"> Cracks $> \frac{1}{2}$ inch and longer than 3 feet, Any evidence of soil particles entering catch basin through cracks, <u>or</u> Maintenance person judges that catch basin is unsound 	<ul style="list-style-type: none"> Catch basin is sealed and is structurally sound 			
		<ul style="list-style-type: none"> Cracks $> \frac{1}{2}$ inch and longer than 1 foot at the joint of any inlet/outlet pipe <u>or</u> Any evidence of soil particles entering catch basin through cracks 	<ul style="list-style-type: none"> No cracks $> \frac{1}{4}$-inch wide at the joint of inlet/outlet pipe 			
	Settlement/misalignment	<ul style="list-style-type: none"> Catch basin settled > 1 inch or rotated > 2 inches out of alignment 	<ul style="list-style-type: none"> Basin replaced or repaired to design standards 			



Catch Basin/Manhole Maintenance Inspection Checklist

Maintenance Component	Defect or Problem	Conditions When Maintenance is Needed	Results Expected When Maintenance Is Performed	Satisfactory	Unsatisfactory	Comments
Structure (cont.)	Damaged pipe joints	<ul style="list-style-type: none"> Cracks $> \frac{1}{2}$-inch at the joint of the inlet/outlet pipes <u>or</u> Any evidence of soil entering the catch basin at the joint of the inlet/outlet pipes 	<ul style="list-style-type: none"> No cracks more than $\frac{1}{4}$-inch wide at the joint of inlet/outlet pipes 			
	Illicit discharge indicators observed	<ul style="list-style-type: none"> Any evidence of contaminants or pollution such as color, odor, visual indicators, and/or flow that is not a result of groundwater 	<ul style="list-style-type: none"> Materials removed and disposed of according to applicable regulations No contaminants present 			
Inlet/Outlet Pipe	Sediment accumulation	<ul style="list-style-type: none"> Sediment filling $\geq 20\%$ of the pipe 	<ul style="list-style-type: none"> Inlet/outlet pipes clear of sediment 			
	Trash and debris	<ul style="list-style-type: none"> Trash and debris accumulated in inlet/outlet pipes (includes floatables and non-floatables) 	<ul style="list-style-type: none"> No trash or debris in pipes 			
	Damaged	<ul style="list-style-type: none"> Cracks $> \frac{1}{2}$-inch at the joint of the inlet/outlet pipes <u>or</u> Any evidence of soil entering at the joints of the inlet/outlet pipes 	<ul style="list-style-type: none"> No cracks $> \frac{1}{4}$-inch wide at the joint of the inlet/outlet pipe 			

Catch Basin/Manhole Maintenance Inspection Checklist



Maintenance Component	Defect or Problem	Conditions When Maintenance is Needed	Results Expected When Maintenance Is Performed	Satisfactory	Unsatisfactory	Comments
Catch Basin Metal Grate	Unsafe grate opening	<ul style="list-style-type: none"> Grate with opening > $\frac{3}{8}$-inch 	<ul style="list-style-type: none"> Grate opening meets design standards 			
	Trash and debris	<ul style="list-style-type: none"> Trash and debris that is blocking > 20% of grate surface 	<ul style="list-style-type: none"> Grate free of trash and debris 			
	Damaged or missing	<ul style="list-style-type: none"> Grate missing or broken member(s) of the grate <p>Any open structure requires urgent maintenance.</p>	<ul style="list-style-type: none"> Grate is in place and meets design standards 			
Manhole Cover/Lid	Cover/lid not in place	<ul style="list-style-type: none"> Cover/lid is missing or only partially in place <p>Any open structure requires urgent maintenance.</p>	<ul style="list-style-type: none"> Cover/lid protects opening to structure 			
	Locking mechanism not working	<ul style="list-style-type: none"> Mechanism cannot be opened by one maintenance person with proper tools, Bolts cannot be seated, <u>or</u> Self-locking cover/lid does not work 	<ul style="list-style-type: none"> Mechanism opens with proper tools 			
	Cover/lid difficult to remove	<ul style="list-style-type: none"> One maintenance person cannot remove cover/lid after applying 80 lbs. of lift 	<ul style="list-style-type: none"> Cover/lid can be removed and reinstalled by one maintenance person 			