

## 6 Stormwater Management Program Evaluation

The City of Bellingham is one of 80 western Washington municipalities that are regulated by the Western Washington Phase II Municipal Stormwater Permit, issued by Ecology under authority of EPA's NPDES program. The City's original Phase II Permit was issued in 2007 by Ecology, as was the case for the other regulated jurisdictions in western Washington. The Phase II Permit is reissued every 5 years. The City's current Phase II Permit, reissued on August 1, 2019, expires on July 31, 2024.

This chapter provides an overview of the Phase II Permit and evaluates the City's SWMP for compliance.

### 6.1 NPDES Phase II Municipal Stormwater Permit Overview

Like all NPDES permits in western Washington, Bellingham's Phase II Permit is organized into Special Conditions and General Conditions, and with compliance it allows the regulated jurisdiction to discharge stormwater runoff from its MS4 to the waters of the state. As a Phase II Permit condition, each calendar year the City updates and publishes a SWMP that describes the City's programs and documents how it meets the conditions of the Phase II Permit. The City's current SWMP is available on its website:

<https://www.cob.org/services/planning/environmental/pages/stormwater-program.aspx>.

Regulatory details of operating a SWMP are contained in Sections S5, S7, S8, and S9 of the SWMP. Evaluating how the City is complying with these sections, where gaps in compliance may exist, and where opportunities are presented for value-added enhancements is one of the goals of the comprehensive planning process. The SWMP evaluation and gap analysis were specific to these sections of the SWMP.

General Conditions of the Phase II Permit describe what actions a Permittee must take to meet Phase II Permit requirements and the Special Conditions describes how to implement the Phase II Permit conditions. Special Conditions are specific to each Permittee and are summarized in the sections below, whereas General Conditions are more general in nature and are common to all permits in Western Washington. The Special Conditions sections are listed in Table 6-1 according to the current Phase II Permit released in August 2019.

**Table 6-1. Phase II Permit Special Conditions**

Phase II Permit section	SWMP Special Condition
S1	Phase II Permit coverage area and permittees
S2	Authorized discharges
S3	Responsibilities of Permittees
S4	Compliance with standards
S5	Stormwater Management Program
S6	Stormwater management for secondary Permittees (not applicable to Bellingham)
S7	TMDL
S8	Monitoring and assessment
S9	Reporting and record keeping

### 6.1.1 Special Conditions

The Special Conditions sections of the Phase II Permit are specific action items that each regulated Permittee must undertake to allow permissible discharges to the waters of the state. Listed below is a brief description of each section.

#### S1. Permit Coverage Area and Permittees

Special Condition S1 designates the areas in western Washington subject to the conditions of this Permit (the Phase II Municipal permit). It includes areas located west of the eastern boundaries of the following counties: Whatcom, Skagit, Snohomish, King, Pierce, Lewis, and Skamania. This Phase II Permit is applicable to owners or operators of regulated small MS4s.

#### S2. Authorized Discharges

Special Condition S2 authorizes the discharge of stormwater to surface waters and groundwaters of the state from MS4s owned or operated by each Permittee covered under this Permit (the Phase II Municipal permit, in the geographic area covered pursuant to Special Condition S1).

#### S3. Responsibilities of the Permittees

Special Condition S3 formally declares the responsibility of each Permittee for compliance with the terms of this Permit (the Phase II Municipal permit) for the regulated small MS4s that it owns or operates.

#### S4. Compliance with Standards

Special Condition S4 details applicable water quality standards and methods for achieving the standards. In summary, this section:

- Prohibits the discharge of toxicants to waters of the state.



- Provides instructions to Permittees on specific actions they must take when a discharge occurs that is in violation of the Permit (the Phase II Municipal permit).
- Allows Permittees to use practices that reduce the discharge of pollutants to the maximum extent practicable (MEP).
- Allows Permittees to use all known, available, and reasonable methods of prevention, control, and treatment (AKART) to prevent and control pollution of waters of the state of Washington.
- Outlines actions each Permittee can take to remain compliant when prohibited discharges are unintentionally discharged to the waters of the state.

### S5. Stormwater Management Program for Cities, Towns, and Counties

Special Condition S5 states that each Permittee will develop and implement a SWMP that includes a set of actions and activities the Permittee will undertake to meet the objectives of the NPDES program.

### S6. Stormwater Management Program for Secondary Permittees

Special Condition S6 is not applicable to the City of Bellingham because it is not listed as a secondary Permittee.

### S7. Compliance with Total Maximum Daily Load Requirements

Special Condition S7 states that Permittees that have an applicable TMDL approved for stormwater discharges from MS4s must meet all requirements as specified in Appendix 2 of the Phase II Permit for individual TMDLs.

### S8. Monitoring and Assessment

Special Condition S8 describes the requirements for a permitted jurisdiction to conduct water quality monitoring of its MS4 discharge.

### S9. Reporting Requirements

Special Condition S9 standardizes reporting requirements for all regulated jurisdictions.

## 6.2 Stormwater Management Program Gap Analysis

The evaluation and gap analysis of the City's SWMP is focused on Special Conditions S5, S7 (TMDL requirements), S8 (monitoring), and S9 (reporting). Special Conditions S1 through S4 are not part of the evaluation and Special Conditions S6 is for secondary Permittees and therefore does not apply to Bellingham. Special Conditions S5 includes a set of "Special Conditions" for agencies responsible for operating an MS4. The responsible agencies implement the Special Conditions that will programmatically achieve the goals of the Phase II Permit.

Special Condition S5 is subdivided into Parts A, B, and C. Part A is the rules section of the Phase II Permit stating that jurisdictions shall prepare a SWMP. Part B states the objectives and standards that the SWMP must meet. Part C lists the activities required in the SWMP and is

divided into eight subsections. Special Conditions S7, S8, and S9 are also included in the gap analysis.

Table 6-2 lists the Special Conditions of the Phase II Permit included in the evaluation.

**Table 6-2. Phase II Permit Special Conditions and program components analyzed**

Special Conditions number	Special Condition
S5.A	Stormwater Management Program
S5.B	Reduce discharge of pollutants
S5.C.1	Stormwater planning
S5.C.2	Public education and outreach
S5.C.3	Public involvement and participation
S5.C.4	MS4 mapping and documentation
S5.C.5	Illicit discharge detection and elimination (IDDE)
S5.C.6	Controlling runoff from new development, redevelopment, and construction
S5.C.7	Operations and maintenance
S5.C.8	Source control program for existing development
S7	Compliance with TMDL requirements
S8	Monitoring and assessment
S9	Reporting requirements

### 6.2.1 Stormwater Management Program Evaluation

HDR reviewed 73 individual Phase II Permit requirements in Section S5 and 16 additional conditions in Sections S7, S8, and S9. To assess possible program gaps with respect to these requirements, HDR reviewed the City’s existing SWMP, O&M manuals, and the City’s website and called on City staff when additional details were needed. The 2019 Annual Report, submitted in 2020 documenting the progress by the City in 2019, was also reviewed. The information gathered was compared to the requirements of the Phase II Permit to identify SWMP gaps. The following sections summarize the findings of the gap analysis for each subsection of Section S5. New Phase II Permit requirements are also discussed. Requirements that are in full compliance are noted along with areas that are lacking (creating a gap). The evaluation also looked at opportunities for added enhancements to those activities that are in compliance but would bring value to the City in meeting its overall program goals and objectives.

Overall, the City is doing quite well in meeting its obligation toward Phase II Permit compliance. In fact, it is already making strides at completing tasks that are new in the current Phase II Permit. For example, the City has accomplished 80 out of the 89 individual tasks evaluated from

the 2015 Phase II Permit, or 90 percent, representing an exceptional track record of performance. Of the nine tasks noted as not accomplished, some are enhancement recommendations only. Also, the City has begun on the new permit conditions found in the 2019 Phase II Permit by initiating or completing four individual tasks, with some progress already made on many of the outstanding items not to be completed for some time.

### S5.A Stormwater Management Program

Under the Western Washington Phase II Municipal Stormwater Permit, cities, towns, and counties are required to develop and implement a SWMP. The SWMP functions as the written record of how they are complying with the Phase II Permit and includes all reporting requirements outlined in the Phase II Permit. The City provides its annual SWMP on its website.

During analysis it was found that the City could improve SWMP compliance in the following area:

- **S.5.A.3(a)**: track the estimated cost of development and implementation of each component of the SWMP

New requirements under the 2019 Phase II Permit for the City are:

- Disaggregate the respective records from the TRAKiT™ software program, the City's workflow management software, into number of inspections, follow-up actions as a result of inspections, and official enforcement actions
- Develop coordination mechanics among departments within each jurisdiction to eliminate barriers to compliance

### S5.B Discharge Reduction

The City's SWMP reduces the discharge of pollutants to the MEP, and meets state AKART requirements; no gaps were identified.

### S5C.I Stormwater Planning

A Stormwater Planning Program is a new requirement under the 2019 Phase II Permit. The intention of this Phase II Permit program is to inform and assist in the development of policies and strategies as water quality management tools to protect receiving waters.

New requirements under the 2019 Phase II Permit for the City are:

- Create an interdisciplinary team to inform and assist in the development, progress, and influence of the Stormwater Planning Program.
- Respond to Stormwater Planning Annual Report questions to describe how anticipated stormwater impacts on water quality were addressed, if at all, during the 2013–2019 Phase II Permit term.
- Submit a report to describe how water quality is being addressed, if at all, during this Phase II Permit term in updates to the citywide Comprehensive Plan (or equivalent) and in other locally initiated or state-mandated, long-range land use plans that are used to accommodate growth or transportation.

- Annually, assess and document any newly identified administrative or regulatory barriers to implementation of LID principles or LID BMPs, and the measures developed to address the barriers. If applicable, the report shall describe mechanisms adopted to encourage or require implementation of LID principles or LID BMPs.
- Review, revise, and make effective codes, rules, standards, or other enforceable documents to incorporate and require LID principles and LID BMPs.
- Document and assess existing information related to local receiving waters and contributing area conditions to identify receiving waters that will benefit from stormwater management planning. Submit a watershed inventory and include a brief description of the relative conditions of the receiving waters and contributing areas.
- Prioritize and rank identified water basins that would benefit from implementation of stormwater facility retrofits and management actions to reduce pollutant loading and address hydrologic impacts from existing development.
- Develop a Stormwater Management Action Plan (SMAP) for at least one high-priority area.

## S5C.2 Public Education and Outreach

The City's Public Education and Outreach Program aims to increase awareness of stormwater pollution issues and to provide tools, assistance, and incentives to reduce or eliminate behaviors and practices that cause or contribute to adverse stormwater impacts.

The following initiatives are included in the City's Public Education and Outreach Program, with further detail being provided in the SWMP available online:

- Habitat News newsletter
- Bellingham Water School program
- We Scoop pet waste campaign
- Wash Right outdoor washing campaign
- Lake Whatcom Management Program
- Don't Drip and Drive vehicle leak campaign
- Local source control
- Neighborhood meetings
- Habitat restoration outreach
- Natural yard care and water use efficiency outreach
- Online outreach
- Bellingham Television (BTV) aired programs

The City's Public Education and Outreach Program fully meets the requirements of the 2015 Phase II Permit. New requirements under the 2019 Phase II Permit for the City are:



- Conduct a new evaluation of the effectiveness of the ongoing behavior change program. This may not be required if the City chooses to develop a strategy and schedule for a new target audience and BMP behavior change.
- Develop a strategy and schedule to have at least one of the following results:
  - To more effectively implement the existing behavior change program
  - To expand the existing program to a new target audience or BMPs
  - To create a new target audience and BMP behavior change campaign
- Evaluate and report on the changes in understanding and adoption of targeted behaviors resulting from the implementation of the strategy and any planned or recommended changes to the program.

### S5C.3 Public Involvement and Participation

The City offers public involvement and participation opportunities by holding open weekly City Council meetings, holding open public houses to discuss code amendments for LID, and annually reviewing its SWMP, which is provided to the public online. These measures fully meet the requirements of the Phase II Permit; no gaps were identified.

### S5.C.4 MS4 Mapping and Documentation

MS4 mapping and documentation is a new requirement under the 2019 Phase II Permit. The City's online map viewer, CityIQ, allows GIS data to be downloaded from the Internet that meet the requirements of the new Phase II Permit; no gaps were identified.

### S5.C.5 Illicit Discharge Detection and Elimination

An illicit discharge detention and elimination (IDDE) program is a Special Condition in the Phase II Permit that requires agencies operating an MS4 to implement a program to address the issue of illicit stormwater discharges. The City's IDDE programs meet all requirements of the 2015 Phase II Permit with improved SWMP compliance possible in the following area:

- **S.5.C.5.e:** Develop formal SOPs of characterizing, tracking, and eliminating illicit discharges, spills, and connections.

New requirements under the 2019 Phase II Permit for the City are:

- Screen or track 12 percent of the MS4 in the field annually. Review showed that the City is inspecting approximately 13.5 percent of its MS4 program per year, but this is not formally tracked. The Cityworks™ software used to manage assets may work as a method for isolating inspection records to create formal records of this inspection process.
- Submit data for all illicit discharges investigated during the previous calendar year into the annual report and to Ecology's WQwebIDDE database. The City is encouraged to develop SOPs describing the timing and protocols for uploading IDDE data, which the City is already tracking in a database.

### S5.C.6 Controlling Runoff from New Development, Redevelopment, and Construction

The City's permitting process requires plan review and site inspections for development and redevelopment projects. The City requires that Stormwater Site Plans be designed in accordance with current editions of Ecology's *Stormwater Management Manual for Western Washington* (SWMMWW), the City of Bellingham "Development Guidelines and Improvement Standards," and the BMC. The program meets all requirements of the 2015 Phase II Permit with improved SWMP compliance possible in the following area:

- **S.5.C.6.e:** Develop formal training database to track and report on completion of required training, follow-up training, certifications, etc.

A new requirement states that:

- The program shall make links to Construction and Industrial Stormwater General Permit Notice of Intent (NOI) forms available.

### S5.C.7 Operations and Maintenance

Permit conditions stipulate that City maintenance standards must be equal to those in Ecology's SWMMWW. It also requires that standards be developed for practices that are not covered by the SWMMWW. Rigorous inspection schedules and maintenance standards are required, and Stormwater Pollution Prevention Plans (SWPPPs) are required for certain categories of municipal sites.

Evaluating the City's maintenance and inspection manuals yielded a determination the City meets almost all Phase II Permit requirements. Recommendations and improvements noted:

- **S.5.C.7.b(iii):** "The program shall include a procedure for keeping records of inspections and enforcement actions." This gap can be corrected by including screen shots of TRAKiT™ records in the SWMP annual report to Ecology along with a program description and requirements in the formal procedure for record keeping.
- **S5.C.7.c:** No gap was identified. The City plans and tracks all treatment and flow control facility inspection and maintenance activities in the TRAKiT™ workflow management system; however, this reference can be strengthened by providing a specific location in TRAKiT™ where inspection records are kept.
- **S5.C.7.d:** The City plans and tracks all catch basins and stormwater facility inspection and maintenance activities in the Cityworks™ workflow management system; however, there are not enough details in the SWMP (pages 23 and 30) to determine requirement compliance. The reference may be strengthened by providing a specific location in TRAKiT™ where inspection records are kept. Recommend that the City provide the program description and requirements in the SWMP. Automated reporting may be useful to verify compliance.

A new requirement is as follows:

- Meet maintenance deadlines once an inspection identifies an exceedance.





### S5.C.8 Source Control Program for Existing Development

A source control program for existing development is a new requirement under the 2019 Phase II Permit, for which the city's current activities includes some of the requirements. Additional documentation will be needed in accordance with the current Phase II Permit details.

New requirements are as follows:

- Implement a program to prevent and reduce pollutants in runoff from areas that discharge to MS4s to the maximum extent practicable (MEP)
- Adopt an ordinance, or other enforceable documents, requiring the application of source control BMPs for pollutant-generating sources associated with existing land uses and activities to the maximum extent practicable (MEP)
- Establish an inventory that identifies publicly and privately owned institutional, commercial, and industrial properties that have the potential to generate pollutants to the MS4
- Implement an inspection program for the identified properties
- Implement a progressive enforcement policy that requires sites to comply with stormwater requirements within a reasonable period
- Train staff who are responsible for implementing the source control program

### S7 Compliance with Total Maximum Daily Load Requirements

The 2019–2024 Phase II Permit has new TMDL requirements for compliance with respect to the Lake Whatcom TMDL.

New requirements are as follows:

- Develop a repeatable public outreach survey to measure beliefs, behaviors, and attitudes over time toward Lake Whatcom water quality
- Annually report on progress of the survey
- Submit results of the survey with the annual report
- Provide Ecology the informational packet distributed to watershed residents, and track how many new property owners received copies
- Provide Ecology with the Lake Whatcom Cooperative Management Program Five-Year Work Plan, Program Area 9 update
- Update and prioritize a list of new treatment and flow control capital improvement projects to be included in the annual report
- Develop and provide a list of retrofit opportunities to Ecology
- With each annual report, evaluate and track phosphorus reductions
- Submit a watershed-specific appendix to the City's operation plan for managing public areas such as parks, trails, rights-of-way (ROWs), and open spaces by March 31, 2024

- Submit a Quality Assurance Project Plan (QAPP) jointly with Lake Whatcom Cooperative Management Program to Ecology for approval
- Track and report the status of the timelines in the QAPPs approved by Ecology in the annual report
- Provide an evaluation of the effectiveness of built stormwater treatment and flow control facilities
- Submit Lake Whatcom implementation tasks for 2024–2029
- Submit a new loading capacity based on new models

## S8 Monitoring and Assessment

The City joined the Stormwater Action Monitoring (SAM) in 2013 and contributes to the fund, which conducts water quality monitoring of stormwater discharging from the MS4. This meets the Phase II Permit requirements; no gaps were identified.

## S9 Reporting Requirements

The Phase II Permit standardizes reporting requirements for all regulated jurisdictions. The City is fully meeting these requirements. Program strengthening improvements noted:

- **S.9.B:** Post all previous SWMPs in a centralized location on the City’s SWMP website page: <https://www.cob.org/services/planning/environmental/pages/stormwater-program.aspx>
- **S9B.C:** Post all previous SWMPs and annual reports online for at least 5 years

## 6.2.2 NPDES Permit Compliance Strategies

Full details of the NPDES gap analysis are provided in Appendix B (B.1 Gap Analysis Table). The result of the SWMP review was that there are 9 areas identified for completion and/or enhancement from the 2015 Phase II Permit, and 38 new requirements to work toward compliance for the 2019 Phase II Permit. Table 6-3 below includes relevant 2015 Phase II Permit gaps, and compliance improvement recommendations for said gaps and/or areas for enhancement. Table 6-4 includes the new requirements in the 2019 version of the Phase II Permit along with completion dates. It also indicates the progress made by the City as reported in the 2019 Annual Report. Completion dates indicated as “immediate” refer to requirements needed upon Phase II Permit issuance.



**Table 6-3. List of existing Phase II Permit gaps and compliance improvements**

Special Conditions number	Gap	Compliance improvement recommendation
S4.F	None. Currently provide a stormwater hotline number posted to the City's website.	Formal documentation in the form of an SOP or similar would demonstrate the City's compliance with the defined actions.
S5.A.3.a	The City does not track all related costs or estimate the costs of the SWMP.	Use newly implemented Cityworks™ to track all related costs and estimated costs related to the SWMP.
S5.C.5.e	The City currently has SOPs in place describing how outfall field screening occurs, but formal documentation is lacking.	Develop SOPs for characterizing, tracking, and eliminating illicit discharges, spills, and connections.
S5.C.6.e	While City Public Works Department staff is trained on implementing BMPs, stormwater facility design, pollution prevention, stormwater code training, SWMMWW training, and Phase II Permit overview, there are no records, other than Certified Erosion and Sediment Control Lead (CESCL) certifications, of training and City staff that has received it.	Create a training database to track and report on completion of required training, follow-up training, certifications, etc.
S5.C.7.b(iii)	The City plans and tracks all inspection and maintenance activities in the Cityworks™ workflow management system; however, formal procedures for record keeping are not in place.	Include screen shots of Cityworks™ records in the SWMP annual report to Ecology along with a program description and requirements in the SWMP. Develop a formal procedure for record keeping.
S5.C.7.c	None. The City plans and tracks all treatment and flow control facility inspection and maintenance activities in the TRAKiT™ workflow management system; however, this reference can be strengthened by providing a specific location in TRAKiT™ where inspection records are kept.	Include screen shots of TRAKiT™ records in the SWMP annual report to Ecology along with a program description and requirements in the SWMP.

Special Conditions number	Gap	Compliance improvement recommendation
S5.C.7.d	The City plans and tracks all catch basins and stormwater facility inspection and maintenance activities in the Cityworks™ workflow management system; however, there are not enough details in the SWMP (pages 23 and 30) to determine requirement compliance. The reference may be strengthened by providing a specific location in TRAKiT™ where inspection records are kept.	Recommend that the City provide the program description and requirements in the SWMP. Automated reporting may be useful to verify compliance.
S9.B	Annual SWMP updates, specifically 2014, are missing.	Suggest posting all previous SWMPs in a centralized location on the current SWMP page ( <a href="https://www.cob.org/services/planning/environmental/Pages/stormwater-program.aspx">https://www.cob.org/services/planning/environmental/Pages/stormwater-program.aspx</a> ).
S9.C	None. Compliance strengthening recommendation.	Recommend that the City provide the SWMP and annual reports online for at least 5 years.

**Table 6-4. List of new 2019 Phase II Permit compliance requirements**

Special Conditions number	Requirement	Compliance recommendation	Compliance date
S5.A.2	Effective 8/1/2019, several Phase II Permit requirements will take effect and the SWMP will need to be updated accordingly.	Conduct a third-party review of the 2019 annual report verifying that the new Phase II Permit conditions are captured.	Annually
S5.A.3.b	The SWMP annual report separates out inspections, enforcement actions, and public education activities, and tracks follow-up actions.	Disaggregate the respective records from the TRAKiT™ software program, begin tracking follow-up actions as a result of inspections, and include this information in the SWMP annual report.	8/1/2019



Special Conditions number	Requirement	Compliance recommendation	Compliance date
S5.A.5.b	Have written descriptions of internal coordination mechanisms among departments within each jurisdiction within the SWMP annual report.	Beginning in 2021 or sooner, include in the annual report to Ecology meeting minutes and decision logs demonstrating cross-departmental coordination. Establish meeting frequency, roles and responsibilities, and a team charter.	3/31/2021
S5.C.1.a	Create an interdisciplinary team to inform and assist the development, progress, and influence of the SWMP.	Beginning in 2021 or sooner, include in the annual report to Ecology meeting minutes and decision logs demonstrating cross-departmental coordination. Establish meeting frequency, roles and responsibilities, and a team charter.	8/1/2020
S5.C.1.b.i.(a)	Respond to Stormwater Planning Annual Report questions describing how anticipated stormwater impacts on water quality are addressed during the 2013–2019 Phase II Permit term.	Include responses to questions in the Phase II Permit.	3/31/2021
S5.C.1.b.i.(b)	Submit a report responding to the questions from above to describe how water quality is being addressed, if at all, during the Phase II Permit term.	Include the findings and recommendations from the citywide Water Quality Prioritization project.	1/1/2023
S5.C.1.c.i	Annually, assess and document newly identified barriers to implementation of LID principles/BMPs and the measures developed to address the barriers.	Include in the annual report a description of how the City’s codes are reviewed for LID requirements.	3/31/2024

Special Conditions number	Requirement	Compliance recommendation	Compliance date
S5.C.1.c.ii	Submit a summary of results of reviewed and revised codes, rules, standards, and other enforceable documents to incorporate and require LID principles and LID BMPs.	Include in the annual report a description of how the City's codes are reviewed for LID requirements.	3/31/2024
S5.C.1.d.i	Conduct a receiving water basin assessment.	Include the findings and recommendations from the citywide Water Quality Prioritization project.	3/31/2022
S5.C.1.d.ii	Conduct a water basin prioritization.	Include the findings and recommendations from the citywide Water Quality Prioritization project.	6/30/2022
S5.C.1.d.iii	Develop a Stormwater Management Action Plan.	Include the findings and recommendations from the citywide Water Quality Prioritization project.	3/31/2023
S5.C.2.a.ii.d	Begin implementation of a new behavioral change study.	Keep data and report on Education and Outreach program survey.	4/1/2021
S5.C.2.a.ii.e	Evaluate and report on the newly adopted behavior change program.	Keep data and report on Education and Outreach program survey.	3/31/2024
S5.C.2.a.ii.f	Use results of the evaluation to continue to direct effective behavior change methods.	Keep data and report on Education and Outreach program survey.	3/31/2024
S5.C.5.d.(i)(a)	Screen or track 12% of the MS4 in the field annually.	Develop SOPs explicitly describing how outfall field screening occurs and include in the annual report a copy of the tracking data.	Immediate
S5.C.5.g	Submit data from illicit discharge investigations into the annual report as specified in Appendix 12 and the WQwebIDDE.	Develop SOPs for timing and protocols for uploading IDDE data to Ecology's WQwebIDDE database.	Immediate



Special Conditions number	Requirement	Compliance recommendation	Compliance date
S5.C.6.d	Provide links to forms relevant to the Construction Stormwater General Permit NOI and, as applicable, a link to the Industrial Stormwater General Permit NOI.	Add an active link to the Construction Stormwater General Permit NOI form to the City's website.	Immediate
S5.C.7.a.ii.	Meet maintenance deadlines once an inspection identifies an exceedance.	Develop or update O&M standards to match the new inspection frequencies in the Phase II Permit.	6/30/2022
S5.C.8.a	Implement a program to prevent and reduce pollutants that runoff to areas that discharge to MS4s.	Prepare a source control program report that describes how the City developed its program and includes SOPs for staff who implement the program.	[See S5.C.8.b]
S5.C.8.b.i	Adopt an ordinance, or other enforceable documents, requiring source control BMPs for pollutant generating sources from existing land uses and activities.	Update City ordinance.	8/1/2022
S5.C.8.b.ii	Inventory publicly and privately owned institutional, commercial, and industrial properties that discharge to the MS4.	Develop a source control program to meet upcoming permit requirements.	8/1/2022
S5.C.8.b.iii	Implement an inspection program for the sites identified in S5.C.8.b.ii.	Develop a source control program to meet upcoming permit requirements.	1/1/2023
S5.C.8.b.iv	Implement an enforcement policy to comply with stormwater requirements.	Develop a source control program to meet upcoming permit requirements.	1/1/2023
S5.C.8.b.v	Train staff responsible for implementing the source control program.	Develop a source control program to meet upcoming permit requirements.	Ongoing
S.7.A.1.a	Develop a survey to measure watershed residents' beliefs, behaviors, and attitudes over time toward Lake Whatcom water quality.	Future requirement to be met.	Immediate

Special Conditions number	Requirement	Compliance recommendation	Compliance date
S.7.A.1.b	With each annual report, report on progress of the Lake Whatcom water quality survey.	Future requirement to be met.	Annually
S.7.A.1.c	Submit results of the Lake Whatcom water quality survey with the annual report.	Future requirement to be met.	3/31/2022
S.7.A.1.d	Provide Ecology the informational packet distributed to watershed residents, and track how many new property owners received copies.	Future requirement to be met.	3/31/2022
S.7.A.1.e	Provide Ecology with the Lake Whatcom Cooperative Management Program Five-Year Work Plan, Program Area 9 update.	Future requirement to be met.	3/31/2020
S7.A.2.a	With each annual report, update and prioritize a list of new treatment and flow control capital improvement projects.	Future requirement to be met.	Annually
S7.A.2.b	Provide a list of retrofit opportunities with a timeline for incorporation.	Future requirement to be met.	3/31/2024
S7.A.2.c	With each annual report, evaluate and track phosphorus reductions.	Future requirement to be met.	Annually
S7.A.3	The City must submit a watershed-specific appendix to its operational plan for managing public areas such as parks, trails, ROWs, and open spaces.	Develop a watershed-specific appendix to the City's operational plan for managing public areas such as parks, trails, ROWs, and open spaces.	3/31/2024
S7.A.4.a	Submit QAPP jointly with Lake Whatcom Cooperative Management Program to Ecology for approval.	Develop procedures for tracking and reporting the status of the QAPP.	3/31/2020





Special Conditions number	Requirement	Compliance recommendation	Compliance date
S7.A.4.b	Track and report the status of the timelines in the QAPPs approved by Ecology in the annual report.	Develop procedures for tracking and reporting the status of the QAPP.	Annually
S7.A.4.c	Provide an evaluation of the effectiveness of built stormwater treatment and flow control facilities and an assessment of overall performance in reducing phosphorus and fecal coliform in the annual report.	Develop procedures for tracking and reporting the status of the QAPP.	3/31/2021
S7.A.5.a	The City must submit the Lake Whatcom Implementation tasks for 2024–2029 by 12/31/2023 with a new loading capacity by March 2024 based on updated models.	Update the Lake Whatcom plan to reflect revised loading capacities predicted by the models.	12/31/2023
S7.A.5.b	The City must submit the Lake Whatcom Implementation tasks for 2024–2029 by 12/31/2023 with a new loading capacity by March 2024 based on updated models.	Update the Lake Whatcom plan to reflect revised loading capacities predicted by the models.	3/1/2024

### 6.3 Resource Analysis

The objective of the resource analysis is to estimate full-time equivalent (FTE) resources needed to close SWMP gaps and/or implement new strategies to strengthen SWMP compliance toward meeting the Phase II Permit requirements. An FTE is equivalent to the annual number of hours an employee works in a year, or 2,080 hours.

The analysis uses time estimates to calculate the number of hours needed to close each identified SWMP gap. If existing staff’s workload diminishes from the elimination of a program element (such as the Ecology Local Source Control Program), then the time allocation for those existing staff could be assigned to fill these gaps. Some gaps have ongoing programmatic resource demands while others are considered one-time events. The one-time events are assumed to be addressed with existing resources and therefore do not contribute toward the final FTE calculation. The ongoing programs have time estimates divided into “development” time estimates and “ongoing maintenance” time estimates for the years in the planning period.

Many Phase II Permit gaps exist simply because of new requirements scheduled to take effect on different dates within the Phase II Permit window (2019–2024); therefore, the FTE estimate is also sensitive to the implementation date.

Time estimates used in the analysis are based on the type of program work that is needed. Each Phase II Permit gap was categorized into one of the following four compliance gap categories:

- Compliance tracking
- SWMP documentation
- Policy development and implementation
- SWMP evaluation

These categories helped to establish basic assumptions describing the work, which became the basis for the estimated number of hours necessary to address the identified gaps. Table 6-5 shows the various categories and descriptions used in the resource model. Table 6-6 shows rates and hours needed to close the Phase II Permit gap.

**Table 6-5. Phase II Permit compliance categories**

Type of compliance measure	Description
Compliance tracking	Data collection and capture for reporting purposes.
SWMP documentation	Program reporting. Additional resources not expected (level of effort to achieve compliance is negligible).
Policy development and implementation	Documentation of strategies, procedures, etc. and training and execution as needed.
SWMP evaluation	Assessment of current practices for impact.
SWMP documentation	Formal documentation to meet regulatory requirement.



**Table 6-6. Rate analysis assumptions**

Assumption	Value	Unit
Average hourly rate <sup>a</sup>	175	Dollars
Hours per page <sup>b</sup>	4	hours
Annual days off	25	Days
Timespan	1	Calendar year
Start date	8/1/2019	Date
End date	7/31/2024	Date
Budget start date	2020	Year

- a. Discussion and review by City staff, includes benefits and overhead.
- b. HDR professional judgment and agency experience.

The details of the time estimates needed for each SWMP gap compliance work item are included in Appendix B (B.2 Gap Analysis). For SSWU budgeting purposes, the costs for each SWMP compliance activity were also included in the resource estimate. Table 6-7 shows the additional FTEs determined by the analysis for the planning period. This table should be interpreted to show the additional staff needed for any given year, and not to be additive, but cumulative. Thus the City would need to add two FTEs for 2020, and not need additional staff until fiscal year (FY) 2023, at which time two additional FTEs would be needed for the remaining 2 years of this planning period.

**Table 6-7. FTE resource requirements**

Budget year	FTE
2020	1.6
2021	1.1
2022	1.4
2023	3.8
2024	3.6

## 6.4 Recommendations

From the evaluation of the City’s activities to satisfy the previous Phase II Permit, it was found that only a modest amount of activities are identified to either fill a gap or provide value-added enhancements to the SWMP as outlined in Table 6-3 above. Table 6-4 outlines the new requirements in the current Phase II Permit, many of which are yet to be due for completion. It is mainly from the added requirements of the current Phase II Permit that it is recommended to consider additional staffing. Therefore, based on the results of the SWMP gap analysis and

resource calculation, it is recommended that the staffing requirements shown in Table 6-7 be included in the SSWU rate study analysis.