



Stormwater Management Action Planning Guidance

Phase I and Western Washington Phase II Municipal Stormwater Permits

Water Quality Program

Washington State Department of Ecology
Olympia, Washington

July 2024, Publication 24-10-027

Publication Information

This document is available on the Department of Ecology's website at:

<https://apps.ecology.wa.gov/publications/summarypages/2410027.html>

Cross-referenced or relevant documents: Publication 19-10-010:

[Stormwater Management Action Planning Guidance](#)¹ (July 2019)

Contact Information

Water Quality Program

P.O. Box 47600

Olympia, WA 98504-7600

Phone: 360-407-6600

Website²: [Washington State Department of Ecology](#)

ADA Accessibility

The Department of Ecology is committed to providing people with disabilities access to information and services by meeting or exceeding the requirements of the Americans with Disabilities Act (ADA), Section 504 and 508 of the Rehabilitation Act, and Washington State Policy #188.

To request ADA Accommodation, contact Water Quality Reception at 360-407-6600. For Washington Relay Service or TTY call 711 or 877-833-6341.

Visit [Ecology's ADA Accessibility web page](#)³ for more information.

For document translation services, call Water Quality Reception at 360-407-6600.

Para publicaciones en español, por favor llame a la Recepción de Calidad del Agua al 360-407-6600.

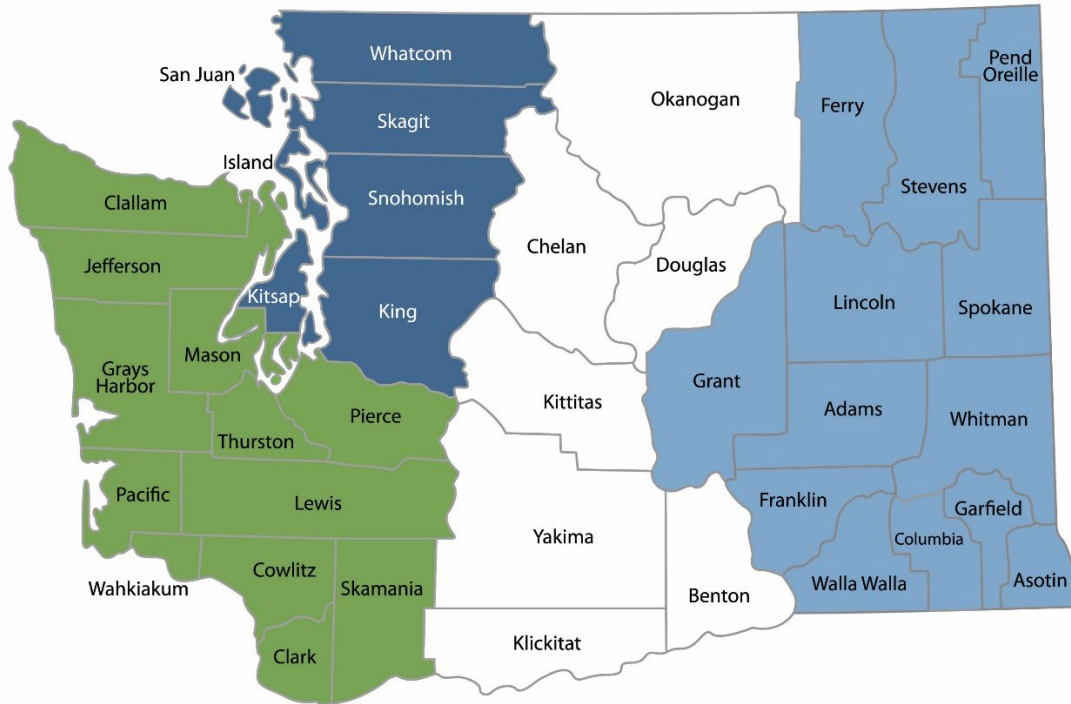
¹ <https://apps.ecology.wa.gov/publications/summarypages/1910010.html>

² <https://ecology.wa.gov/about-us/contact-us>

³ <https://ecology.wa.gov/About-us/Accessibility-equity/Accessibility>

Department of Ecology's Regional Offices

Map of Counties Served



Southwest Region 360-407-6300	Northwest Region 206-594-0000	Central Region 509-575-2490	Eastern Region 509-329-3400
---	---	---------------------------------------	---------------------------------------

Region	Counties served	Mailing Address	Phone
Southwest	Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Mason, Lewis, Pacific, Pierce, Skamania, Thurston, Wahkiakum	P.O. Box 47775 Olympia, WA 98504	360-407-6300
Northwest	Island, King, Kitsap, San Juan, Skagit, Snohomish, Whatcom	P.O. Box 330316 Shoreline, WA 98133	206-594-0000
Central	Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, Yakima	1250 West Alder Street Union Gap, WA 98903	509-575-2490
Eastern	Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman	4601 North Monroe Spokane, WA 99205	509-329-3400
Headquarters	Statewide	P.O. Box 46700 Olympia, WA 98504	360-407-6000

Stormwater Management Action Planning Guidance

Phase I and Western Washington Phase II Municipal Stormwater Permits

Water Quality Program
Washington State Department of Ecology
Olympia, WA

July 2024 | Publication 24-10-027



DEPARTMENT OF
ECOLOGY
State of Washington

This page intentionally left blank

Table of Contents

PURPOSE AND CONTEXT OF THIS DOCUMENT	1
INTRODUCTION.....	1
SUMMARY OF THE PROCESS DESCRIBED IN THIS DOCUMENT	3
RECEIVING WATER CONDITIONS ASSESSMENT	4
APPENDIX 14, SECTION 1 PHASE II PERMIT REQUIREMENT:	4
Step 1: Delineate Basins and Identify Receiving Waters	5
Step 2: Assess Receiving Water Conditions.....	7
Step 3: Assess Stormwater Management Influence.....	10
Step 4: Assess Relative Conditions and Contributions	11
RECEIVING WATER PRIORITIZATION	12
STORMWATER MANAGEMENT ACTION PLAN	15
PHASE II S5.C.1.D.I PERMIT REQUIREMENT:	15
PHASE I S5.C.6.D.II PERMIT REQUIREMENT (PARAPHRASED):	16
THE NEED FOR AND MOST BENEFICIAL PLACEMENT OF STORMWATER FACILITY RETROFITS	17
LAND MANAGEMENT/DEVELOPMENT STRATEGIES IDENTIFIED FOR WATER QUALITY MANAGEMENT	17
FOCUSED OR CUSTOMIZED IMPLEMENTATION OF STORMWATER MANAGEMENT ACTIONS	18
PROPOSED IMPLEMENTATION SCHEDULE AND BUDGET SOURCES	18
PROCESS TO ADAPTIVELY MANAGE THE PLAN	19
CONCLUSION	20
REFERENCES.....	21

Purpose and Context of this Document

This document provides guidance to jurisdictions implementing Stormwater Management Action Planning (SMAP) as required in the *2024 Phase I and Western Washington Phase II Municipal Stormwater Permits* (the Permits). The SMAP requirements are now an ongoing Permit requirement in the 2024 Permits. The SMAP Guidance developed for the 2019 Permit (Publication no. 19-10-010) is updated here with relatively minor updates intended to align with the 2024 Permits.

This document is organized according to the Phase II Permit language now included in Appendix 14 of the Permit and provides Ecology's guidance for meeting the Permit requirements. Phase II Permittees that developed an SMAP during the 2019 Permit cycle are not required to repeat all the steps outlined here to develop a SMAP for at least one new high priority catchment area, or additional actions for an existing SMAP.

Phase II Permittees that were new in the 2019 Permit cycle are now required to develop an SMAP and follow the steps outlined in Appendix 14 of the 2024 Permit.

This document is not meant to constrain or prescribe the approach that will be taken by every jurisdiction covered by the Permit.

For S5.C.6.d, Phase I Permittees that elect to develop a SMAP for a single sub-basin or catchment area located within the watershed-scale stormwater plans developed during the 2013 Permit term must consider the guidance in the SMAP section of this document. A Phase I County that chooses to prepare a SMAP for a basin that was not selected for their watershed-scale stormwater plan must consider the whole of this guidance document.

Introduction

There are many ways to successfully approach comprehensive stormwater planning in general, and many ways to approach the specific steps required by the Permit and in this document. Ecology recognizes that many jurisdictions are already actively planning stormwater investments and actions to accommodate future growth in a way that minimizes impacts to receiving waters and designated uses. Jurisdiction staff responsible for developing or updating a SMAP may, and should, coordinate with other local planning efforts and use and leverage those efforts to produce the permit-required deliverables. Some jurisdictions may simply need to add a subset of the steps required by the permit and described below to an existing planning effort. Others may have a plan or process underway that completely meets Ecology's goals and guidance for meeting the Permit requirements.

In addition to this document, Permittees should be familiar with the following references in order to understand and meet the requirements and the goals for the SMAP process:

- [Building Cities in the Rain](#)⁴ (BCitR, Commerce 2016)
- The following subsections in the *Permit Fact Sheet* (Ecology 2023):
 - In Section 5.1: “The Stormwater Problem”
 - In Section 5.2: “Phase I Counties’ Watershed Modeling and Planning”; “Stormwater Action Monitoring”; “Toxic Loading Study for Puget Sound”; and “Phase I Stormwater Outfall Monitoring Data”
 - In Section 8.5.11: “Stormwater Planning.” Western WA only (Phase I S5.C.6; WWA Phase II: S5.C.1.)”
 - In Section 8.5.23: “Stormwater Management for Existing Development.” Western WA only (Phase I; WWA Phase II: S5.C.5.7)

The Permit requires a planning approach that emphasizes protection of designated uses and improvements to receiving water quality and habitat under both existing and anticipated future developed conditions. Many of the steps below are explained in detail in BCitR. SMAP is focused on addressing impacts from the cumulative development in a watershed rather than on single site or subdivision impacts. SMAP helps to answer these three important questions:

1. How can we most strategically address existing stormwater problems, including how to support implementation of the Stormwater Management for Existing Development (SMED) Program through the identification of projects and actions?
2. How can we meet our future population and density targets while also protecting and improving conditions in receiving waters?
3. How can the SMAP process include, and actions identified benefit, Overburdened Communities, specifically Vulnerable Populations and Highly Impacted Communities (as defined in the Permits)?

A successful SMAP strategically identifies approaches – in addition to current requirements of the Permit – to accommodate future growth and development while preventing water quality degradation and/or improving conditions in receiving waters harmed by past development. Stormwater facility retrofit projects that address transportation-related runoff from high traffic areas are identified as a focus of the 2024 SMAP requirements.

Please note that in this document, “SMAP” is used as either a verb, for the planning; or as a noun, for the resulting plan.

⁴ https://www.ezview.wa.gov/site/alias__1780/overview/34828/overview.aspx/

Summary of the Process Described in this Document

Permittees that developed a SMAP during the 2019 Permit cycle are not required to repeat all the steps outlined here to develop a SMAP for at least one new high priority catchment area, or additional actions for an existing SMAP and may rely on the Receiving Water Assessment and Prioritization process conducted during the 2019 Permit. Permittees may choose to follow the steps outlined to update their previous process with new information or additional outreach and public and tribal involvement to develop a more informed SMAP to meet the 2024 Permit requirements.

Phase II Permittees that were new in the 2019 Permit cycle are now required to develop a SMAP and follow the steps outlined in Appendix 14 of the 2024 Permit which align with all the steps outlined here.

To successfully complete a SMAP, Permittees will use available information and professional judgment to:

- **Assess Receiving Water Conditions.** In this step you will become acquainted with all of your MS4 receiving waters by:
 1. Delineating all of the basins in your jurisdiction and identifying the receiving waters with total watershed areas between one square mile and about 20 square miles.
 2. Doing a rapid assessment of existing information about conditions in your receiving waters.
 3. Assessing the relative current and potential influence of your MS4 on each of your receiving waters.
 4. Putting all of this information together to narrow your list of receiving waters to a list that makes sense for prioritization in a public process.
- **Prioritize your narrowed list of receiving waters.** In this step you will gather tribal input, public input, build support for your SMAP, and select the receiving water and the sub-basin or catchment area(s) where SMAP best suits your MS4.
- **Develop a SMAP for the selected catchment area.** In this step you will:
 - Identify specific stormwater management actions to protect water quality in your selected receiving water, and
 - Determine an appropriate schedule and budget sources for implementing the activities and projects you have identified.

The remaining sections of this document describe each of these steps in more detail. Although these steps are presented in consecutive order, they may be implemented concurrently if that makes sense to the jurisdiction. Throughout this process, Permittees should follow a transparent process that informs and seeks input from Tribes, community stakeholders, and residents

Receiving Water Conditions Assessment

Permittees that completed this assessment during the 2019 Permit cycle are not required to repeat this step in order to inform the SMAP updates for 2024 Permit. Any new information may be added to the assessment and considered to better inform the SMAP and prioritization process.

Appendix 14, Section 1 Phase II Permit requirement:

Permittees shall document and assess existing information related to their local receiving waters and contributing area conditions to identify which receiving waters are most likely to benefit from stormwater management planning.

By March 31, 2027, Permittees shall submit a watershed inventory and include a brief description of the relative conditions of the receiving waters and the contributing areas. The watershed inventory shall be submitted as a table with each receiving water name, its total watershed area, the percent of the total watershed area that is in the Permittee's jurisdiction, and the findings of the stormwater management influence assessment for each basin. Indicate which receiving waters will be included in the prioritization process. Attach a map of the delineated basins with references to the watershed inventory table.

This assessment helps jurisdictions gain an understanding of their receiving waters, the relative impacts of urbanization and land use activities on those receiving waters, and what existing information is most useful to guide their prioritization (Appendix 14, Section 2 of the Phase II Permit).

Four steps are included in this overall assessment:

Step 1: Delineate basins and identify receiving waters,

Step 2: Assess receiving water conditions,

Step 3: Assess stormwater management influence, and

Step 4: Assess relative conditions, and contributions.

The outcome of the Receiving Water Conditions Assessment is a watershed inventory that identifies the list of candidate basins and includes the information you need to support your prioritization process.

Although these steps are presented in consecutive order, they may be implemented concurrently if that makes sense to the jurisdiction.

Step 1: Delineate Basins and Identify Receiving Waters

The first step in the Receiving Water Conditions Assessment is delineating the basins in your jurisdiction and identifying all of your receiving waters. The appropriate scale for these basins ranges from about one square mile (the smallest area likely to support a perennial stream) to up to about 20 square miles total drainage area, including all contributing areas outside of your permit coverage area. Jurisdictions may have compelling reasons to look at larger watersheds, but rivers and most large streams (more than third Strahler order) are likely too large for SMAP actions alone to result in noticeable improvements in the receiving waters.

Use the scale that best meets your end goal, *i.e.*, whether the receiving water prioritization (Appendix 14, Section 2) is expected to be driven by flow control or by toxics or nutrient loading reduction (or both). Counties may need to begin at a larger scale to narrow the number of basins included in the Receiving Water Conditions Assessment. Whatever the scale for the delineation, SMAP actions (S5.C.1.d.i, Appendix 14, Section 3) will ultimately be identified for a smaller catchment area or areas within the priority basin.

While it is not required to use GIS or other digital tools to complete this work, Ecology encourages Permittees to use the “assessment units” from the [Puget Sound Watershed Characterization Project](#)⁵ as a starting point, or the [Hydrography Program \(WASHD\) - Washington State Department of Ecology](#)⁶ plus that is available Statewide, other existing GIS products. The Watershed Characterization’s “assessment units” provide a first cut of basin delineations that may need to be refined to better reflect on-the-ground conditions and/or meet the needs of this permit requirement. Permittees in Clark and Cowlitz Counties may refer to the watershed delineation work that was done in developing the *Lower Columbia Region Monitoring Implementation Plan* (Stillwater Sciences 2016).

To successfully complete this step, whether using the Watershed Characterization Project “assessment units” or another existing source of information, or doing the work specifically for this process, you will delineate all of the basin areas in your jurisdiction and identify the receiving water for each of those basins. This exercise should rely on your MS4 map, which identifies your MS4 system, discharge locations, and receiving waters.

1. Every part of your jurisdiction drains to a receiving water of some type and size. This step should result in a map of your jurisdiction delineated into basins and a list of receiving waters to which your MS4 discharges (small stream segments, wetlands, lakes, large rivers, Puget Sound) – whether or not the receiving water is inside your jurisdictional boundaries.

⁵ <https://ecology.wa.gov/Water-Shorelines/Puget-Sound/Watershed-characterization-project>

⁶ <https://ecology.wa.gov/research-data/data-resources/geographic-information-systems-gis/hydrography-program-washd>

2. Phase II Counties will do this step for your permit coverage area (Urban Areas and designated Urban Growth Areas). You are encouraged to also consider additional areas in your jurisdiction to determine the best approaches to integrate SMAP into your overall efforts at protecting receiving waters. You may ultimately choose to do SMAP for a catchment area that lies outside your permit coverage area but would benefit your receiving waters.
3. For each receiving water, except direct MS4 discharges to Puget Sound, determine:
 - a. The total contributing watershed area for that receiving water, inclusive of your jurisdiction and other jurisdictions, to the point where the receiving water flows into a flow control-exempt water body as defined in the *Stormwater Management Manual for Western Washington* (SWMMWW) and Permit Appendix 1.
 - b. The percentage of that total watershed area that lies inside your jurisdictional boundary.
4. For direct MS4 discharges to Puget Sound, determine whether the discharge is to a shoreline area where there is likely a net deposition of sediment/solids and therefore stormwater- associated pollutants (Black *et al.*, 2018).
 - a. All of Puget Sound’s urban bays are areas of net deposition of sediment/solids.
 - b. The Coastal Atlas Map⁷ characterizes the coast of Puget Sound in terms of drift cell types: divergence, left-to-right or right-to-left movement, or no appreciable drift. Determine whether your outfall is to an active transport zone (i.e., characterized as left-to-right or right-to- left) or if it is in an area where sediment may be more likely to accumulate (i.e., characterized as no appreciable drift). Include this designation in your watershed inventory.

A “no appreciable drift” designation needs to be field checked and clarified in your watershed inventory. The lack of drift or undefined drift may reflect either low energy areas with abundant sediment, which would be higher priorities for SMAP, or high (or low) energy areas with very little sediment accumulation, which would be lower priorities for SMAP.

⁷ <https://apps.ecology.wa.gov/coastalatlasmapp>

Step 2: Assess Receiving Water Conditions

In this step you will compile and review available information to understand the likely condition of each of the receiving waters to which your MS4 discharges, whether directly or indirectly. This step is intended to be a rapid assessment of what you know about the condition of your receiving waters to help you assess Stormwater Management Influence in Step 3, assess Relative Conditions and Contributions in Step 4, and then prioritize your receiving waters and identify appropriate actions to include in your SMAP for the selected basin. You are not expected to collect new data or to establish a local monitoring program. The BCitR guidance provides a table of information and sources to be considered for this step. For each receiving water:

1. Identify the designated uses and desired water quality conditions to support those uses. The assessment of desired conditions can be done generally; for this exercise it is not necessary to collect new data or conduct a detailed numeric assessment. Depending on the designated use(s) it may even be appropriate for your assessment to focus on a single, specific indicator or a descriptor (*e.g.*, anadromous fishery) for one or more receiving waters.
2. Determine what information is available and assess the extent to which the desired conditions are being met, or if specific data are unavailable, the extent to which they are likely being met. It is not necessary to review in detail all available water quality and habitat information. If local data are not available, consider using regional information or data from nearby or similar receiving waters/basins.
3. Gather and evaluate landscape-scale data (land use and cover, road density, road type, traffic levels, zoning, population, etc.) that help explain and predict receiving water conditions.
4. Assess the development pressure in the basin.
 - a. How much growth is being directed toward this area?
 - b. How is transportation planning likely to affect this basin?
 - c. In addition to watershed-scale implementation of Low Impact Development techniques, are headwaters, riparian areas, and other sensitive portions of the basin likely to be protected under current zoning and plans?
5. For basins that discharge to impaired waters, consider:
 - a. What sources/activities are the main contributors to the pollutant load targeted for reduction (*e.g.*, polluting activities associated with particular land use or land cover types)?
 - b. When does the impairment occur? Is it seasonal, or flow-dependent?
 - c. Can these sources be addressed (or are they already being addressed) through BMPs found in the SWMMWW and applied through your SWMP?
 - d. Will enhanced municipal stormwater management actions result in meeting loading targets?

- e. Are substantial non-stormwater management actions needed to address the impairment?
 - f. What combination of additional stormwater management actions will most effectively reduce current and future loadings?
6. Evaluate information related to overburdened communities within the contributing areas to help determine where overlap may exist with improving receiving water conditions for water quality and human health.
- a. Sources of information for overburdened communities include, but are not limited to: [USEPA’s EJ Screen](#)⁸, the Washington State Department of Health [Washington State’s Health Disparity Map](#)⁹, Council of Environmental Quality’s [Climate and Economic Justice Screening Tool](#)¹⁰.

Additional guidance and context for completing these six actions is given in the remainder of this section. In the introduction to Chapter 4 of BCiR, “Prioritizing Watersheds for Stormwater Investment,” two steps are listed related to the Assessment of Receiving Water Conditions: reviewing any regional- scale information as an initial screen, and then assessing local, watershed-specific information. Fully analyzed local water quality and biological indicator datasets do not exist for all receiving waters, and not all jurisdictions have capacity to analyze data that do exist. Jurisdictions who have more local data available can make more informed decisions.

Descriptions of appropriate data and information to include in the Assessment of Receiving Water Conditions, as well as possible data sources, are given in BCiR Chapter 4.3 “Prioritizing Watersheds for Stormwater Investment, Using Local Data” and Chapter 5 “Local Data Sources for Prioritization of Watersheds.” In particular, refer to Table 5.4 “Local Data for Prioritizing Flow Control, LID and Runoff Treatment.”

Consider data available from other regional datasets, assessments, and reports from other local jurisdictions, soil and water conservation districts, or state or federal resource and science agencies. Some particularly helpful sources for the Assessment of Receiving Water Conditions include:

- The [Watershed Characterization Project](#)¹¹ includes water flow assessments (delivery, surface storage, recharge, and discharge), water quality assessments (sediment, nutrients, pathogens, and metals), and habitat assessments (terrestrial, freshwater, and marine shorelines) that can be useful for this step.
- Ecology’s [Environmental Information Management \(EIM\) database](#)¹² contains water and sediment quality data from studies conducted across the state.

⁸ <https://www.epa.gov/ejscreen>

⁹ <https://fortress.wa.gov/doh/wtn/WTNIBL>

¹⁰ <https://screeningtool.geoplatform.gov/en/#3/33.47/-97.5>

¹¹ <https://ecology.wa.gov/Water-Shorelines/Puget-Sound/Watershed-characterization-project>

¹² <https://ecology.wa.gov/Research-Data/Data-resources/Environmental-Information-Management-database>

- The U.S. Geological Survey has collected water quality and biota data in urban and rural areas throughout western Washington as part of the [National Water Quality Assessment Program](#)¹³ and other studies.
- Stormwater Action Monitoring (SAM) produced [regional receiving water assessments](#)¹⁴ of Puget Sound urban nearshore areas and Puget lowland streams. SAM identified correlations between water and sediment quality and biota conditions, and watershed characteristics including several measures of urbanization including watershed and riparian canopy and impervious surfaces. These studies may be useful to many Permittees for completing the Assessment of Receiving Water Conditions.
 - Sargeant and Ruffner, 2017; Lanksbury *et al.*, 2017; Black *et al.*, 2018; De Gasperi *et al.*, 2018; and Langness *et al.*, 2022, each provide stormwater-management-relevant representations of what is known about these receiving waters across the full range of urbanized conditions. The studies present regional information that can help jurisdictions evaluate the status of their receiving waters. Local data can be compared for contextual comparison of “poor, fair, or good” conditions, or across the entire range of regional conditions.
- The Phase I Counties’ 2013 permit modeling and basin plan reports (King County 2018, Snohomish County 2017, Clark County 2017, and Pierce County 2017) provide assessments of water quality conditions and designated uses for four watersheds that are under pressure of development.

Review these and/or other relevant sources to find data for nearby receiving waters or ones with similar watershed characteristics. In general, identify both the likely best and the likely worst receiving water conditions to which your MS4 contributes. Document how you are using data sources in the Assessment of Receiving Water Conditions, and what data or information would be useful to improve it.

If you are not satisfied with the level of information you currently have, you may consider including targeted new data collection and analysis as a SMAP action for use in subsequent planning cycles or to improve future assessments, but it is not required. For this initial planning effort, Permittees are only required to complete all of the steps with the information they have available. Use best professional judgment in cases of limited information and revisit these areas in future updates or as more regional findings become available. In the absence of local receiving water monitoring data, water quality and biotic conditions may be predicted using landscape, physical habitat, or disturbance information.

In addition to considering designated uses and existing (or inferred) water quality data, assess the amount (approximate percentage) of current and expected future land uses and impervious surfaces and their distribution in the watershed (*i.e.*, headwaters, riparian areas, floodplains). Identify

¹³ https://www.usgs.gov/mission-areas/water-resources/science/national-water-quality-assessment-nawqa?qt-science_center_objects=0&qt-science_center_objects

¹⁴ <https://ecology.wa.gov/Regulations-Permits/Reporting-requirements/Stormwater-monitoring/Stormwater-Action-Monitoring/SAM-status-and-trends>

overburdened communities that possibly have health risks that may be improved through stormwater management actions. Knowing your community and landscape at this level of detail will inform your SMAP process to identify a place to focus additional projects and activities to benefit those receiving waters in the long term. Compile and organize the relevant available information for further analysis.

Step 3: Assess Stormwater Management Influence

This step will provide the rationale for sorting your receiving waters according to their relative expected benefit from SMAP. The assessment requires you to use your judgment as to the relative influence of your MS4 and potential SMAP actions to protect or improve receiving water conditions, based on the information gathered and compiled in Steps 1 and 2. Use that information and your knowledge of conditions across your jurisdiction’s landscape to help determine/judge your MS4’s current contribution to the receiving water and your potential stormwater management influence on future conditions in the receiving water.

A basin with relatively low expected Stormwater Management Influence for SMAP is defined as having both “low expected hydrologic impacts” and “low expected pollutant loadings” that are defined as follows:

- Low expected hydrologic impacts are from MS4s that drain directly to:
 - Flow-control exempt receiving waters as defined in the 2024 SWMMWW, or
 - Ephemeral streams (generally, streams having less than one square mile of contributing watershed area), or
 - Receiving waters primarily influenced by groundwater flows.
- Low expected pollutant loadings are from MS4s receiving runoff from only:
 - Non-pollutant generating surfaces as defined in the 2024 SWMMWW; and/or
 - Low density residential land uses; and/or
 - Parking areas with up to 100 total trip ends or for up to 300 employees; and/or
 - Roads with ADT up to 7,500, fully and partially controlled limited access highways with ADT up to 15,000; and/or
 - Other land uses where runoff is already being treated using stormwater BMPs designed in accordance with the SWMMWW (or equivalent), and in particular, roads with higher ADT, parking areas for buildings with more total trip ends, and on-street parking areas of municipal streets in commercial and industrial areas (see the 2024 SWMMWW).

For each basin, document your answers to the following questions:

1. What are the major pollutants and/or flow impacts associated with individual point sources versus non-point sources? Will the loadings and/or runoff volumes increase under expected future land use conditions?

2. Can these sources be addressed through other land management strategies, including policies, code, or development standards?
3. Can future growth be managed to minimize adverse stormwater impacts?

The steps that follow in this document do not apply for the basins that have low expected Stormwater Management Influence. Provide your completed watershed inventory with your Permit Annual Report and include your Assessment of Stormwater Management Influence documentation.

After assessing Stormwater Management Influence, consider where it is most likely that enhanced stormwater management, retrofits, and/or land use planning in a basin will protect or improve downstream water quality and habitat. Include this information in Step 4 – Assessment of Relative Conditions and Contributions.

Step 4: Assess Relative Conditions and Contributions

In this step you will narrow the number of receiving waters and basins to a candidate list to include in your Receiving Water Prioritization process. Permittees are not required to prioritize basins that were determined in Step 3 to have relatively low expected Stormwater Management Influence for SMAP.

Both BCitR and the Watershed Characterization Project provide approaches to identify relative conditions. Document the approach and reasoning for the decisions you make in this step to justify and explain them in your public prioritization process. BCitR’s “Management Matrix for Restoration and Protection” in Chapter 4.2 appropriately emphasizes focusing on “protection” and “restoration” as opposed to “conservation” and “development” for stormwater investments, and that approach may be useful for your Assessment of Relative Conditions and Contributions. Consider these categories as they apply to your basins and their receiving waters, along with what opportunities likely exist for additional stormwater investments.

Evaluate the planned and expected future land uses in each potential candidate basin and consider how those changes are likely to impact water quality, habitat, and biota in the receiving waters. You began this work in Step 2 and continued it in Step 3. Anticipate the most likely condition of landscape-scale indicators either under full build-out conditions, or in about 20 years.

Propose protection and/or restoration goals for each potential candidate basin. Consider the gap between what is known about the existing conditions and the goals and explain the rationale as to where targeted stormwater investments and actions are most likely to protect/improve receiving water conditions. Part of this step may include coordinating with your neighboring jurisdictions, or interconnected MS4s, and learning about their perspectives, needs, and plans for the same receiving water. Your neighbors may have existing plans and processes that can be leveraged for your SMAP.

You may choose to delineate catchments (sub-basins) at this step for prioritization. The delineation into catchment areas can be performed on a limited number of basins that are high priority candidates for initial actions. Alternatively, the delineation may be done as part of the Receiving Water Prioritization after the basins are prioritized but before selecting the final catchment area.

This final step in the Receiving Water Conditions Assessment should result in a manageable and credible list of candidate basins to begin the prioritization process.

Some (particularly, small) jurisdictions may not have any basins where their actions can significantly influence receiving water conditions. If this is the case, submit your documentation instead of a list of candidate basins in your Permit Annual Report.

The final product of this effort will be a watershed inventory that organizes the data into a common format (such as in a spreadsheet, database, or GIS) for further analysis. The inventory will include relevant findings from each step. Document the overall rationale for the final list of basins, the proposed restoration or protection goal(s) for each receiving water, and some informed ideas about what specific catchment areas or sub-basins should be targeted for additional stormwater investments. Also include relevant information about existing plans and planning efforts that might meet or be leveraged to address SMAP needs. You will submit the inventory and map to Ecology according to the Permit Annual Report. As new information becomes available, add it to the inventory at appropriate milestones.

Receiving Water Prioritization

Permittees that completed the prioritization during the 2019 Permit cycle are not required to repeat this step in order to inform the SMAP. Any new information may be considered to better inform the SMAP and public involvement process.

Phase II Permit requirement, Appendix 14 (2): Informed by the Assessment of Receiving Water Conditions above and other local and regional information, Permittees shall develop and implement a prioritization method and process to determine which receiving waters will receive the most benefit from implementation of stormwater facility retrofits, tailored implementation of SWMP actions, and other land/development management actions (different than the existing new and redevelopment requirements). The retrofits and actions shall be designed to: 1) conserve, protect, or restore receiving waters through stormwater and land management strategies that act as water quality management tools, 2) reduce pollutant loading, and 3) address hydrologic impacts from existing development, as well as planned for expected future buildout conditions.

Document the prioritized and ranked list of receiving waters no later than June 30, 2027.

You will establish and conduct a process to prioritize among your candidate basins to select an area of focus where SMAP will be applied to reduce pollutant loading and/or address hydrologic impacts from existing, expected, or proposed future development. Three strategic SMAP elements will be highlighted during the prioritization process:

- 1) Strategic retrofits, including a combination of both improvements of existing structural facilities and siting and construction of new facilities. Include projects that address transportation-related runoff from high traffic areas.
- 2) Land management strategies that act as a water quality management tool to conserve, protect, or restore receiving waters.
- 3) Strategic SWMP enhancements and targeted S5.C stormwater management actions.

Your prioritization process will identify the receiving water expected to benefit most from future implementation of these three strategic elements in your SMAP. You will then select a catchment

area (recommended to be approximately 400 to 600 acres, or a catchment scale that is appropriate for this level of planning in your jurisdiction). Chapter 4 of BCitR “Prioritizing Watersheds for Stormwater Investment” lists these steps for the prioritization process: Establish prioritization goals; actively seek input from natural resource agencies and tribes; and involve interested parties the public early on in the prioritization process. A good process will include these steps to provide transparency, improve the knowledge base, and help to ensure better success in SMAP implementation.

Basins that drain to high quality receiving waters that are also under pressure of development should score high in the prioritization process. A successful SMAP for such a basin is likely to protect high- quality receiving water quality over the long term.

Follow these general prioritization principles as they apply to your receiving waters:

1. Give higher priority to basins with receiving waters that show low to moderate levels of impairment (*e.g.*, as assessed via water quality data, Benthic Index of Biotic Integrity (B-IBI) scores, or habitat surveys). These receiving waters are expected to benefit more quickly as a result of stormwater management actions.
2. Give higher priority to basins where the municipality can exert greater influence either alone or in partnership with one or more neighboring jurisdictions. For example, assign higher priority to basins that either have most of their associated drainage area within the municipality, or where an inter-local agreement is or will be in place with one or more neighboring municipalities to implement the SMAP. In other words, if the municipality coordinates a priority basin identification and rehabilitation strategy approach with a neighboring municipality, a shared basin may score higher.
3. Give higher priority to basins where regional rehabilitation efforts are also focused or to receiving waters identified as important under other planning processes such as WRIA plans, Salmon Recovery Plans, MTCA/Superfund cleanups, Endangered Species Act listings and critical habitat designations. Basins draining to receiving waters listed in the 303(d) Watershed Assessment as Category 5 based on B-IBI scores may warrant higher priority if low B-IBI scores are likely due at least in part to hydrologic conditions.
4. Give higher priority to basins with direct MS4 discharges to shoreline segments with low or negligible longshore transport and particularly to areas in Puget Sound where sediment accumulates (*i.e.*, bays, lagoons, inlets, depositional beaches). Sediment depositional areas are higher priority for SMAP than open shoreline drift cells with high energy dispersion of pollutants.
5. Give a higher priority to basins with overburdened communities, including Vulnerable Populations and Highly Impacted Communities, where the water quality issues, and human health impacts overlap and can be addressed (at least partly) through stormwater management improvements.

Following selection of the priority basin, your process should include selection of the catchment or sub- basin area where stormwater investments will be made for SMAP.

Counties should consider the potential for annexation of areas within their basins and describe how these areas are taken into account in the prioritization process. Coordination and collaboration with adjacent jurisdictions will improve planning in these areas and help to refine priorities. It is acceptable for a Phase II County to select a catchment area outside of their permit coverage area for SMAP if the planning and the resulting stormwater management actions will benefit a high priority receiving water.

Prior to finalizing your prioritization, for the top few candidate basins, review the protection and restoration goals with all of the information gathered for Step 2, Assess Receiving Water Conditions. Use this information to judge what relative level of investment is likely needed to meet water quality goals for each basin, including the anticipated need for flow control and treatment facilities. To the extent possible, predict likely hydrologic and pollutant loading impacts from your current and future land use combinations. General stormwater discharge data for pollutant loading impacts can be found in the *Phase I Stormwater Permit: Final S8.D Data Characterization, 2009-2013* (Hobbs *et al.*, 2015). Pollutant loads across your jurisdiction may be highly variable. Scenario modeling may be helpful for this planning requirement, but Ecology does not require that you conduct a modeling exercise for SMAP.

If you are considering selecting an impaired waterbody with current or future Total Maximum Daily Load (TMDL) requirements as a SMAP priority basin, you must document how SMAP investments will go above and beyond the current (or currently expected) Permit and TMDL requirements, and what the additional investments will achieve. For such basins, include substantial, scientific justification including conducting modeling exercises or other quantitative evaluations that are appropriate for your TMDL.

Be sure to document your process well and be prepared to adjust it as process or project improvements are identified. Ensure that you gather feedback from interested Tribes, interested parties, and residents and allow time to include that feedback in your process and SMAP.

Stormwater Management Action Plan

All Permittees are required to complete the development or update of a SMAP. Permittees that completed a SMAP as part of the 2019 Permit cycle are required to complete and submit a SMAP for at least one new high priority catchment area, or additional actions for an existing SMAP; whereas New Permittees from the 2019 Permit cycle are required to complete their SMAP for the first time. A purpose of the SMAP is to support implementation in Stormwater Management for Existing Development (SMED), keep the project types in mind when developing or updating SMAPs (see Phase II Appendix 12 for SMED project details).

Phase II S5.C.1.d.i Permit requirement:

No later than March 31, 2027 (Permittees developing a SMAP for the first time and following Appendix 14 have a due date of no later than March 31, 2028), Permittees shall develop a SMAP for at least one new high priority catchment area, or additional actions for an existing SMAP, that identifies all of the following:

- (a) A description of the stormwater facility retrofits needed for the area, including the BMP types and preferred locations. Include projects that address transportation-related runoff from high traffic areas.*
- (b) Land management/development strategies identified for water quality management.*
- (c) Focused, enhanced, or customized implementation of stormwater management actions related to permit sections within S5, including:*
 - IDDE field screening,*
 - Prioritization of Source Control inspections,*
 - O&M inspections or enhanced maintenance, or*
 - Public Education and Outreach behavior change programs*
 - Identified actions shall support other specifically identified stormwater management strategies and actions for the basin overall, or for the catchment area in particular.*
- (d) Identification of needed changes to local long-range plans to address SMAP priorities, if applicable.*
- (e) A proposed implementation schedule and budget sources for:*
 - Short-term actions (i.e., actions to be accomplished within six years), and*
 - Long-term actions (i.e., actions to be accomplished within seven to 20 years).*
- (f) Actions in the SMAP that may benefit overburdened communities, including specifically Vulnerable Populations and Highly Impacted Communities.*
- (g) A process and schedule to provide future assessment and feedback to improve the planning process and implementation of procedures or projects.*

Phase I S5.C.6.d.ii Permit requirement (paraphrased):

Counties shall produce a SMAP for a new single catchment area located within the watershed-scale plans developed in the 2013 Permit (or another basin selected using a process similar to the one described above) or additional actions to an existing SMAP. The SMAP must identify the same types of actions and specify which are Short-term actions and Long-term actions.

*A county may select an alternative basin, by following the same process as the Phase II Permit (i.e., by following **all** of the steps in this guidance document, not just the SMAP).*

The scale of the SMAP is expected to be at the catchment area size: approximately 400 to 600 acres, or a sub-basin or catchment scale that is appropriate for this level of planning in your jurisdiction. The catchment area within your priority basin will have been identified and selected in your prioritization process.

Basins draining to high quality receiving waters that are under pressure of development should have scored high in the Receiving Water Prioritization. For these priority basins, SMAP investments should focus on: retrofits to address protection of hydrologic function, zoning/land use designations, conservation easements, and/or land acquisition.

On the other end of the spectrum, Ecology recognizes that most or all of the land areas under the jurisdiction of many Western Washington Permittees are already built out, and the receiving waters that scored high in the Receiving Water Prioritization are more in need of improvement than protection. For these priority basins, SMAP investments for priority basins in these jurisdictions should focus on stormwater retrofits to reduce pollutant loads, tailored maintenance activities such as line cleaning, and other activities or capital projects to reduce pollutant loading and, if the receiving water is a small stream, reduce stormwater flows to allow improvements to stream habitat conditions.

Most Western Washington Permittees fall somewhere in between these two ends of the spectrum and their SMAP should include a mix of protection and improvement projects and activities appropriate to the local conditions. Projects included in SMAPs should have an MS4 nexus and not include in-stream, or in the receiving water actions.

Phase I Counties will complete a SMAP for at least one catchment area within the watershed that was modeled pursuant to the requirements of the 2013 Permit unless you followed the process above to select a different receiving water or update an existing SMAP to include additional actions.

Phase II Counties may complete a SMAP for a catchment area that lies outside the permit coverage area and would benefit your receiving waters. These counties may choose to do the SMAP for a basin outside of the permit coverage area where stormwater management actions will help protect or restore the selected high priority receiving water. Examples may include:

- Basins identified in the comprehensive plan that are under development pressure where stormwater management actions would protect and/or improve receiving water quality.
- Basins where existing development or land use practices have degraded water quality, and retrofits or stormwater management actions would provide benefits that could help protect and/or improve receiving water quality and habitat.

The need for and most beneficial placement of stormwater facility retrofits

In this context, ‘stormwater facility retrofits’ includes projects that retrofit existing treatment and/or flow control facilities, and new flow control or treatment facilities/BMPs that address impacts from existing development. SMAP should include appropriate, strategic stormwater retrofits of either or both of these types. A focus in the 2024 Permits is the inclusion of projects that address transportation-related runoff from high traffic areas. Permittees should use local conditions, road type or category to identify high traffic areas.

Pursuant to the Receiving Water Conditions Assessment and Receiving Water Prioritization (or Phase I County scenario modeling), SMAP will include retrofits intended to provide flow control and/or treatment benefits that address and support the goals for the receiving water. Due to varying levels of capacity and expertise, the necessary capacity and most beneficial placement of these facilities within the catchment area will be determined to a different level of precision and certainty for each jurisdiction. Your level of effort on this step should match your capacity and expertise.

Anticipated “opportunistic” retrofit projects within the SMAP catchment (based on construction initiated for other purposes in the basin) should be included in this section, but the Permittee must assess whether these projects alone will be sufficient, or if additional strategically sited retrofits will be needed to meet the goals for the receiving water. Reduction of impervious surfaces may provide significant cost savings in needed structural controls.

Land management/development strategies identified for water quality management

SMAP may include identification of lands to protect or conserve from impervious surface conversions or native vegetation removal, and the strategic means for providing the needed protection, which could be addressed via purchase or zoning or land use policy changes, to name a few options. SMAP may also include other zoning or land use policy changes deemed necessary to prevent the water body from maintaining its current designated uses.

Any receiving water with a largely undeveloped contributing watershed will benefit from planning and implementation of land management and development strategies. Such actions will particularly support protection of a small stream or lake with good water quality and habitat conditions.

Built-out areas may benefit from efforts to increase or maintain canopy cover.

Focused or customized implementation of stormwater management actions

Where appropriate, coordinate SMAP with other aspects of S5.C implementation. Pursuant to your Receiving Water Conditions Assessment and Receiving Water Prioritization (or Phase I County scenario modeling), your SMAP may include implementation of targeted, enhanced, or customized implementation of stormwater management actions related to the following Permit provisions within S5.C in addition to the other required SMAP actions:

- Focused or more frequent IDDE field screening;
- Prioritization of Source Control inspections;
- O&M inspections or enhanced maintenance of facilities you own or operate;
- Maintenance that requires capital construction of more than \$25,000; *and/or*
- Public Education and Outreach behavior change programs to support SMAP actions for the receiving water overall, or for the catchment area in particular.

Permit flexibility allows for effective targeted implementation of each of these S5.C programs.

Proposed implementation schedule and budget sources

SMAP will include a proposed implementation schedule and the determination of the necessary budget to implement SMAP projects and activities. Be sure to include facility design, land acquisition, permit fees, installation, O&M, staff and other resources to support tailored S5.C activities for the catchment, any desired monitoring and analysis, and administrative support. A purpose of the SMAP is to support implementation in the Stormwater Management for Existing Development (SMED) Program with the identification of strategic investments through the identification of projects and actions. Associated with SMED reporting and planning for implementation, Permittees will report the amount of estimated or projected equivalent acres managed by stormwater facility retrofits and SMAP project costs for the next Permit term (e.g. 2029-2032). This report shall be submitted to Ecology no later than March 31, 2028 (WWA PH II Permit S5.C.7.e).

Ideally, you will prioritize investments and actions to achieve the quickest and surest possible preservation and/or restoration of designated uses. Develop the SMAP in a way that (1) you fully expect the investments to meet your stated goals for the receiving water, and (2) you can reasonably foresee the plan being implemented over the course of future Permit cycles.

Ecology has not yet established a minimum level of effort for SMAP project implementation specifically. The SMAP should be a roadmap to strategic stormwater investments. Your SMAP budget should identify likely and potential funding sources and a realistic schedule to accomplish progress on both short-term and long-term actions.

SHORT-TERM ACTIONS (I.E., ACTIONS TO BE ACCOMPLISHED WITHIN SIX YEARS)

The 6-year timeframe is identified in Growth Management Act (GMA) Capital Facility Planning process. Short-term SMAP actions will help meet water quality goals, but they are a mix of

opportunistic efforts (that are the result of other efforts occurring or planned in the area) and strategic projects/activities. These short-term improvements can be helpful in providing visibility to successes and gaining support for continued actions, and will complement the more strategic, long-term approach to meet SMAP objectives.

LONG-TERM ACTIONS (*I.E.*, ACTIONS TO BE ACCOMPLISHED WITHIN SEVEN TO 20 YEARS)

The 20-year timeframe is identified in the GMA Capital Facility Planning process. Long-term SMAP actions and projects are strategic rather than opportunistic. SMAP should include an anticipated schedule for long-term implementation that includes interim steps. This schedule is not intended to be a Permit compliance goal, but rather an indication of the anticipated level of effort that reflects an understanding of the time and resources required for detailed planning and successful implementation.

Process to adaptively manage the plan

The process to adaptively manage the SMAP will document your progress toward meeting your goals and enable you to report progress to the funders, the public, and Ecology. Your process should directly reflect the protection and/or restoration goals that were set for the receiving water during the Receiving Water Conditions Assessment or in the Phase I Counties' scenario modeling and findings. The adaptive management process may also address the process used to develop the SMAP in order to improve effectiveness of the program.

SMAP adaptations should be expected over time as Permittees find a better way to run the process or learn from implementation. The SMAP may benefit from strategic monitoring, particularly where little data were initially available. The SMAP should include a long-term assessment approach in sufficient detail that it is clear how your jurisdiction will know and be able to report whether the protection and/or restoration goals are being achieved. The adaptive management process should include implementation tracking and an ongoing assessment of what portion of the planned projects and activities have taken place and how much of the catchment area has been addressed.

Conclusion

A successful SMAP strategically identifies approaches – in addition to current requirements of the Permit – to accommodate future growth and development while preventing water quality degradation and/or improving conditions in receiving waters harmed by past development. To reduce the effort needed to develop the permit-required deliverables for SMAP, take advantage of the work already accomplished in your jurisdiction and by neighboring jurisdictions. Make early efforts to utilize technical support and gather necessary information.

A good prioritization process will ensure that the goals for the priority receiving water and SMAP are clear, and that the planned stormwater management activities are well matched to the areas in which they will take place. Ideally, SMAP will have broad public support as a result of the process you followed to create the plan. Permittees who have successfully completed the steps above will have confidence that SMAP will make a substantial, positive difference in future receiving water conditions, identify actions that will benefit all communities, including overburdened communities, and that it can be realistically implemented and influence other development planning efforts.

References

- Black, R.W., A. Barnes, C. Elliot, and J. Lanksbury. 2018. *Nearshore sediment monitoring for the Stormwater Action Monitoring (SAM) Program, Puget Sound, Western Washington*. Prepared in cooperation with the Washington State Department of Ecology, Stormwater Action Monitoring (SAM) Program. U.S. Department of Interior. U.S. Geological Survey. Tacoma, WA. Scientific Investigations Report 2018-5076.
- Clark County. 2017. *Clark County Whipple Creek Watershed-Scale Stormwater Plan Report*. Prepared by Clark County with OTAK, Inc. and FSC Group. Vancouver, WA. September 2017.
- Commerce. 2016. *Building Cities in the Rain*. Washington Department of Commerce Publication 006. September 2016.
- DeGasperi C., R.W. Sheibley, B. Lubliner, C.A. Larson, K. Song, and L.S. Fore. 2018. *Stormwater Action Monitoring Status and Trends Study of Puget Lowland Ecoregion Streams: Evaluation of the First Year (2015) of monitoring Data*. Prepared in collaboration with the Washington Department of Ecology, U.S. Geological Survey, and the Puget Sound Partnership. King County Water and Land Resources Division. Science and Technical Support Section. Seattle, WA. May 2018.
- Ecology. 2018. Fact Sheet for the Phase I, Western Washington Phase II, and Eastern Washington Phase II Municipal Stormwater Permits. Washington Department of Ecology. August 2018.
- Ecology. 2019. *Stormwater Management Manual for Western Washington*. Washington Department of Ecology, Olympia, WA. Publication No. 19-10-021.
- Hobbs, W., B. Lubliner, N. Kale, and E. Newell. 2015. *Western Washington NPDES Phase I Stormwater Permit Final S8.D Data Characterization 2009-2013*. Washington State Department of Ecology, Olympia, WA. Publication No. 15-03-001.
- King County. 2018. *Bear Creek Watershed Management Study*. King County Department of Natural Resources and Parks. Seattle, WA. April 2018.
- King County Conservation District. 2019. *Puget Sound Urban Tree Canopy and Stormwater Management: A Report Comparing USDA Forest Service i-Tree Hydro and Washington State Department of Ecology Western Washington Hydrology Model*. King County Conservation District. March 2019.
- Langness, M., Nordstrom, D., and J. West. 2022. *Stormwater Action Monitoring 2019/20 Puget Sound Nearshore Mussel Monitoring Survey*. Washington Department of Fish and Wildlife, Olympia, WA. Report Number FPT 22-05.
- Lanksbury J., B. Lubliner, M. Langness, and J. West. 2017. *Stormwater Action Monitoring 2015/16 Mussel Monitoring Survey*. Washington Department of Fish and Wildlife, Olympia, WA. Report Number FPT 17-06.
- Pierce County. 2017. *Final Spanaway Lake Watershed-Scale Stormwater Management Plan. Pierce County*. Pierce County Surface Water Management. Tacoma, WA. August 2017.

Sargeant, D. and Ruffner, J. 2017. *Bacteria results for nearshore marine areas in Puget Sound, 2010-2015: Regional Stormwater Monitoring Program*. Washington State Department of Ecology. Olympia, WA. Publication No. 17-03-004.

Snohomish County. 2017. *Little Bear Creek Basin Plan*. Prepared for Snohomish County Public Works Surface Water Management by Northwest Hydraulic Consultants. August 2017.

Stillwater Sciences. 2016. *Lower Columbia Region Monitoring Implementation Plan*. Prepared by Stillwater Sciences, Portland, Oregon for Lower Columbia Fish Recovery Board. Longview, WA. April 2016.