

# Stormwater Management Action Planning Guidance

## Purpose and Context of this Document

This document provides guidance to jurisdictions implementing Stormwater Management Action Planning (SMAP) as required in the 2019 Phase I (S5.C.6.c) and Phase II Western Washington (S5.C.1.c) Municipal Stormwater Permits (the Permits). This document is organized according to the Permit language and articulates Ecology’s expectations for meeting the Permit requirements. This document is not meant to specify or restrict the approach that will be taken by every jurisdiction covered by the Permit.

There are many ways to successfully approach comprehensive watershed planning, and the specific steps articulated in 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 beneficial uses. SMAP may, and should, coordinate with other local planning efforts. Some jurisdictions may simply need to add a subset of the steps articulated in 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 expectations for meeting the Permit requirements.

To thoroughly understand Ecology’s expectations for meeting the Permit language, Permittees should be familiar with the following references:

- *Building Cities in the Rain* (BCitR, Commerce 2016), and
- The following subsections in the *Permit Fact Sheet* (Ecology 2018):
  - In Section 3.1: “Stormwater Pollution Sources”
  - In Section 3.2: “Phase I Counties’ Watershed Modeling and Planning” and “Stormwater Action Monitoring” and “Toxic Loading Study for Puget Sound” and “Phase I Stormwater Outfall Monitoring Data”
  - In Section 6.4: “Comprehensive Planning for Municipal Stormwater. Western WA only (Phase I S.5.C.6; WWA Phase II: S5.C.1.)”

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

- 1) How can we most strategically address existing stormwater problems?
- 2) How can we meet our future population and density targets while also accomplishing our water quality goals?

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.

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

## Receiving Water Basin Assessment

*S5.C.1.c.i Phase II Permit requirement: Permittees shall 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. Permittees may choose to meet this permit requirement individually, or as part of a regional effort. Where significant gaps in the state of knowledge exist, a plan and protocol should be developed to improve the assessment.*

This process 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 (S5.C.1.c.ii of the Phase II permit). Three steps are included in this process: (1) delineate basins and identify receiving waters, (2) assess receiving water conditions, and (3) assess relative conditions, contributions, and influence. The outcome of this step is a narrowed list of candidate basins that includes the information you need to support your prioritization process.

Phase I Counties are not required to complete the Receiving Water Basin Assessment.

### **Step 1: Delineate Basins and Identify Receiving Waters**

The first step in the Receiving Water Basin Assessment is delineation of 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 contributing areas outside of your jurisdiction. Jurisdictions may have compelling reasons to look at larger watersheds, but most streams more than third order are probably too large for SMAP projects to see or measure detectable improvements in the receiving waters. Use the scale that best meets your end goal. If the prioritization goal (see S5.C.1.c.ii) is expected to be toxics or nutrient loading reduction, then it may be appropriate to extend the upper limit of the watershed scale. Also, larger jurisdictions (*i.e.*, counties) may need to begin at a larger scale to practicably narrow the number of basins included in the assessment. Whatever the scale for the delineation, SMAP projects (S5.C.1.iii) will be ultimately be identified for a smaller catchment area or areas within the priority basin.

Ecology encourages Permittees to utilize the “assessment units” from the Puget Sound Watershed Characterization Project (<https://ecology.wa.gov/Water-Shorelines/Puget-Sound/Watershed-characterization-project>) or other existing GIS products to complete this step. The Watershed Characterization Project also provides “assessment units” for some areas in southwest WA. If requested ahead of time, Ecology anticipates providing watershed characterization “assessment units” for additional areas outside Puget Sound, particularly Aberdeen. 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:

1. Delineate all of the basin areas in your jurisdiction and identify the receiving water for each of those basins.
  - a. 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 contributes (small stream segments, wetlands, lakes, large rivers, Puget Sound) – whether or not the receiving water is inside your jurisdictional boundaries.
  - b. For Phase II counties, you are required to do this for your permit coverage area (Urbanized Areas and designated Urban Growth Areas), but for a more complete picture you are encouraged to consider all of the area in your jurisdiction in order to determine what are the best approaches to use your SMAP as part of your overall efforts at improving the receiving waters within and adjacent to the permit coverage areas.
2. For each receiving water other than direct MS4 discharges to Puget Sound, determine:
  - a. The total contributing watershed area for that receiving water, and
  - b. The percentage of that total area that lies inside your jurisdictional boundary.
3. 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 Map (<https://fortress.wa.gov/ecy/coastalatlus/tools/Map.aspx>) 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. Use this information to determine whether your outfall is in an active transport zone or if it is at or near the convergence of movement drift cells where sediment accumulates.

Some small jurisdictions may not have a large percentage of the total watershed area for any given receiving water, or a basin that is greater than one square mile in size. Identifying the percentage of each sub basin that lies within your jurisdiction can help you determine your MS4’s contribution to the receiving water and your potential influence on future conditions in each sub basin. In the following steps, you will determine whether your jurisdiction has a significant influence on each receiving water.

## 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. For each receiving water:

1. Identify the beneficial 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 conduct a detailed numeric assessment, and depending on the beneficial use it may be appropriate to focus on a single, specific indicator.
2. Then determine what information is available and assess the extent to which those conditions are being met, or if specific data are unavailable, the extent to which they are likely being met.
  - a. You may use regional information or data from nearby or similar receiving waters/basins if local data are not available.
3. Gather and evaluate landscape-scale data (population, land use and cover, zoning, road density, etc.) that help explain and predict receiving water conditions.
4. Assess the development pressure in the basin. How much growth is being directed toward this area? How is transportation planning likely to affect this basin? In addition to watershed scale implementation of Low Impact Development techniques:
  - a. Are headwaters, riparian areas, and other sensitive portions of the basin likely to be protected under current zoning and plans?

In the introduction to Chapter 4 of BCitR “Prioritizing Watersheds for Stormwater Investment” two steps are listed related to the receiving water assessment: reviewing any regional-scale information as an initial screen, and then assessing local, watershed-specific information. While a fully analyzed local water quality and biological indicator dataset would be most useful for a basin assessment for a receiving water with fish resources, such datasets do not exist for all high quality 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. If you are not satisfied with the level of information you currently have, you should include new data collection and analysis as an SMAP action for use in subsequent planning cycles.

The Watershed Characterization Project, Chapter 4.3 of BCitR “Prioritizing Watersheds for Stormwater Investment, Using Local Data”, BCitR Chapter 5 “Local Data Sources for Prioritization of Watersheds” and in particular Table 5.4 “Local Data for Prioritizing Flow Control, LID and Runoff Treatment”, articulate appropriate data and information to include in this step as well as possible data sources. Other useful regional datasets, assessments, and reports from other local jurisdictions, soil and water conservation districts, or state or federal resource and science agencies can be used. Some particularly helpful sources for this step include:

- The Watershed Characterization Project 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.

- The recently completed Stormwater Action Monitoring (SAM) regional assessments of water and sediment quality and biota conditions in Puget Sound urban nearshore areas and Puget lowland streams (Sargeant and Ruffner, 2017; Lanksbury *et al*, 2017; Black *et al*, 2018; De Gasperi *et al*, 2018) provide stormwater-management-relevant representations of what is known about these receiving waters across the full range of urbanized conditions that may be useful to many Permittees for completing these section. SAM identified conditions correlated to watershed characteristics including several measures of urbanization including watershed and riparian canopy and impervious surfaces.

Each of these studies, either in the report or in an accompanying technical memo, presents 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. When local receiving water monitoring data is absent, receiving water condition could be predicted using landscape, physical habitat, or disturbance information.

- Ecology’s Environmental Information Management (EIM) database contains water and sediment quality data from studies conducted across the state.
- 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 and other studies.
- 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 beneficial uses for four watersheds that are under pressure of development.

Ecology expects you to review these and other sources to find data for a nearby receiving water or one with similar watershed characteristics. In general, Ecology expects you to identify both the likely best and the likely worst receiving water conditions to which your MS4 contributes. Document how you are using all of these data sources to achieve this step, and what data would be useful to improve it. You might determine that it will be best in the long term for you to gather your own local data in advance of the next steps.

In addition to considering beneficial uses and existing (or inferred) water quality data, Ecology expects Permittees to 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). This will inform your SMAP process to identify a place to focus additional projects and activities to benefit those receiving waters in the long term.

The final product of this step will be a watershed inventory that organizes the data into a common format (in a spreadsheet, database, or GIS) for further analysis. For each receiving water, include information about current existing plans and planning efforts that might meet SMAP needs or be leveraged to address them. As new information becomes available, you should add it to the inventory.

Ecology does not intend for very small jurisdictions with little expected influence on any receiving waters to continue SMAP beyond this step. If this is the case, provide your completed watershed inventory with your annual report submittal.

### **Step 3: Assess Relative Conditions, Contributions, and Influence**

In this step you will narrow the number of basins to a candidate list to include in your prioritization process. Ecology does not expect Permittees to prioritize receiving waters with less than one square mile total watershed area.

Both BCitR and the Watershed Characterization Project provide approaches to identify relative conditions and therefore which receiving waters might be candidates for high priority basins for SMAP. You should document the approach and reasoning for the decisions you make in this step to justify and explain them in your public 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. Consider these categories as they apply to your basins and their receiving waters.

Having identified the basins most appropriate for stormwater investment, your next step should be to consider how much of the total contributing watershed area for each receiving water is under your control, and what opportunities likely exist for stormwater investments. Part of this step includes coordinating with your neighboring jurisdictions and learning about their perspectives, needs, and plans for the same receiving water. In particular, you should add to your watershed inventory specific information about your neighbors' existing plans and processes that can meet SMAP needs or be leveraged to address them.

Another important part of this step is evaluating the planned land uses in each basin and considering how those changes are likely to impact water quality, habitat, and biota in the receiving waters. Ecology expects each jurisdiction to anticipate the most likely condition of landscape scale indicators either under full build out conditions, or in about 20 years. Watersheds whose impervious surface areas are expected to increase by more than approximately 5% due to development pressure should remain candidates for the prioritization.

You may or may not want to delineate sub basins at this step and prepare sub basins for prioritization. The delineation into sub basins can be performed on a limited number of basins that are candidates for the first actions under the jurisdictional plan. This step may be performed after the jurisdiction is characterized and the basins are prioritized.

Before beginning the prioritization process you will articulate protection or restoration goals for each candidate basin. Consider the gap between what is known about the existing conditions and the goals, and determine where targeted stormwater investments are most likely to improve receiving water conditions.

This final step in the Receiving Water Basin Assessment should result in a manageable and credible list of candidate basins to begin the prioritization process. Provide your overall rationale for the final list of basins, the 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.

## Receiving Water Basin Prioritization

*S5.C.1.ii Phase II Permit requirement: Informed by the assessment of receiving waters developed above, Permittees shall develop a prioritization method and process to identify and rank areas where the receiving waters receive a benefit from implementation of stormwater facility retrofits and management actions to reduce pollutant loading and address hydrologic impacts from existing development.*

You will establish and conduct a process to prioritize among your candidate basins for stormwater investments in retrofit projects and enhanced management activities. You will then select a catchment area (approximately 400 to 600 acres) or a sub basin 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 the public in the prioritization process. Ecology expects you to include these steps in your process. Also reference the additional Permit language in S5.C.1.ii of the Phase II Permit for further steps and considerations.

Phase I Counties are not required to complete this prioritization step.

Ecology expects basins that drain to high quality receiving waters that are also under pressure of development to score high in the prioritization process. In general the following prioritization principles should be considered:

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 control improvements.
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. Certain receiving waters may be 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 that are 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 convergence zones (*i.e.*, bays, lagoons, inlets, depositional beaches) in Puget Sound. Shoreline drift cells classified as convergence zones are associated with sediment depositional areas and are higher priority than open shoreline drift cells with high energy dispersion of pollutants.

Counties may also want to consider the potential for annexation of any areas within the basin and describe how these areas are taken into account in the prioritization process. Coordination and collaboration with adjacent cities/counties will improve planning in these area and help to refine priorities. Ecology expects counties to select a receiving water that lies at least partially in their permit coverage area.

Ecology does not expect Permittees to prioritize basins for receiving waters with less than one square mile total watershed area.

Prior to finalizing your prioritization, for the top few candidate receiving waters, review the protection and restoration goals with all of the information gathered for Step 2 above “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 magnitude of flow control and treatment facilities. For this determination, reasonably predict likely hydrologic and pollutant loading impacts from your current and future land use combinations. Although pollutant loads across your jurisdiction will be highly variable scenario modeling will be helpful for this planning requirement. Ecology does not require that you conduct a detailed modeling exercise for SMAP. 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).

Following selection of the priority basin, your process should include selection of the catchment area(s) or sub basin(s) where additional stormwater investments will be made.

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, Ecology expects Permittees to 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 to ensure you are gathering feedback from your affected citizens and allowing time to include that feedback in your SMAP.

## Stormwater Management Action Plan

*Phase II S5.C.1.c.iii Permit requirement: Permittees must develop a Stormwater Management Action Plan (SMAP) for at least one high priority area (according to S5.C.1.c.ii) that identifies: Targeted or customized implementation of stormwater management actions; The need for stormwater facility retrofits; A proposed implementation schedule and budget sources; Short-term actions (i.e. actions to be accomplished within six years); Long-term actions (i.e. actions to be accomplished within seven to 20 years); and Process to adaptively manage the plan.*

*The Phase I S5.C.6.c Permit requirement requires that Counties produce a SMAP for the watershed-scale plans developed in the 2013 Permit. The SMAP must identify 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).*

One or more Permittees may work together on an SMAP; however, the scale of the SMAP is expected to be at the catchment area size (approximately 400 to 600 acres, or a sub basin scale that is appropriate for this level of planning in your jurisdiction). For Phase II jurisdictions, the catchment area or sub basin within your priority basin will have been discussed and selected during your prioritization process.

Ecology expects that basins draining to high quality receiving waters that are under pressure of development scored high in the prioritization process for many jurisdictions. For these priority basins, Ecology expects the SMAP investments to address protection of hydrologic function and include some combination of zoning/land use designations, conservation easements, and land acquisition.

On the other end of the spectrum, Ecology recognizes that the land areas of many Western Washington Permittees are already built out. For these priority basins, Ecology expects that the SMAP investments for priority basins in these jurisdictions will include stormwater retrofits, enhanced 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 recovery of stream habitat conditions.

Most Western Washington Permittees fall somewhere in between these two ends of the spectrum. Overall, Ecology expects a mix of protection and recovery projects and activities as appropriate to local conditions.

Counties: Phase I will complete an SMAP for at least one catchment area within the watershed that was modeled pursuant to the requirements of the 2013 Permit. Phase II should complete an SMAP for a catchment area that lies at least partially within the permit coverage area; however, the SMAP could be for a catchment that is adjacent to or near your coverage area boundary provided that your comprehensive plan includes documentation that the area is under pressure of future development and implementation benefits to a receiving water within permit coverage areas can be reasonably anticipated.

### Targeted or customized implementation of stormwater management actions

Ecology expects your SMAP to coordinate with other aspects of S5.C implementation in your jurisdiction. Pursuant to your receiving water assessment and prioritization, or Phase I County scenario modeling, your SMAP may include implementation of targeted or customized implementation of stormwater management actions related to Permit sections within S5.C including any or all of the following:

- 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.

The above elements of the S5.C programs represent areas of Permit flexibility that allows for effective implementation of the required programs.

### The need for stormwater facility retrofits

In this context, ‘stormwater facility retrofits’ includes projects that retrofit existing treatment and/or flow control facilities, or are new flow control or treatment facilities/BMPs that address impacts from existing development. Ecology expects your SMAP to include appropriate, strategic stormwater retrofits to address the receiving water goals.

Pursuant to your receiving water assessment and prioritization, or Phase I County scenario modeling, your SMAP will include retrofits intended to provide flow control and or treatment benefits that match your water quality goals for the receiving water. Due to varying levels of capacity and expertise, the necessary magnitude 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. Ecology expects your level of effort on this step to match your capacity and expertise.

Reduction of impervious surfaces provides significant cost savings in structural controls. One Phase I County watershed-scale planning effort scenario found that reducing the impervious surfaces by 25% reduces the cost of structural controls required to attain beneficial uses by more than 75% (King County 2018).

### Proposed implementation schedule and budget sources

Your SMAP will provide information about funding amounts needed to implement the plan as well as potential and likely sources of the funding. See the Permit Fact Sheet for more detail on expectations for short- and long-term actions. Ideally, you will prioritize investments and actions to achieve the quickest and surest possible preservation or restoration of beneficial uses. You should 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 the next two to three Permit cycles.

SMAP will include a proposed implementation schedule and the determination of the necessary budget to implement the activities. Be sure to include funding needs for facility design, land acquisition, permit fees, installation, O&M, staff and other resources to support enhanced S5.C activities beyond current SWMP implementation, monitoring and analysis, and administrative support.

Ecology has not yet established a minimum level of effort for SMAP implementation. Your SMAP budget should identify likely and potential funding sources. The effort for this Permit cycle should identify a realistic schedule and budget that accomplishes some level of effort in each of the short-term and long-term planning efforts.

## Short-term actions (*i.e.*, actions to be accomplished within six years)

This timeframe was selected for SMAP because it is identified in Growth Management Act (GMA) planning processes. 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)

This timeframe was selected for SMAP because it is identified in GMA planning processes. Long-term SMAP actions and projects are strategic rather than opportunistic, and should include an anticipated schedule for implementation that includes design and installation steps. This schedule is not intended to be a compliance goal, but an indication of the anticipated level of effort and an understanding of the effort required for detailed planning, and time for securing the necessary funding for successful implementation.

## Process to adaptively manage the plan

This process will document your progress toward meeting your goals and enable you to report your progress to the funders, the public, and Ecology. Your process to adaptively manage the SMAP should directly reflect the protection or restoration goals that were set for the receiving water during the basin assessment process (Phase II S5.C.1.i, Step 3) or, for Phase I Counties, as part of the findings of your scenario modeling.

Monitoring and SMAP adaptations are expected, particularly where a little data were initially available. The SMAP will describe a long term data collection and assessment approach in sufficient detail that it is clear your jurisdiction will know and be able to report whether the protection or restoration goals are being achieved. The types of data Ecology expects you to include in this process include: receiving water data, project/activity implementation data, and landscape scale indicator data. If baseline data do not already exist for your priority receiving water, your SMAP should plan to collect data to assess the current condition of appropriate indicators.

The adaptive management process should also include implementation tracking, and ongoing assessment of what portion of the planned projects and activities have taken place and how much of the catchment area or sub basin 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. The receiving water and SMAP goals are clear, and the activities are well matched to the areas in which they will take place. Permittees who have successfully completed the steps above will have confidence that their SMAP will make a substantial, positive difference in future receiving

water conditions and that it can be realistically implemented. Ideally, your SMAP will have broad public support as a result of the process you followed to create the plan(s).

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