Washington State Department of Transportation

Memorandum

June 3, 2025

TO: WSDOT Project Development Engineers
WSDOT Statewide Environmental Managers

FROM: Mark Gaines, State Design Engineer
Development Division Director

THROUGH: Ahmer Nizam, Environmental Services Office Director
Julie Heilman, State Hydraulic Engineer

SUBJECT: **Stormwater Design Requirements and Considerations for Endangered Species Act Programmatic Consultations**

Purpose

The purpose of this document is to clarify stormwater design requirements and considerations that occur when a project goes through the Endangered Species Act (ESA) programmatic consultation process.

Target Audience

Design Project Engineering Offices (PEO), project Biologist, and Region Hydraulic Engineer (RHE) with projects that are going through the ESA programmatic consultation process.

Roles and Responsibilities

The PEO, project Biologist, and RHE will use this document to show compliance with any applicable stormwater requirements and considerations as a result of navigating the ESA programmatic consultation process. Any resulting stormwater designs will be documented in the project's hydraulic report.

Questions

For questions or information on how to implement this document, please contact Jeff Dreier with HQ Environmental Services Office.

Attachment: Stormwater Design Requirements and Considerations for Endangered Species Act Programmatic Consultations

cc: Jeff Dreier – HQ ESO Fish and Wildlife Program Manager
Alex Nguyen – State Hydraulics Office Stormwater Manager
Jacob Tennant – Olympic Region Hydraulics Engineer
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Stormwater Design Requirements and Considerations for Endangered Species Act Programmatic Consultations 2025

WSDOT Headquarters Fish and Wildlife Program and Hydraulics are requiring WSDOT projects to use this document to comply with the Endangered Species Act (ESA) Programmatic Consultation stormwater design and considerations in order to:

- Create a clear and common understanding of ESA Programmatic Consultation stormwater design thresholds and stormwater requirements for project and support staff.
- Help projects understand the ESA Programmatic Consultation process so ESA considerations can be included early in project design.
- Help projects achieve a successful ESA Programmatic Consultation that is part of reliable project delivery.

ESA Programmatic Consultation is the process where WSDOT must consider project effects to listed threatened and endangered species. Consultation with the National Marine Fisheries Service and US Fish and Wildlife Service (the Services) is required for any WSDOT project which directs stormwater runoff to streams occupied by listed species. There are many activities on WSDOT projects that can potentially affect listed species and habitat. This document focuses on stormwater runoff treatment options to limit impacts on aquatic species and help projects navigate the ESA Programmatic Consultation process successfully.

There are two types of ESA consultations, Individual and Programmatic. Individual Consultations are generally used for larger projects with greater impact quantities and more complex activities. Individual Consultations can take several months to prepare submittal documents and up to a year to receive a biological opinion from the Services. Programmatic Consultations generally apply to smaller projects with specific activities and impacts that are predictable over time. Programmatic Consultations also have very conservative requirements for coverage because the consultation itself is evaluating the potential effects of hundreds of projects over many years. If a smaller project can meet the pre-determined mitigation strategies, then the Programmatic Consultation might be applied. The timeline for the Programmatic Consultations is shorter. During early coordination meetings, the Services conduct a consistency review to ensure the project meets all programmatic requirements. Depending on the availability of project details, the project biologist takes a few months to fill out a standard form. The Services take about 30 days to return the consistency finding after receiving the submittal. During scoping and preliminary design, work with the project biologist to determine if the project meets the requirements for coverage under the programmatic. The project biologist will need information on several types of terrestrial and aquatic impacts, not just stormwater. Other requirements, such as riparian vegetation removal limits and channel incision risk must be considered to determine if the project can receive programmatic coverage.

The ESA consultations do not dictate the requirements for achieving stormwater treatment, but instead require that WSDOT use the best available science to provide the best possible stormwater treatment that projects are capable of providing. The Highway Runoff Manual (HRM) is accepted by Ecology as equivalent to their Stormwater Management Manual for Western Washington and Stormwater Management Manual for Eastern Washington, which set the standards for stormwater treatment for Washington State using the best available science. WSDOT biologists will coordinate with region hydraulics to ensure that projects are providing the best possible BMPs and stormwater treatment to an effective level to protect species. The intent of this document is not to require that all of the rules of the HRM be applied to ESA requirements. The intent is for projects to provide BMPs designed using the best available science.

Steps for ESA Programmatic Consultation Stormwater Compliance

1. **Applicability** – Does the project add more than 500 square feet of net-new[1] pollution generating impervious surface (PGIS) considering the entire project area?
    a. Net-new PGIS includes all pavement and compacted gravel that vehicles can access minus any existing PGIS removed.[2]
    b. If the project does not exceed 500 sf of net-new PGIS then ESA stormwater requirements do not apply. Provide the biologist with verification of the net-new PGIS. This is typically provided in the Stormwater Design Checklist[3].
    c. If the project exceeds 500 sf of net-new PGIS threshold continue to Step 2.

2. **Determine required stormwater mitigation for the project to be eligible for the ESA Programmatic Consultation**
    a. **Less than 2 acres of new PGIS** – treat stormwater from all net-new and replaced[4] PGIS
    b. **2 to 5 acres of new PGIS** – treat stormwater from all net-new, replaced and existing PGIS within the project limits. If it is infeasible for the project to provide stormwater treatment for all existing PGIS within the project limits, the PEO will document infeasibility using the HRM Appendix 2A Engineering and Economic Feasibility Evaluation.

3. **Determine a mitigation strategy (Design-Bid-Build) –** The PEO works with Region Hydraulics and project biologist to navigate the below BMP selection strategy and construct BMPs to meet the ESA Programmatic Consultation requirements for stormwater.
    a. The goal is to prevent typical stormwater pollutants of concern from reaching the species and/or habitat of concern. Protect the receiving waterbody. Receiving waterbodies include streams, lakes, wetlands with listed species present or potentially present and other surface waters.
    b. **First priority** – Use Figure 5-1 of the HRM and follow the process in HRM Section 5-3.3 *Part III: Determine LID Feasibility and Select Low Impact Development (LID) BMPs*. Document selection using the LID Feasibility Checklist, which can be downloaded from the WSDOT Hydraulics & hydrology webpage. If infeasible to use a LID BMP, provide documentation as required in Step 5 (below) and move to the Second Priority.
    c. **Second priority** – Use enhanced treatment BMPs following HRM design guidelines to meet ESA Programmatic Consultation stormwater requirements that have not been taken care of from First Priority BMPs. Since metals and hydrocarbons are difficult to remove from stormwater, enhanced runoff treatment BMPS that meet HRM design guidelines shall be used. If it is infeasible to use enhanced treatment BMPs following HRM design guidelines, provide documentation as required in Step 5 (below) and move to the Third Priority. When discussing feasibility, please note if BMPs can be constructed without impacting other environmental resources (wetlands, trees, etc.). Coordinate with the project biologist and Region Hydraulic Engineer before moving to the Third Priority.
    d. **Third Priority –** Use basic vegetated filter strips and basic biofiltration swales following HRM BMP design guidelines to meet ESA Programmatic Consultation stormwater requirements that

[1] Net-new PGIS is not a term defined in the HRM. It is specific to ESA consultations. Net-new PGIS is the total area of new PGIS being added to the project minus the total area of existing PGIS being removed from the project. Please note full reversion (as defined in the HRM) is not needed for the PGIS removed.

[2] Converting a surface from gravel to pavement is not considered new PGIS under the programmatic consultation process. This differs from the HRM and only applies for determining ESA stormwater requirements.

[3] The biologist will provide this form. It can be required for both programmatic and individual ESA consultations.

[4] Replaced PGIS means those PGIS areas that are removed and replaced in kind by the project, or for roadway areas that are excavated to a depth at or below the top of the subgrade (pavement repair work excluded). The subgrade is taken to be the crushed surfacing directly below the pavement layer (ACP, PCCP, BST). If the removal and replacement of existing pavement does not go below the pavement layer, as with typical PCCP grinding, ACP planing, or "paver" projects, the new surfacing is not considered "replaced PGIS." Certain situations that do not include excavation of the existing roadway are also considered replaced PGIS. (See the Hydraulics & hydrology website for a discussion of these situations.)

have not been taken care of by First or Second Priority BMPs. Note that basic vegetated filter strips (VFS) and basic biofiltration swales in these instances do not have to meet full HRM BMP design standards. These BMPs shall follow all HRM design criteria other than the here-in specified. The VFS width may be less than the calculated, but with a minimum width of 3 ft. The bioswale length may be less than 100 ft but shall not be less than 25 ft. Add a 3-inch thick medium compost blanket to the basic VFS and basic bioswale unless not allowed by the HRM.

e. **Fourth priority** – If the PEO thinks that it is infeasible to provide stormwater treatment within the project limits to meet ESA Programmatic Consultation requirements and the project biologist and Region Hydraulic Engineer agree, the PEO can look for opportunities to provide stormwater treatment at other locations within the same watershed (offsite in-kind). Locations within the same watershed are those within the same Water Resource Inventory Area (WRIA). These locations must be of equivalent or better value for the following: endangered species habitat protection and AADT and pollutant loading. Start from the First Priority when determining stormwater treatment at the new location. Please note the offsite in-kind BMPs shall be constructed and operational by the project's operationally complete date. Also please note that for the onsite project locations that have new PGIS and do not receive runoff treatment (because of offsite in-kind stormwater treatment), the PEO shall make sure stormwater is prevented from directly entering protected habitat such as streams and maximize flow through vegetated areas.

f. **Verify the selected strategy** – Present the selected stormwater strategy and its components to the project biologist. During early coordination meetings with the Services, the biologist must show that the project will meet ESA Programmatic Consultation requirements. It is recommended to begin coordinating with the biologist as early as possible during project development. No matter the priority, if stormwater treatment is not applied directly next to protected habitat such as streams, the PEO shall maximize opportunities for surface runoff to flow through vegetated areas to help minimize stormwater directly entering protected habitat such as streams.

4. **Determine a mitigation strategy (Design-Build) –** The goal is to prevent typical stormwater pollutants of concern from reaching the species and/or habitat of concern. Protect the receiving waterbody. Receiving waterbodies include streams, lakes, wetlands with listed species present or potentially present and other surface waters. This process is divided into two parts.

   Part One - Developing the Conceptual Hydraulic Report is where the WSDOT PEO works with Region Hydraulics and project biologist to navigate the below BMP selection strategy and choose BMPs for the conceptual hydraulic report to meet the ESA Programmatic Consultation requirements for stormwater. The PEO works with Region Hydraulics to modify the RFP Section 2.14 Stormwater to make sure that ESA Programmatic Consultation requirements for stormwater are represented in the Design-Build contract.

   Part Two - Developing the Final Hydraulic Report is where the WSDOT PEO and Region Hydraulics provides quality verification to ensure the Design-Builder follows the ESA Programmatic Consultation requirements for stormwater while meeting any other stormwater requirements such as HRM.

   a. **Part One – Developing the Conceptual Hydraulic Report**
      i. **First priority** – Use Figure 5-1 of the HRM and follow the process in HRM Section 5-3.3 *Part III: Determine LID Feasibility and Select Low Impact Development (LID) BMPs*. Document selection using the LID Feasibility Checklist, which can be downloaded from the WSDOT Hydraulics & hydrology webpage. If infeasible to use a LID BMP, provide documentation as required in Step vi (below) and move to the Second Priority.
      ii. **Second priority** – Use enhanced treatment BMPs following HRM design guidelines to meet ESA Programmatic Consultation stormwater requirements that have not been taken care of from First Priority BMPs. Since metals and hydrocarbons are difficult to remove from stormwater, enhanced runoff treatment BMPS that meet HRM design guidelines

shall be used. If it is infeasible to use enhanced treatment BMPs following HRM design guidelines, provide documentation as required in Step vi (below) and move to the Third Priority. When discussing feasibility, please note if BMPs can be constructed without impacting other environmental resources (wetlands, trees, etc.). Coordinate with the project biologist and Region Hydraulic Engineer before moving to the Third Priority.

iii. **Third Priority –** Use basic vegetated filter strips and basic biofiltration swales following HRM BMP design guidelines to meet ESA Programmatic Consultation stormwater requirements that have not been taken care of by First or Second Priority BMPs. Note that basic vegetated filter strips (VFS) and basic biofiltration swales in these instances do not have to meet full HRM BMP design standards. These BMPs shall follow all HRM design criteria other than the here-in specified. The VFS width may be less than the calculated, but with a minimum width of 3 ft. The bioswale length may be less than 100 ft but shall not be less than 25 ft. Add a 3-inch thick medium compost blanket to the basic VFS and basic bioswale unless not allowed by the HRM.

iv. **Fourth priority** – If the PEO thinks that it is infeasible to provide stormwater treatment on the project to meet ESA Programmatic Consultation requirements and the project biologist and Region Hydraulic Engineer agree, the PEO can look for opportunities to provide stormwater treatment at other locations within the same watershed (offsite in-kind). Locations within the same watershed are those within the same Water Resource Inventory Area (WRIA). These locations must be of equivalent or better value for the following: endangered species habitat protection and AADT and pollutant loading. Start from the First Priority when determining stormwater treatment at the new location. Please note the offsite in-kind BMPs shall be constructed and operational by the project's operationally complete date. Also please note that for the onsite project locations that have new PGIS and do not receive runoff treatment (because of offsite in-kind stormwater treatment), the PEO shall make sure stormwater is prevented from directly entering protected habitat such as streams and maximize flow through vegetated areas.

v. **Verify the selected strategy** – Present the selected stormwater strategy and its components to the project biologist. During early coordination meetings with the Services, the biologist must show that the project will meet ESA Programmatic Consultation requirements. It is recommended to begin coordinating with the biologist as early as possible during project development. No matter the priority, if stormwater treatment is not applied directly next to protected habitat such as streams, then please note the stormwater design shall make sure stormwater is prevented from directly entering protected habitat such as streams and maximize flow through vegetated areas.

vi. **Represent the ESA Programmatic Consultation Requirements for Stormwater in the RFP 2.14 Stormwater.** The WSDOT PEO will work with the Region Hydraulics Engineer to represent the ESA Programmatic Consultation requirements in the RFP 2.14 Stormwater along with other stormwater requirements like the Hydraulics Manual (HM) or HRM (if applicable). Reference this document as a mandatory standard and specify in the RFP 2.14 that the Design-Builder shall follow the BMP selection strategy in Part Two (below) for picking and constructing stormwater BMPs to meet ESA Programmatic Consultation requirements. Document ESA stormwater BMPs and associated conveyance designs in the conceptual hydraulic report.

b. Part Two Developing the Intermediate and Final Hydraulic Reports

i. The WSDOT PEO and Region Hydraulics Engineer will provide quality verification to make sure ESA Programmatic Consultation requirements for stormwater are represented in the project's preliminary, intermediate, and final hydraulic report.

ii. The Design-Builder shall use the below BMP selection strategy when picking stormwater BMPs to meet ESA Programmatic Consultation requirements for stormwater.

1. **First priority** – Use Figure 5-1 of the HRM and follow the process in HRM Section 5-3.3 *Part III: Determine LID Feasibility and Select Low Impact*

Development (LID) BMPs. Document selection using the LID Feasibility Checklist, which can be downloaded from the WSDOT Hydraulics & hydrology webpage. If infeasible to use a LID BMP, provide documentation as required in Step 5 (below) and move to the Second Priority.

2. **Second priority** – Use enhanced treatment BMPs following HRM design guidelines to meet ESA Programmatic Consultation stormwater requirements that have not been taken care of from First Priority BMPs. Since metals and hydrocarbons are difficult to remove from stormwater, enhanced runoff treatment BMPS that meet HRM design guidelines shall be used. If it is infeasible to use enhanced treatment BMPs following HRM design guidelines, provide documentation as required in Step 5 (below) and move to the Third Priority. When discussing feasibility, please note if BMPs can be constructed without impacting other environmental resources (wetlands, trees, etc.). Coordinate with the project biologist and Region Hydraulic Engineer before moving to the Third Priority.
3. **Third Priority –** Use basic vegetated filter strips (VFSs) and basic biofiltration swales following HRM BMP design guidelines to meet ESA Programmatic Consultation stormwater requirements that have not been taken care of by First or Second Priority BMPs. Note that basic VFSs and basic biofiltration swales in these instances do not have to meet full HRM BMP design standards. These BMPs shall follow all HRM design criteria other than the here-in specified. The VFS width may be less than that calculated using HRM BMP design guidelines, but with a minimum width of 3 ft. The bioswale length may be less than 100 ft but shall not be less than 25 ft. Design-Builder shall add a 3-inch thick medium compost blanket to the basic VFS and basic bioswale unless not allowed by the HRM.
4. **Fourth priority** – If the Design-Builder believes that it is infeasible to provide stormwater treatment at the project location to meet any ESA Programmatic Consultation requirements for stormwater, the Design-Builder shall notify the WSDOT PEO. If the project biologist and Region Hydraulic Engineer agree with the Design-Builder's assessment of it being infeasible to construct stormwater BMPs to meet ESA Programmatic Consultation requirements for stormwater on the project, the Design-Builder may look for opportunities to provide stormwater treatment at other locations within the same watershed (offsite in-kind). Locations within the same watershed are those within the same Water Resource Inventory Area (WRIA). These locations must be of equivalent or better value for the following: endangered species habitat protection and AADT and pollutant loading. Start from the First Priority when determining stormwater treatment at the new location. Any off-site in-kind stormwater treatment BMPs and associated conveyance systems shall be constructed and operational by the project's operationally complete date. For the onsite project locations that have new PGIS and do not receive runoff treatment (because of offsite in-kind stormwater treatment), the Design-Builder shall make sure stormwater is prevented from directly entering protected habitat such as streams and maximize flow through vegetated areas. The Design-Builder shall document the BMP selection process used to pick stormwater BMPs to meet ESA Programmatic Consultation requirements for stormwater in the intermediate and final hydraulic reports.
5. **Verify the selected strategy** - Present the selected stormwater strategy and its components to the WSDOT Engineer to show how the project will meet ESA Programmatic Consultation stormwater requirements. If stormwater treatment is not applied directly next to protected habitat such as streams, the Design-Builder

shall make sure stormwater is prevented from directly entering protected habitat such as streams and maximize flow through vegetated areas.

5. Document the stormwater strategy and compliance

a. Check with the project biologist for specific forms that may need to be completed for the ESA consultation. The ESA Stormwater Design Checklist can be a critical source of information required by the biologist.

b. All ESA stormwater requirements, designs, assumptions, and conclusions shall be documented in the project's intermediate and final hydraulic reports.

   i. All BMPs for ESA shall be included in the project's Stormwater Design Documentation Spreadsheet (SDDS) and the Stormwater BMP Specifications (SWABS) database.

   ii. Design documentation for BMP design shall be included in the intermediate and final hydraulic report appendices.

   iii. For BMPs that use partial HRM BMP design standards, document both the design requirements to meet full treatment standards, the proposed reduced dimensions, and the prohibiting factors from reaching full treatment standards.

c. The Services occasionally may request a pollutant loading analysis for projects covered under the ESA Programmatic Consultation. Coordinate with the project biologist if a pollutant loading analysis is requested. The biologist conducts the analysis based on information in the ESA Stormwater Design Checklist and interprets the results for inclusion in the programmatic form or biological assessment.

d. The PEO shall document the final stormwater BMPs built to meet ESA Programmatic Consultation stormwater requirements in the project's final hydraulic report so those BMPs can be input into WSDOT's features inventory for identification, protection, and maintenance. Each BMP shall have its own BMP maintenance plan.