

NOAA/EPA DECISIONS ON CONDITIONS FOR THE WASHINGTON COASTAL NONPOINT PROGRAM

FOREWORD

The Coastal Nonpoint Pollution Control Program, set forth in Section 6217 of the Coastal Zone Act Reauthorization Amendments of 1990 (CZARA), 16 U.S.C. § 1455b, addresses nonpoint source pollution problems in coastal waters. Section 6217 directs states and territories with federally approved coastal zone management programs to develop and implement management measures for nonpoint pollution control to restore and protect coastal waters (coastal nonpoint programs).

This document provides the bases for the proposed determination by the National Oceanic and Atmospheric Administration (NOAA) and the United States Environmental Protection Agency (EPA) (collectively, Federal agencies) that Washington has met the conditions that the Federal agencies had identified in the earlier approval of Washington's coastal nonpoint program on June 30, 1998, pursuant to CZARA (1998 findings). In this document, the agencies describe how the State program modifications satisfy each of the conditions identified in the 1998 findings.

PROPOSED DECISION

The Federal agencies issued findings on June 30, 1998, approving Washington's coastal nonpoint program submission subject to conditions. Those findings are available at <https://coast.noaa.gov/data/czm/pollutioncontrol/media/findwa.txt>. Since that time, Washington has undertaken a number of actions to address each of the identified conditions. Based on those actions and the materials provided by the State that document how its program meets each condition, NOAA and EPA propose to find that Washington has satisfied all conditions on its coastal nonpoint program.

INTRODUCTION

CZARA directed EPA to develop technical guidance to assist states and tribes in designing coastal nonpoint programs. On January 19, 1993, EPA issued that guidance in the document titled *Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters*, 840-B92-002 (January 1993), which addresses five major source categories of nonpoint pollution: (1) urban runoff, (2) agriculture runoff, (3) forestry runoff, (4) marinas and recreational boating, and (5) hydromodification. The guidance also addresses nonpoint source pollution issues associated with the loss or damage to wetlands and riparian areas. The guidance is commonly referred to as the 6217(g) guidance because the statutory direction to EPA appears in CZARA Section 6217(g). Although the statute refers to this document as "guidance," each state Coastal Nonpoint Pollution Control Program "shall provide for the implementation, at a minimum, of management measures in conformity with [this] guidance" (16 U.S. Code § 1455b(b)). The 6217(g) guidance does not prescribe how a state must address each management

measure, but rather provides substantive, qualitative descriptions of management measures. NOAA and EPA assess program submissions to determine continuing eligibility for full federal funding (under the CZMA and CWA, respectively) using the descriptions of the management measures in the 6217(g) guidance, but the management measures in that document are not otherwise enforceable.

This document is organized following the same structure that was used for the Federal agencies' 1998 findings to support approval of Washington's program, with conditions, grouping together the conditions related to each major nonpoint source category or subcategory, as well as conditions related to Washington's coastal nonpoint management area boundary and strategy for monitoring. The structure for each condition follows a standard format. Each original finding and condition identified in 1998 is repeated, followed by the Federal agencies' proposed rationale for how the State has met each condition. A list of acronyms is included at the end of this document.

For further understanding of terms in this document, please refer to the following:¹

- Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters (EPA, January 1993);
- Coastal Nonpoint Pollution Control Program: Program Development and Approval Guidance (NOAA/EPA, January 1993);
- Flexibility for State Coastal Nonpoint Programs (NOAA/EPA, March 1995);
- Final Administrative Changes to the Coastal Nonpoint Pollution Control Program Guidance for Section 6217 of the Coastal Zone Act Reauthorization Amendments of 1990 (CZARA) (NOAA/EPA, October 1998) ("Final Administrative Changes"); and
- Policy Clarification on Overlap of 6217 Coastal Nonpoint Programs with Phase I and II Storm Water Regulations (NOAA/EPA, December 2002).

The Federal agencies rely on, but do not repeat here except as relevant to the proposed findings, extensive information that the State included in various submittals to support its coastal nonpoint program. This and further information are contained in the administrative record for this proposed approval decision and is available upon request at the following locations:

U.S. EPA Headquarters, Office of Water
Nonpoint Source Management Branch
1200 Pennsylvania Ave., NW (4503-T)
Washington, DC 20460
Contact: Don Waye (202/566-1170)

NOAA, Office for Coastal Management
SSMC-4, N/OCM6
1305 East-West Highway
Silver Spring, MD 20910

¹ All of the guidance documents for the Coastal Nonpoint Program are available online at: <https://coast.noaa.gov/czm/pollutioncontrol/>.

Contact: Allison Castellan (240/533-0799)

U.S. EPA Region 10, Washington Operations Office
300 Desmond Drive, SE, Suite 102
Lacey, WA 98503
Contact: Michelle Wilcox (360/753-9469)

ADDITIONAL INFORMATION ABOUT WASHINGTON'S PROGRAM

In the years following the June 30, 1998, conditional approval of Washington's Coastal Nonpoint Program, the State has worked to address the requisite conditions. In 2012, NOAA and EPA prepared a notice inviting comment on whether Washington had satisfied the conditions placed on its coastal nonpoint program in 1998. The notice, however, was not published at that time.

In 2011, Western Washington Treaty Tribes released a Treaty Rights at Risk white paper raising concerns about the role of the federal government in adequately protecting salmon, salmon habitat, and water quality.² The tribes identified NOAA's and EPA's authorities with respect to the Coastal Nonpoint Program in Washington as an area of concern where the federal agencies should do more to protect salmon and treaty rights.

NOAA and EPA sent a letter to the Washington Department of Ecology (Ecology) in April 2013 informing the State that the federal agencies were deferring further action on whether Washington had satisfied the conditions placed on its coastal nonpoint program so that NOAA and EPA could further explore how the many federal programs and authorities identified in the 2011 white paper could be leveraged to improve water quality and conserve habitat and salmon. In the April 2013 letter, the federal agencies recommended actions to the State to improve how the federal government and the State managed polluted runoff and habitat including:

- Ensure the State's process for identifying, revising and implementing additional management measures through the coastal nonpoint program responds to tribal concerns about sustainable salmon fisheries, and supports all salmonid life stages;
- Ensure the State's update to its Nonpoint Source (NPS) Management Plan under Section 319 of the Clean Water Act includes necessary protections for salmon and salmon habitat; and
- Condition federal Clean Water Act Section 319 NPS and Puget Sound grant monies used for riparian protection to follow NOAA National Marine Fisheries Service's (NMFS) guidance on buffer widths.³

NOAA and EPA continue to work with the tribes and the State to further protect tribal treaty

² Western Washington Treaty Tribes. *Treaty Rights at Risk: Ongoing Habitat Loss, the Decline of the Salmon Resource and Recommendations for Change*. July 14, 2011. Accessed 5/19/2019. <http://nwifc.org/downloads/treaty-rights-at-risk/>

³ National Marine Fisheries Service. *Interim Riparian Buffer Recommendations for Streams in Puget Sound Agricultural Landscapes*, November 2012.

rights and to make improvements to salmon habitat and water quality in Washington. NOAA and EPA, however, acknowledge that Washington has made changes to its water quality programs since 2013 that respond to the recommendations NOAA and EPA made in 2013 and reflect the State's commitment to improve water quality and to protect salmon and habitat. Therefore, NOAA and EPA are resuming the decision-making process regarding the conditions on approval of Washington's Coastal Nonpoint Program. Some noteworthy improvements in how Washington addressed coastal nonpoint source pollution and the specific concerns NOAA and EPA raised in their 2013 letter to Ecology include:

- Washington has demonstrated it has processes in place for identifying and revising additional management measures under its coastal nonpoint program that consider tribal concerns regarding salmon, such as better alignment between the State's nonpoint and TMDL programs to achieve more implementation on the ground and placing a high priority on implementing BMP projects intended to reduce temperature and/or fecal coliform impairments to address impacts on shellfish and salmon.
- In part due to tribal concerns regarding polluted runoff from agriculture, Ecology is developing the Voluntary Clean Water Guidance, a technical resource to help the agricultural community implement practices in a way that ensures protection of water quality.
- The State updated its Nonpoint Source Management Plan in 2015 to include: better articulation regarding the State's regulatory authorities; strategies for addressing nonpoint source pollution with a focus on implementing BMPs to ensure compliance with water quality standards; and using more proactive approaches to finding and addressing pollution sources.⁴
- Ecology revised its combined Water Quality Financial Assistance Funding Guidelines to ensure that all riparian protection projects funded would be consistent with the National Marine Fisheries riparian buffer guidance, effective starting July 1, 2014 (state fiscal year 2015).⁵

The Coastal Nonpoint Program is one of a number of federal "tools" in the toolbox that helps to improve water quality, protect coastal habitat, promote sustainable salmon fisheries and support all salmonid life stages. This program, used in concert with other approaches at the federal and state level, can help to reduce polluted runoff and protect salmon.

I. BOUNDARY

1998 FINDING: Washington's proposed coastal nonpoint management area excludes existing land and water uses that reasonably can be expected to have a significant impact on the coastal waters of the State.

⁴ Washington Department of Ecology. Washington's Water Quality Management Plan to Control Nonpoint Sources of Pollution. July 2015. Publication No. 15-10-015. Accessed 6/9/2019.

<https://fortress.wa.gov/ecy/publications/SummaryPages/1510015.html>

⁵ Washington Department of Ecology. Funding Guidelines State Fiscal Year 2020 Water Quality Financial Assistance. Publication 18-10-030. July 2018. Accessed 5/8/2019.

<https://fortress.wa.gov/ecy/publications/documents/1810030.pdf>

1998 CONDITION: Within one year, the Washington Department of Ecology, U.S Environmental Protection Agency (EPA), National Oceanic and Atmospheric Administration (NOAA), and other relevant State, local, and Federal agencies will participate in a cooperative process to review relevant information and to determine an appropriate management area boundary consistent with established national guidance for the 6217 program.

PROPOSED DECISION: Washington has satisfied this condition.

RATIONALE: Washington defines coastal nonpoint areas as everything within Watershed Resource Inventory Areas (WRIAs) 1-25. This includes the 15 coastal counties comprising Washington's federally approved coastal zone (Clallam, Grays Harbor, Island, Jefferson, King, Kitsap, Mason, Pacific, Pierce, San Juan, Skagit, Snohomish, Thurston, Wahkiakum, and Whatcom) as well as small portions of Cowlitz and Lewis Counties. NOAA and EPA find that with the partial inclusion of Cowlitz and Lewis Counties, the Washington final management area meets the boundary condition.

II. AGRICULTURE

1998 FINDING: Washington's program does not include management measures in conformity with the 6217(g) guidance. The State has identified a back-up enforceable authority but has not yet demonstrated the ability of the authority to ensure implementation of the agriculture management measures throughout the coastal nonpoint management area.

1998 CONDITION: Within two years, Washington will include in its program agriculture management measures in conformity with the 6217(g) guidance. Within one year, Washington will develop a strategy (in accordance with Section XIII, page 14, of NOAA and EPA's 1998 findings for Washington's Coastal Nonpoint Program) to implement the agricultural management measures throughout the coastal nonpoint management area.

PROPOSED DECISION: Washington has satisfied this condition.

RATIONALE: Washington implements the agriculture management measures primarily through a mix of regulatory and voluntary efforts, such as: the Dairy Nutrient Management Act, the Pesticides Control Act, Pesticide Regulations, the National Pollutant Discharge Elimination System (NPDES)/State waste discharge permits for concentrated animal feeding operations, and the Washington State Department of Ecology's (Ecology) Agricultural Nonpoint Program; as well as technical and financial assistance provided through Soil and Water Conservation Districts (conservation districts), Ecology, Washington Agriculture Extension, and others. Washington has developed a strategy to implement the agricultural management measures, including demonstrating how the State Water Pollution Control Act provides adequate back-up authority for the voluntary elements to ensure implementation of the 6217(g) agriculture management measures, as needed.

While specific authorities and programs the State uses to meet each of the agriculture management measures are discussed in Washington’s Water Quality Management Plan to Control Nonpoint Sources of Pollution⁶ and further below, in general the State employs a multi-pronged approach to control polluted runoff from agricultural activities and address the 6217(g) management measures for agriculture. This approach involves targeted technical and financial assistance and compliance-based strategies. Ecology, as the state regulatory agency charged with protecting the quality of Washington State’s water, conducts watershed assessments to identify priority nonpoint pollution sources from agriculture activities. The factors Ecology uses to identify watersheds to assess include the extent of identified pollution or impairments, the proximity to critical habitats, such as shellfish beds, and willingness of community(ies) within the watershed to engage in water clean-up efforts. Once watersheds are identified, Ecology field staff then work with local partners, such as conservation districts, to develop a proactive outreach strategy to address priority problem areas with focused technical and financial assistance to encourage farmers to adopt best management practices (BMPs). Ecology focuses on about 10 watersheds each year within the coastal nonpoint management area.

If voluntary outreach efforts are not successful in addressing the identified area of concern, Ecology has authority under the Water Pollution Control Act (Chapter 90.48 RCW) to take enforcement action. RCW 90.48.080 prohibits any discharge, including agricultural discharge, to state waters except as authorized by permit. Companion language in RCW 90.48.120 authorizes Ecology to issue orders if there is a violation or if someone creates a “substantial potential” to violate provisions of the law. Compliance actions can be triggered by a watershed evaluation (described above), a referral from another agency or local government, complaint, monitoring result, or other field investigation. To respond to complaints, Ecology employs a similar approach of technical and financial assistance, followed by any necessary enforcement action.⁷

When working with landowners, Ecology considers, among other guidance documents, its funding guidelines and the Natural Resource Conservation Service’s (NRCS) *Field Operating Technical Guide* (FOTG) to provide a starting point for identifying individual BMPs or suites of BMPs that could achieve compliance with the State’s water quality standards and CZARA 6217(g) management measures on a case-by-case basis. Ecology is working with an advisory group to develop *Voluntary Clean Water Guidance for Agriculture*, a stand-alone compendium that will help farmers implement suites of practices that, used together, are intended to be more effective to protect water quality. This guidance also will increase the transparency of Ecology’s expectations for implementation of agriculture BMPs. The guidance development process involves inventorying existing BMPs, refining those BMPs if needed, and assembling the BMPs

⁶ Washington Department of Ecology. Washington’s Water Quality Management Plan to Control Nonpoint Sources of Pollution. July 2015. Publication No. 15-10-015, Accessed 6/9/2019.

<https://fortress.wa.gov/ecy/publications/SummaryPages/1510015.html>

⁷ See Ecology’s publication, *Clean Water and Livestock Operations: Assessing Risk to Water Quality* (Publication Number 15-10-020, June 2015) for an example of how Ecology assesses water quality risks and employs technical assistance and enforcement, when needed. Accessed 5/8/2019.

<https://fortress.wa.gov/ecy/publications/documents/1510020.pdf>.

into combinations that enhance the reduction of the various sources of pollutants for a particular land use at the parcel level. Existing BMPs are being reviewed in phases, with the first phase evaluating tillage and residue management practices, which was published in draft in March 2020.^{8,9} The second phase will evaluate animal forage and pasture management, crop systems, riparian protections, and animal confinement practices, with an anticipated completion date at the end of 2020. The full compendium is scheduled for completion by mid-2023.

Erosion and Sediment Control

To demonstrate consistency with the 6217(g) erosion and sediment control management measure, states either: (1) apply the erosion component of a Conservation Management System as defined in the FOTG to minimize the delivery of sediment from agricultural lands to surface waters; or (2) design and install a combination of management and physical practices to settle the settleable solids and pollutants in runoff for storms up to and including a 10-year, 24-hour frequency. Washington uses a combination of riparian buffers and NRCS FOTGs designed to prevent and reduce erosion and sediment-laden runoff from the site as a baseline for addressing the erosion and sediment control management measure.

Through its Water Quality Financial Assistance Program (WQFAP), Ecology provides funding to farmers to implement direct seed systems and riparian buffers. Direct seed systems minimize soil disturbance and the possibility for erosion when planting crops. Riparian buffers filter sediment from runoff before they enter streams and provide other ecosystem benefits, such as shade. Ecology adopted the National Marine Fisheries Service's riparian buffer width recommendations¹⁰ as part of its funding guidelines for the Water Quality Financial Assistance Program.¹¹ These buffer widths are designed to ensure buffer projects funded through the WQFAP protect salmon and salmon habitat. Compliance with these guidelines is an eligibility requirement for receiving grant funds.

Facility Wastewater and Runoff from Confined Animal Facility Management

The 6217(g) management measures for large and small confined animal facilities are applicable to confined animal facilities that meet certain thresholds for the number of confined animals as described in the 6217(g) guidance.¹² The management measures are not applicable to confined

⁸ Rau, Ben. Communication to Ecology's Agriculture and Water Quality Advisory Committee on March 21, 2019. Accessed 6/12/2019. <https://ecology.wa.gov/About-us/Our-role-in-the-community/Partnerships-committees/Agriculture-and-Water-Quality-Advisory-Committee>

⁹ Lizon, Patrick. WA State Department of Ecology's Water Quality Program. *Year 2018 Report on Activities to Implement: Washington State's Water Quality Plan to Control Nonpoint Source Pollution*. Submitted to EPA April 2019.

¹⁰ National Marine Fisheries Service. *Interim Riparian Buffer Recommendations for Streams in Puget Sound Agricultural Landscapes*. November 2012.

¹¹ Washington Department of Ecology. *Funding Guidelines State Fiscal Year 2020 Water Quality Financial Assistance*. Publication 18-10-030. July 2018. Accessed 5/8/2019. <https://fortress.wa.gov/ecy/publications/documents/1810030.pdf>

¹² The 6217(g) guidance describes a confined animal facility within the scope of the relevant management measure as the following: "a lot or facility (other than an aquatic animal production facility) where the following conditions

animal facilities covered by National Pollutant Discharge and Elimination System (NPDES) permits.

Washington relies on several core programs including its Concentrated Animal Feeding Operation State Waste Discharge General Permit administered jointly by Ecology and the Washington State Department of Agriculture (WSDA), the Dairy Nutrient Management Program administered by WSDA, and Ecology's Nonpoint Source Program. Technical and financial assistance efforts by conservation districts and Ecology further support implementation of these management measures.

In Washington, all animal facilities designated as concentrated animal feeding operations (CAFOs) must be covered by combined Concentrated Animal Feeding Operation NPDES Permits and State Waste Discharge General Permits¹³ (combined permits) when they discharge to surface waters of the state. The State considers animal operations that contain the following number of confined animals to be CAFOs that must receive a NPDES permit:

- Dairy, 200 or more animals;
- Other cattle (including beef), 300 or more animals;
- Horses, 150 or more animals;
- Chickens (broilers and layers with the use of a liquid manure system), 9000 or more animals;
- Chickens (other than layers with a dry waste system), 37,500 or more animals;
- Chickens (layers with a dry waste system), 25,000 or more animals;
- Turkeys, 16,500 or more animals; or
- Swine, 750 or more animals.

A confined animal operation with fewer animals than the CAFO thresholds is considered a "small" CAFO by the State of Washington. Some "small" CAFOs are also required to obtain combined NPDES and state waste discharge permit coverage if Ecology designates the operation as a significant contributor to State waters.

The State's coastal nonpoint management program therefore does not apply the 6217(g) management measures for facility wastewater and runoff from confined animal facility management associated with these combined CAFO permits because the operations are covered

are met: (1) animals (other than aquatic animals) have been, are, or will be stabled or confined and fed or maintained for a total of 45 days or more in any 12-month period, and (2) crops, vegetation forage growth, or post-harvest residues are not sustained in the normal growing season over any portion of the lot or facility." The 6217(g) guidance describes management measures for confined animal facilities that house a certain number of animals (which vary depending on species). More information on confined animal facilities can be found on pgs. 2-33 and 2-34 of the 6217(g) guidance.

¹³ Washington Department of Ecology. Concentrated Animal Feeding Operation National Pollutant Discharge Elimination System and State Waste Discharge General Permit. Issuance Date: January 18, 2017, Expiration Date: March 2, 2022. Accessed 5/15/2019. <https://ecology.wa.gov/DOE/files/c8/c8a7577c-059a-4816-84ef-143e8faa5134.pdf>

by NPDES permits. In a CZARA guidance document explaining NOAA and EPA intentions in review and approval of state program submissions, the federal agencies clarified that a state program's management measures need not apply to any source of polluted runoff, such as a concentrated animal feeding operation, that is regulated as a point source through a NPDES permit.¹⁴

All CAFOs, including "small" CAFOs that are designated as a significant contributor, are required to obtain authorization under a state-only (non-NPDES) Concentrated Animal Feeding Operations State Waste Discharge General Permit,¹⁵ if there is a discharge to groundwater. The state-only permit includes provisions applicable to wastewater and runoff added to groundwater. No discharge to surface water is permitted through this permit (Chapter 90.48.080 RCW). Violation of a state-only permit may subject the holder to criminal and civil penalties under the State's Water Pollution Control Act (Chapter 90.48.140-.144. RCW).

Outside of the NPDES and State Waste Discharge General Permit, the Dairy Nutrient Management Program, administered by WSDA, regulates use and management of manure at cow dairy farms, including confined cow dairy farms, to protect the State's surface and ground waters. The Dairy Nutrient Management Act (Chapter 90.64 RCW) requires all licensed dairy producers to register with the program and undergo routine WSDA inspections. There are fewer than 240 licensed dairies in the counties that are part of Washington's coastal nonpoint management area, with the highest concentration in Whatcom County.

Under the Dairy Nutrient Management Act, all licensed dairy producers must develop nutrient management plans (discussed further in the Nutrient Management section below) and operate in ways that protect against waste discharges to waters of the State. As part of their nutrient management plans, dairies must inventory and evaluate cattle confinement areas and waste collection, handling and storage facilities to identify potential pollution sources and determine water quality protection needs.^{16,17} Operational practices must meet the standards, specifications and methods described in the NRCS FOTGs and NRCS Agriculture Waste Management Field Handbook. NRCS FOTGs for Waste Storage Facilities (313) and Waste Treatment Lagoons (359) are consistent with the 6217(g) guidance for the confined animal facility management

¹⁴ See NOAA and EPA, *Coastal Nonpoint Pollution Control Program: Program Development and Approval Guidance* (Appendix B: National Pollutant Discharge Elimination System). January 1993. Accessed 5/15/2019. <https://coast.noaa.gov/data/czm/pollutioncontrol/media/6217proguidance.pdf>

¹⁵ Washington Department of Ecology. Concentrated Animal Feeding Operation State Waste Discharge General Permit. Issuance Date: January 18, 2017, Expiration Date: March 2, 2022. Accessed 5/15/2019. <https://ecology.wa.gov/DOE/files/45/453aff0c-051e-4129-982e-ca59660c2db3.pdf>

¹⁶ Washington Department of Agriculture. Minimum Elements of a Dairy Nutrient Management Plan. Updated June 2017. Accessed 8/9/2019. <https://agr.wa.gov/departments/land-and-water/livestock-nutrients/minimum-elements-of-a-dairy-nmp>.

¹⁷ Washington State Conservation Commission. Checklist for Conservation District Approval of Dairy Nutrient Management Plan. January 2013. Accessed 5/15/2019. https://scc.wa.gov/wp-content/uploads/2015/11/DNMPApproval_Sheet-Jan-2013-1.docx

measures.¹⁸ WSDA inspects all licensed dairies on a rotating basis every 18-22 months. During the inspections, WSDA looks for evidence of water quality violations, identifies actions to correct actual or imminent discharges, reviews records, monitors implementation of the management plans, and offers regulatory technical assistance. If at any time a dairy nutrient management plan fails to prevent the discharge of pollutants to waters of the state, the plan is required to be updated (Chapter 90.64.026(1)).

Ecology's Nonpoint Source Program also plays an important role in addressing the confined animal facility management measures by providing technical assistance and taking enforcement action, when needed, to prevent manure and other wastes from being discharged to surface or groundwater. Ecology's Water Quality Financial Assistance Program provides financial support for a variety of livestock feeding BMPs, such as establishing heavy use protection areas and installing waste storage facilities to collect and contain solids and reduce contaminated runoff, consistent with the 6217(g) guidance.¹⁹

Beyond these core programs, Washington provides technical and financial assistance to support the adoption of BMPs for controlling facility wastewater and runoff consistent with the 6217(g) guidance. Conservation districts provide technical and financial assistance to help farmers install BMPs for confined animal facilities that comply with NRCS FOTG standards for controlling animal facility wastewater and runoff. The FOTG standards for Waste Storage Facilities (313) and Waste Treatment Lagoons (359) require accommodation of the 25-year, 24-hour storm consistent with the 6217(g) guidance.

Nutrient Management

Washington meets the nutrient management measure through direct regulatory programs such as its CAFO permits, Dairy Nutrient Management Act, and Water Pollution Control Act as well as through voluntary efforts such as technical and financial assistance offered through Ecology's Nonpoint Source Program, the NRCS FOTG for Nutrient Management (590), and technical and financial assistance programs provided through Washington State University Extension and the conservation districts.

Both the State CAFO permit and the combined NPDES and State CAFO permit (discussed in more detail in the Confined Animal Facility Management Section above), require permittees to develop and implement Manure Pollution Prevention Plans (MPPPs). The required MPPP includes site maps showing the location of animal facilities, fields, soils, and sensitive features (such as waterbodies), and describes how the facility addresses the permit's required performance objectives for pollution prevention. These performance objectives include conducting routine manure and soil nutrient analyses, developing a yearly field nutrient budget that considers all sources of nutrients, and applying manure in accordance with that budget, the

¹⁸ Natural Resource Conservation Service. Field Operating Technical Guide. Standard 313 Waste Storage Facilities (published 10/7/2017) and Standard 359 Waste Treatment Lagoons (published 11/20/2018).

¹⁹ Washington Department of Ecology. Funding Guidelines State Fiscal Year 2020 Water Quality Financial Assistance. Publication 18-10-030. July 2018. Accessed 5/15/2019.
<https://fortress.wa.gov/ecy/publications/documents/1810030.pdf>

crop(s) to be planted and expected crop yields. These performance objectives are consistent with the 6217(g) nutrient management measure.

In addition to the CAFO permit requirements, the Dairy Nutrient Management Act (Chapter 90.64 RCW) also requires all licensed cow dairies, even those that have not been designated as CAFOs, to develop and implement detailed nutrient management plans and undergo routine inspections. WSDA administers the Dairy Nutrient Management Act. WSDA and Ecology signed a Memorandum of Understanding, most recently renewed in 2011, defining each agency's role in protecting water quality from dairy runoff.²⁰ Among the State's requirements for a dairy nutrient management plan are: a site map or aerial photograph that shows the location of crop fields and all areas used for dairy activities; realistic estimates of crop yields; a monthly nutrient application schedule based on a nutrient balance sheet that considers the nutrient value of manure and the nutrient needs of crops; an inventory and evaluation of manure and wastewater collection systems; and an offsite management agreement if manure will be distributed off site. In addition, the Dairy Nutrient Management Act notes that all standard agricultural practices included in the nutrient management plans must meet the standards and design specifications described in the NRCS FOTGs.

Outside of the application of manure nutrients, Washington promotes nutrient management planning consistent with the 6217(g) management measure through the NRCS FOTG 590 (Nutrient Management).²¹ The FOTG recommends that a nutrient management plan be developed and regularly updated when nutrients (manure or chemical) are applied to fields. Soil tests are to be conducted regularly to inform nutrient management planning. The FOTG specifies a variety of elements for an effective nutrient management plan including: aerial site photographs or site maps; site soil survey; location of sensitive areas, including waterbodies; realistic yield expectations; an evaluation of field limitations, including soil permeability, frequency of flooding, and depth of the water table; a listing and quantification of all nutrient sources for the site; and the timing and application rates for all nutrients based on the crops planted, soil tests, and realistic yield goals; and an NRCS-approved nutrient risk assessment that factors in sensitive environmental features such as waterways and sinkholes, weather conditions, topography, soil erodibility, and other factors. The FOTG also includes operation and maintenance practices for nutrient management, such as the proper calibration and operation of nutrient application equipment.

The conservation districts provide technical and financial assistance to develop nutrient management plans that follow FOTG 590 guidance. Several state and federal grant programs

²⁰ Memorandum of Understanding between the Washington State Department of Agriculture and the Washington State Department of Ecology Related to the State of Washington's Efforts to Protect Water Quality Related to Livestock Under the Authority of Chapter 90.48 RCW, Water Pollution Control Act, and Chapter 90.64 RCW, Dairy Nutrient Management Act. Signed 11/8/2011 and 11/15/2011. Accessed 5/15/2019.
<https://agr.wa.gov/FP/Pubs/docs/MOUAgricultureEcology2011Final.pdf>

²¹ Natural Resource Conservation Service. Field Operating Technical Guide. Standard 590, Nutrient Management. Published 2/18/2014.

also provide funding to farmers to develop nutrient management plans. Ecology's Water Quality Financial Assistance Program and the State Conservation Commission's Natural Resource Investment and Shellfish grants have awarded grants to the conservation districts to help farmers develop nutrient management plans.^{22,23,24} In addition, farmers are also able to receive cost-share funding through NRCS's Environmental Quality Incentives Program (EQIP) for nutrient management planning.²⁵ To be eligible for these EQIP funds, the farmer must develop and commit to implement a comprehensive nutrient management plan that complies with the FOTG standard.

The Washington State University Agriculture Extension also offers a variety of technical assistance to help farmers develop and implement nutrient management plans. For example, the extension program has issued technical guides on how to test nutrient levels in soil and manure, develop a nutrient budget, apply manure and other organic fertilizers to crops, and carry out other aspects of nutrient planning.

Finally, Ecology's Nonpoint Source Program is also an important component to Washington's strategy for meeting the nutrient management measures throughout the coastal nonpoint management area. Ecology provides directed technical assistance and takes enforcement action, when needed, to prevent nonpoint source pollution from nutrient application.

Pesticide Management

Pesticide distribution, use, and application in Washington are regulated through the Washington Pesticide Control Act (WPCA) (Chapter 15.58 RCW), the Washington Pesticide Application Act (WPAA) (Chapter 17.21 RCW), and Pesticide Regulations (WAC 16-228). The Pesticide Regulations provide that "no person shall pollute streams, lakes or other water supplies in pesticide loading, mixing and application" (WAC 16-228-1220(3)), and "no person shall transport, handle, store, load, apply, or dispose of any pesticide, pesticide container or apparatus in such a manner as to pollute water supplies or waterways" (WAC 16-1220(2)). The regulations also include other specific pesticide management requirements that are consistent with the 6217(g) guidance, such as requiring the use of anti-backflow devices (WAC 16-228-1220(3)) and apparatus that can ensure proper application of pesticides (WAC 16-228-1320(7)). The regulations also provide for the revocation of pesticide applicator licenses if the applicator is found to be operating "faulty or unsafe apparatus" (WAC 16-228-1500(1)(d)). Violators of the pesticide laws are subject to license revocation, and potential civil and criminal penalties (Chapter 15.58.260 RCW and Chapter 17.21.310-340 RCW).

²² Washington Department of Ecology. Funding Guidelines State Fiscal Year 2020 Water Quality Financial Assistance. Publication 18-10-030. July 2018. Accessed 5/15/2019. <https://fortress.wa.gov/ecy/publications/documents/1810030.pdf>

²³ Washington State Conservation Commission. Non-shellfish Programmatic Guidelines. November 2015. Accessed 5/15/2019. <https://scc.wa.gov/wp-content/uploads/2016/03/Non-Shellfish-Programmatic-Guidelines.pdf>

²⁴ Washington State Conservation Commission. Shellfish Programmatic Guidelines. January 2018. Accessed 5/15/2019. <https://scc.wa.gov/wp-content/uploads/2018/02/WSCC-Shellfish-Programmatic-Guidelines-January-2018-FINAL.pdf>

²⁵ Washington State Natural Resource Conservation Service. Environmental Quality Incentives Program. Accessed 4/17/2019. <https://www.nrcs.usda.gov/wps/portal/nrcs/main/wa/programs/financial/eqip/>.

Under the WPAA, an applicator license is required to apply “restricted use” pesticides (as defined by either the EPA or the State), including for agricultural purposes (Chapter 17.21.20 (38) RCW). The WPCA, likewise, sets standards for the distribution of restricted use pesticides and makes it unlawful to sell or provide these pesticides to anyone not licensed under the WPAA (Chapter 15.58.150 RCW). A commercial pesticide applicator license from the Washington Department of Agriculture is also required for the application of general use pesticides on land owned by another, including for agricultural purposes (Chapter 17.21.070 RCW). To obtain a pesticide applicators license, all applicators must pass a general exam on pesticide laws and safety as well as a test specific to the type of pesticide application they will be performing. The Washington State University Cooperative Extension provides a study manual, *Washington Pesticide Laws and Safety: A Guide to Safe Use and Handling for Applicators and Dealers*,²⁶ and short training courses to prepare applicators for the licensing exams. The manual covers a variety of best management practices for pesticide management that are consistent with the 6217(g) guidance. For example, the manual includes practices for assessing soil characteristics (including how susceptible the soil is to leaching), implementing integrated pest management, selecting pesticides that have the least potential to leach into groundwater and surface waters, and conducting careful and frequent equipment calibration.

In addition to Washington’s three core pesticide authorities, specific rules for chemigation (i.e., application of pesticides through an irrigation system) (WAC 16-202-1000) and fertigation (i.e., application of fertilization through an irrigation system) (WAC 16-202-2000) establish additional requirements for these application methods that are consistent with the 6217(g) guidance. For example, both rules mandate anti-backflow devices and allow for alternative technology that prevents backflow.

The State’s use of the NRCS FOTG Practice 595 (Integrated Pest Management) further supports its direct regulatory authorities for pesticide management.²⁷ FOTG integrated pest management practice guidance urges the use of a site-specific combination of pest prevention, pest avoidance, pest monitoring, and pest suppression strategies (integrated pest management) to prevent or mitigate water quality impacts from pesticide runoff.

Grazing Management

For livestock operations, Washington’s regulatory structure to protect water quality is framed mainly around two programs: WSDA’s Dairy Nutrient Management Program and Ecology’s Nonpoint Source Program. These core programs are further supported by additional technical and financial assistance provided by Ecology, WSDA, conservation districts and others.

The Dairy Nutrient Management Program (as described above), requires all licensed cow dairies to develop nutrient management plans. The plans include inventories and evaluations of fields

²⁶Black, C., C. Foss and R. Maguire. 2017. *Washington Pesticide Laws and Safety: A Guide to Safe Use and Handling for Applicators and Dealers*. Washington State University Extension. H-1055.

²⁷ Natural Resource Conservation Service. 2012. Field Operating Technical Guide. Standard 595, Integrated Pest Management. Published 6/1/2012.

used for dairy operation and riparian areas to identify potential pollution sources and determine water quality protection needs. All standard practices included in the plans, including those for grazing management around waterways, must meet the specifications and methods described in the NRCS FOTGs.

As discussed above, Ecology's Nonpoint Source Program provides technical guidance on a combination of best management practices including riparian buffers, exclusion fencing, off-stream livestock watering, stream crossing, and NRCS FOTGs (grazing management away from surface water) as a baseline for addressing the grazing management measure. When technical assistance alone is not sufficient for preventing water quality impacts from grazing operations, Ecology takes enforcement action, when needed, through the State Water Pollution Control Act (Chapter 90.48 RCW).

Washington State University Agriculture Extension and conservation districts also provide technical assistance to livestock owners in implementing grazing best management practices consistent with the 6217(g) guidance to prevent or minimize nonpoint source pollution. For example, Guideline 6 of *Guide for Shoreline Living*, a print and online publication, promotes best practices such as excluding livestock from riparian areas, and providing hardened watering access and alternative drinking water access that are consistent with the 6217(g) guidance²⁸

Washington also offers several financial assistance programs to support good grazing management practices consistent with the 6217(g) guidance. Farmers are eligible to receive funding to install off-stream livestock watering and feeding facilities and restore riparian areas through Ecology's Water Quality Financial Assistance Program, Washington Conservation Commission's Conservation Reserve Enhancement Program and Natural Resource Investments grants.^{29,30,31} National Estuary Program grants administered by Ecology and the Washington Department of Health, and salmon recovery grants can also support riparian buffers, exclusion fencing, off-stream water and other livestock management practices.³²

Irrigation Water Management

Most irrigation in Washington occurs in the eastern part of the State, outside of the coastal nonpoint management area. However, when irrigation does occur within the coastal nonpoint management area, the State has programs that reduce nonpoint source pollution to surface waters

²⁸ Washington State University Extension. *Guide for Shoreline Living*, Guideline 6 – Living Along Lakes and Streams. 2015. Accessed 5/15/2019. http://shorestewards.cw.wsu.edu/wp-content/uploads/sites/3/2014/11/GuideforShorelineLiving_Update_4-15_P3-1.pdf

²⁹ Washington Department of Ecology. Funding Guidelines State Fiscal Year 2020 Water Quality Financial Assistance. Publication 18-10-030. July 2018. Accessed 5/15/2019. <https://fortress.wa.gov/ecy/publications/documents/1810030.pdf>

³⁰ Washington State Conservation Commission. Conservation Reserve Enhancement Program Factsheet. 2015. Accessed 5/15/2019. https://scc.wa.gov/wp-content/uploads/2016/10/CREP_Landowners-General_041515.pdf

³¹ Washington State Conservation Commission. 2018. Non-shellfish Programmatic Guidelines. November 2015. Accessed 5/15/2019. <https://scc.wa.gov/wp-content/uploads/2016/03/Non-Shellfish-Programmatic-Guidelines.pdf>

³² Washington State Recreation and Conservation Office. Salmon Recovery and Puget Sound Acquisition and Restoration. Accessed 5/26/2020. <https://rco.wa.gov/grant/salmon-recovery/>

caused by irrigation. For example, Washington relies on several NRCS FOTGs to promote irrigation best management practices that are consistent with the 6217(g) guidance, including Irrigation Systems (441-443) and Irrigation Water Management (449). For example, the Irrigation Water Management FOTG includes best practices for developing an irrigation water management plan to determine the appropriate application rate and volume of irrigation water to minimize sediment, nutrient and chemical transport to surface and groundwaters. The FOTG recommends using several methods such as monitoring soil moisture or the evapo-transpiration rate of crops to determine the timing and amount of each irrigation event and notes that proper back-flow preventers should be used during irrigation and chemigation.

Washington provides financial assistance through the State Clean Water Revolving Fund and the State's Irrigation Efficiencies Grant Program (IEGP) to support installation of efficient irrigation systems, like drip irrigation.^{33,34} Ecology also provides loans to farmers through the State Revolving Fund to install these systems. The Washington State Conservation Commission works with conservation districts to provide grants (up to 85 percent of the total project cost) through the IEGP to install more efficient irrigation systems. As of 2018, 69 projects had been completed through the IEGP, saving nearly 18,000 acre-feet of water, enhancing streamflow in 24 tributaries critical for salmon. As further incentive to reduce the use of irrigation water and thus minimize polluted runoff from irrigation activities, the State also provides funding to purchase saved irrigation water.

The chemigation element of the management measure for irrigation water management is addressed through Washington's Pesticide Regulations (WAC 16-228) and specific chemigation rules (WAC 16-202-1000), including requirements to prevent back siphoning and backflow prevention (WAC 16-228-1220(3); WAC 16-202-1012). WSDA's chemigation and fertigation technical assistance program works with growers to make sure their irrigation systems have appropriate backflow prevention devices and other system controls.

Enforceable Policies and Mechanisms for these Agriculture Management Measures

In addition to the direct enforcement authorities noted above, Washington provided a legal opinion from its Assistant Attorney General documenting how the Water Pollution Control Act (Chapter 90.48 RCW) provides the State with adequate back-up enforcement authority to ensure implementation of the 6217(g) management measures, including those for agriculture that rely, at least in part, on voluntary programs to meet the management measure requirements.^{35,36} The

³³ Washington Department of Ecology. Funding Guidelines State Fiscal Year 2020 Water Quality Financial Assistance. Publication 18-10-030. July 2018. Accessed 5/15/2019.
<https://fortress.wa.gov/ecy/publications/documents/1810030.pdf>

³⁴ Washington State Conservation Commission. Irrigation Efficiencies Grant Program. Accessed 4/17/2019.
<https://scc.wa.gov/iegp/>

³⁵ Washington Department of Ecology. Memo from Ronald L. Lavigne, Assistance Attorney General, to Helen Bressler, Water Quality Program, RE: Ecology's Authority to Prevent Non-Point Source Pollution and Require Implementation of Management Measures. July 14, 2004.

³⁶ Washington Attorney General, Memo from Ronald L. Lavigne, Senior Counsel, to Ben Rau, Watershed Planning

State has described how Ecology, responsible for enforcing Chapter 90.48 RCW, partners with WSDA, conservation districts, and others, to implement the agriculture management measures. Ecology has also provided examples of enforcement actions taken under Chapter 90.48 RCW, demonstrating its commitment to use its existing enforcement authorities to achieve implementation of these management measures where necessary.^{37,38}

Washington tracks and evaluates implementation of agriculture BMPs through several mechanisms. Ecology's Administration of Grants and Loans system tracks all projects funded through its Water Quality Financial Assistance Program. The State Conservation Commission's Conservation Practice Data System tracks BMPs implemented by conservation districts. The Washington Recreation and Conservation Office, which oversees salmon recovery funds, tracks funded projects, including those related to the agriculture management measures, through its PRoject Information System (PRISM). Ecology is also developing a new database to track all TMDL and nonpoint source implementation data, including BMPs installed, and plans to work with partners, such as conservation districts, to promote consistent collection of implementation data.³⁹ The database is currently on track to be completed by late 2020.

III. URBAN

A. NEW DEVELOPMENT, WATERSHED PROTECTION, SITE DEVELOPMENT CONSTRUCTION SITE EROSION AND SEDIMENT CONTROL, CONSTRUCTION SITE CHEMICAL CONTROL, and EXISTING DEVELOPMENT

1998 FINDING: Within the Puget Sound planning area, Washington's program includes management measures in conformity with the 6217(g) guidance, except for new development. Outside of the Puget Sound planning area, Washington's program does not include management measures in conformity with the 6217(g) guidance for new development, watershed protection, site development, construction site erosion and sediment control, construction site chemical control and existing development. The State has identified a backup enforceable authority for these management measures but has not yet demonstrated the ability or the authority to ensure implementation of the management measures throughout the coastal nonpoint management area.

1998 CONDITION: Within three years, Washington will include in its program a management measure in conformity with the 6217(g) management measures for new development within the

Unit Supervisor, RE: Ecology's Authority to Prevent Non-point Source Pollution and Require Implementation of Management Measures. July 12, 2019.

³⁷ Washington Department of Ecology. 2019. Memo from Gordon White, Shorelands and Environmental Assistance Program Manager and Heather Bartlett, Water Quality Program Manager, to Joelle Gore (NOAA), Lynda Hall (EPA) and Dan Opalski (EPA) RE: Ecology's Authority and Commitment to Prevent Non-Point Source Pollution. August 1, 2019.

³⁸ Washington Attorney General, Memo from Ronald L. Lavigne, Senior Counsel, to Ben Rau, Watershed Planning Unit Supervisor, RE: Ecology's Authority to Prevent Non-point Source Pollution and Require Implementation of Management Measures. July 12, 2019.

³⁹ For more information on the TMDL and nonpoint source implementation database see the Monitoring Section of this decision document.

Puget Sound planning area. Outside of the Puget Sound planning area, Washington will, within three years, include management measures in conformity with the 6217(g) guidance for new development, watershed protection, site development, construction site erosion and sediment control, construction site chemical control, and existing development. Within one year, Washington will develop a strategy (in accordance with Section XIII, page 15 of NOAA and EPA's 1998 findings for Washington's Coastal Nonpoint Program) to implement the management measures throughout the coastal nonpoint management area.

PROPOSED DECISION: Washington has satisfied this condition.

RATIONALE: Washington uses a combination of regulatory programs (e.g., Shoreline Management Act, Growth Management Act) and non-regulatory programs (e.g., *Stormwater Management Manual for Western Washington*, watershed planning efforts) backed by enforceable authorities to meet the new development, site development, watershed protection, and existing development measures. The construction site erosion and sediment control and construction site chemical control management measures are no longer applicable because they are covered through National Pollutant Discharge and Elimination System (NPDES) permits.

New Development

This management measure is intended to accomplish the following: (1) decrease the erosive potential of increased runoff volumes and velocities associated with development-induced changes in hydrology; (2) remove suspended solids and associated pollutants entrained in runoff that result from activities occurring during and after development; (3) retain hydrological conditions to closely resemble those of the pre-disturbance condition; and (4) preserve natural systems including in-stream habitat. First, state coastal nonpoint programs are no longer required to include the new development management measure in urbanized areas subject to Phase I or Phase II National Pollutant Discharge and Elimination System (NPDES) municipal separate storm sewer systems (MS4) permits because these regulations are redundant with this management measure for those permitted areas. See NOAA and EPA's 2002 memorandum, *Policy Clarification on Overlap of 6217 Coastal Nonpoint Programs with Phase I and II Storm Water Regulations*.⁴⁰ Consistent with that policy clarification, NOAA and EPA evaluated conformity with the management measures for new developments occurring outside of NPDES permitted urbanized areas. Nine counties (Snohomish, King, Pierce, Clark, Cowlitz, Kitsap, Skagit, Thurston and Whatcom) and 84 localities in western Washington are designated as Phase I or II municipalities subject to NPDES permitting for MS4 discharges.

Outside of MS4 communities, Washington meets the new development management measure through its *Stormwater Management Manual for Western Washington* (SWMMWW),⁴¹ which

⁴⁰ NOAA and EPA. Policy Clarification on Overlap of 6217 Coastal Nonpoint Programs with Phase I and II Storm Water Regulations. 2002. Accessed 8/1/2019.

https://coast.noaa.gov/data/czm/pollutioncontrol/media/NPDES_CZARA_Policy_Memo.pdf

⁴¹ Washington Department of Ecology. *Stormwater Management Manual for Western Washington*. Publication Number 19-10-021. Updated July 2019. Accessed 8/9/2019.

applies to all counties in Washington’s coastal nonpoint management area. The SWMMWW, targeted to local municipalities, land developers and businesses, establishes nine “minimum requirements” to control stormwater from new and redevelopment activities. Minimum requirements 5 (on-site stormwater management), 6 (runoff treatment) and 7 (flow control) specifically address the 6217 (g) guidance for new development. The water quality design storm volume and flow rates are intended to capture and effectively treat about 90-95% of the annual runoff volume in western Washington and reduce average annual total suspended solids (TSS) loadings by 80 percent. The requirements also ensure that post-development stormwater discharges match pre-development rates for a variety of runoff volumes from 50 percent of a 2-year peak flow up to full 50-year peak flow. These requirements are consistent with the new development management measure. The manual also includes design standards for a variety of best management practices, such as infiltration basins, wet ponds, biofiltration swales, and sand filters. The manual is available online for download and is also available in an interactive format. The online manual prominently features a training video for design reviewers. Ecology also promotes the manual through training workshops for local governments, the development/construction industry, and nongovernmental organizations.

Although the SWMMWW itself is not a regulation, its requirements and BMPs become enforceable through permits and authorizations issued by local and state authorities. For example, the design standards in the SWMMWW are incorporated into state-issued NPDES MS4 permits for Western Washington by reference. Ecology has criteria and procedures for regularly evaluating non-MS4 communities that are experiencing growth for inclusion under the MS4 permit program. In addition, Ecology encourages all localities throughout Western Washington to adopt these standards and requirements, or equivalent standards, in ordinances and rules. Non-MS4 cities, such as Sequim and Ocean Shores, have voluntarily adopted the manual.

Watershed Protection

The purpose of this management measure is to reduce the generation of nonpoint source pollutants and to mitigate the impacts of urban runoff and associated pollutants that result from new development or redevelopment, including the construction of new and relocated roads, highways, and bridges. The measure is intended to provide general goals for states and local governments to use in developing comprehensive programs for guiding future development and land use activities in a manner that will prevent and mitigate the effects of nonpoint source pollution. Washington satisfies the watershed protection management measure through its Growth Management Act (Chapter 36.70A RCW), Salmon Recovery Act (Chapter 77.85 RCW), Watershed Planning Act (Chapter 90.82 RCW), and Puget Sound Watershed Recovery Plans⁴² (Chapter 90.71 RCW). The Growth Management Act requires local governments to establish urban growth boundaries and designate and protect natural resource lands and critical areas, such

<https://fortress.wa.gov/ecy/ezshare/wq/Permits/Flare/2019SWMMWW/Content/Resources/DocsForDownload/2019SWMMWW.pdf>

⁴² Puget Sound Watershed Recovery Plans were originally authorized under Chapter 400-12 WAC, Local Planning and Management of Nonpoint Source Pollution. This Chapter was repealed by WSR 10-12-009 filed 5/20/10, and replaced with Chapter 90.71 RCW, Puget Sound Water Quality Protection.

as wetlands, critical aquifer recharge areas, fish and wildlife habitat conservation areas, and geologically hazardous areas (including areas susceptible to erosion). The Act also prohibits the expansion of an urban growth area into the one hundred-year floodplain of any river or river segment that: (i) is located west of the crest of the Cascade mountains; and (ii) has a mean annual flow of one thousand or more cubic feet per second as determined by the Department of Ecology (RCW Chapter 36.70A.110(8)(a)). In agricultural areas, the Act establishes the Voluntary Stewardship Program that provides an alternative, incentive-based approach to address fundamental goals of the Growth Management Act (RCW Chapter 36.70A.700). The Voluntary Stewardship Program allows counties to voluntarily protect and enhance critical areas within agricultural lands while maintaining and improving the long-term viability of agriculture and reducing the conversion of farmland to other uses.

The Salmon Recovery Act, Watershed Planning Act, and Puget Sound Watershed Recovery Plans provide other voluntary planning mechanisms to: protect areas susceptible to erosion and sediment loss; preserve areas that provide important water quality benefits or are necessary to maintain riparian and aquatic biota; and protect to the extent practicable, the natural integrity of waterbodies and natural drainage systems. For example, the Puget Sound Watershed Recovery Plans identify strategies and actions to protect and restore marine and freshwater habitat and water quality for each of the Puget Sound's fourteen watersheds.⁴³

Site Development

The goal of this management measure is to reduce the generation of nonpoint source pollution and to mitigate the impacts of urban runoff and associated pollutants from all site development. These controls and policies are necessary to ensure that development occurs so that nonpoint source concerns are incorporated during the site selection and the project design and review phases and are intended to apply to individual sites rather than watershed basins or regional drainage basins. The state meets the site development management measure through its Shoreline Management Act (SMA) (Chapter 90.58 RCW) and SWMMWW. The SMA generally applies to all water areas of the state and their associated shorelands, which extend 200 feet landward of the ordinary high-water mark of a water body. Under the SMA's planning requirements, local governments must consider impervious surface limitations and limiting land disturbing areas when establishing requirements for shoreline areas. The SWMMWW minimum requirements 1 (preparation of stormwater site plans), 2 (source control of pollution), and 4 (preservation of natural drainage systems and outfalls) are consistent with the site development management measure. Minimum requirements 1 and 2 call for preserving natural vegetation, marking sensitive areas and buffers to be preserved prior to land disturbing activities, clustering buildings, minimizing impervious areas, maintaining and utilizing natural drainage patterns, and designing cut and fill slopes in a manner to minimize erosion. Minimum requirement 4 ensures the maintenance of natural drainage patterns to the maximum extent practicable.

Construction Site Erosion and Sediment Control and Construction Site Chemical Control

⁴³ Puget Sound Partnership. Puget Sound Watersheds. Accessed 9/5/19. <https://www.psp.wa.gov/salmon-recovery-watersheds.php>.

State coastal nonpoint programs no longer need to include the construction site erosion and sediment control or construction site chemical control management measures because the NPDES permit application regulations for stormwater associated with industrial activities, including construction activity, apply nationwide (including the coastal nonpoint management areas of the various coastal states and territories) and have thus rendered the CZARA management measures for these areas redundant. See NOAA/EPA memorandum, *Policy Clarification on Overlap of 6217 Coastal Nonpoint Programs with Phase I and II Storm Water Regulations*.⁴⁴

Existing Development

The purpose of the existing development management measure is to protect and improve surface water quality by the development and implementation of watershed management programs. States are expected to develop and implement watershed management programs to reduce runoff pollutant concentrations and volumes from existing development. These programs should pursue the following objectives: (1) identify priority local and/or regional watershed pollutant reduction opportunities, e.g., improvements to existing urban runoff control structures; (2) contain a schedule for implementing appropriate controls; (3) limit destruction of natural conveyance systems; and (4) where appropriate, preserve, enhance, or establish buffers along surface waterbodies and their tributaries.

NOAA and EPA already found that Washington had satisfied the existing development management measure within the Puget Sound planning area (see 1998 *Findings for the Washington Coastal Nonpoint Program*).⁴⁵ In addition, like the new development management measure, NOAA and EPA's 2002 *Policy Clarification on Overlap of 6217 Coastal Nonpoint Programs with Phase I and II Storm Water Regulations*, clarifies that coastal nonpoint programs need not include the existing development management measures in Phase I and II NPDES MS4 communities.⁴⁶

Outside of the Puget Sound planning area and MS4 communities, Washington has met this measure through its various water quality improvement efforts, such as the TMDL program, TMDL alternatives, and Watershed Planning Act. These programs identify opportunities to reduce polluted runoff from existing development and establish schedules for implementing priority controls. For example, Ecology's TMDL process ensures that completed water quality improvement reports and Water Quality Implementation Plans (WQIPs) will address stormwater runoff from existing development as needed. At the beginning of the TMDL process, the State

⁴⁴ NOAA and EPA. Policy Clarification on Overlap of 6217 Coastal Nonpoint Programs with Phase I and II Storm Water Regulations. 2002.

https://coast.noaa.gov/data/czm/pollutioncontrol/media/NPDES_CZARA_Policy_Memo.pdf

⁴⁵ NOAA and EPA. Findings for the Washington Coastal Nonpoint Program. June 30, 1998.

<https://coast.noaa.gov/data/czm/pollutioncontrol/media/findwa.txt>

⁴⁶ NOAA and EPA. Policy Clarification on Overlap of 6217 Coastal Nonpoint Programs with Phase I and II Storm Water Regulations. 2002.

https://coast.noaa.gov/data/czm/pollutioncontrol/media/NPDES_CZARA_Policy_Memo.pdf

undertakes a complete water quality assessment to confirm if the impaired water listings are still correct and if any additional pollutants should also be included in the TMDL.⁴⁷ This assessment allows Ecology to incorporate stormwater runoff into the TMDL even if it is not currently a listed pollutant on the impaired water bodies list. Ecology works with the local communities to develop and implement a WQIP that includes recommended actions to protect or restore the watersheds targeted by this plan. In urbanizing areas, Ecology staff consult existing guidance documents, including the state stormwater manuals, to select BMPs that would be appropriate to address the pollutants of concern in developed areas. Completed WQIPs in watersheds that are outside the Puget Sound Basin but inside the coastal boundary, such as the one for the Chehalis/Greys Harbor watershed, are consistent with the 6217(g) guidance for existing development.⁴⁸ For instance, the Chehalis/Greys Harbor WQIP includes activities that communities in the watershed have identified to address stormwater issues, including installing stormwater BMPs that are consistent with the SWMMWW. To formalize the resources that should be consulted when developing WQIPs, Ecology revised its TMDL guidance to specifically reference the 6217(g) guidance and other relevant guidance materials.⁴⁹

In addition to the TMDL approach, Washington also offers an alternative water quality improvement tool to directly implement projects to address water quality concerns, including those from existing development. This approach provides an alternative to TMDLs and WQIPs in watersheds where the source of pollution and the remedy is known.

The Watershed Planning Act (Chapter 90.82 RCW) was established by the Washington State Legislature in 1997 to set a framework for developing local solutions to watershed issues in Washington. The Act encourages local governments to assess water quality problems, including impacts from existing development, and identify and implement a schedule to address priority problems. Between 1998 and 2012, 44 watershed-based planning groups developed plans and 33 groups adopted their plans. As planning was completed, the effort switched focus to implementation of those plans. While funding for watershed plan development under the Watershed Planning Act ended in 2012, some watershed groups continue to implement priority actions from these plans using a variety of funding sources.

Ecology supports implementation of these water quality improvement plans and projects, including projects to address stormwater runoff from existing development, through its combined Water Quality Financial Assistance Program. The program includes the Centennial Clean Water Program, Clean Water Act Section 319 Program, Stormwater Financial Assistance Program, and the Washington State Water Pollution Control Revolving Fund. Projects that have been prioritized in a water quality plan are prioritized for funding. Since 1994, Ecology has provided over \$1.5 million to jurisdictions outside the Puget Sound Basin but within the coastal nonpoint

⁴⁷ Washington Department of Ecology. Total Maximum Daily Load (Website). Undated. Accessed 5/9/2019. <https://ecology.wa.gov/Water-Shorelines/Water-quality/Water-improvement/Total-Maximum-Daily-Load-process>

⁴⁸ Washington Department of Ecology. *The Chehalis/Greys Harbor Watershed Dissolved Oxygen, Temperature, Fecal Coliform Bacteria TMDL Detailed Implementation (Cleanup) Plan*. Publication Number 04-10-065. 2004. Accessed 5/9/2019. <https://fortress.wa.gov/ecy/publications/documents/0410065.pdf>

⁴⁹ Washington Department of Ecology. "TMDL Outline". June 26, 2017.

program boundary. Examples of funded projects include stormwater facility planning, and development and implementation of stormwater treatment facilities that serve existing development.

Washington addresses the management measure elements to limit destruction of natural conveyance systems and preserve, enhance, or establish riparian buffers through its SWMMWW and the SMA. As discussed above, the SWMMWW includes provisions for preserving natural drainage systems and guidelines for wetland buffers. The SMA (Chapter 90.58 RCW) creates a cooperative local-state Shoreline Master Program to manage and protect the State's shorelines, including riparian areas.⁵⁰ Local Shoreline Master Programs (SMPs) must include policies and regulations to protect riparian buffers (WAC 173-26-221). Local governments are also encouraged to develop and carry out programs to restore the ecological function of the shoreline, which can include opportunities to restore riparian buffers (WAC 173-26-221). The *Shoreline Master Program Handbook* provides additional guidance to local governments in developing and implementing their SMPs.⁵¹ The handbook includes guidance on how to calculate appropriate riparian buffer widths to protect the ecological function of riparian buffers.

Enforceable Policies and Mechanisms for these Urban Management Measures

Washington provided a legal opinion from its Assistant Attorney General asserting that the Water Pollution Control Act (Chapter 90.48 RCW) provides adequate back-up enforcement authority to ensure implementation of the 6217(g) management measures, including those for new development, site development, and existing development that rely, at least in part, on voluntary programs to meet the management measure requirements.^{52,53} Ecology serves as both the lead implementing and enforcing agency and has committed to using its existing enforcement authorities to achieve implementation of these management measures where necessary.⁵⁴ Washington tracks and evaluates implementation of the programs through several mechanisms including its CWA Section 319 annual reports, TMDL effectiveness monitoring studies, Puget Sound Partnership's report card and effectiveness monitoring, and the upcoming Nonpoint Source and TMDL Tracking System.⁵⁵

⁵⁰ The Shoreline Master Program is discussed in more depth in the Hydromodification section and the Wetlands and Riparian section.

⁵¹ Washington Department of Ecology. *Shoreline Master Programs Handbook*. Publication Number 11-06-010. December 2017. Accessed 5/9/2019. <https://fortress.wa.gov/ecy/publications/documents/1106010>

⁵² Washington Department of Ecology. Memo from Ronald L. Lavigne, Assistance Attorney General, to Helen Bressler, Water Quality Program, RE: Ecology's Authority to Prevent Non-Point Source Pollution and Require Implementation of Management Measures. July 14, 2004.

⁵³ Washington Attorney General. Memo from Ronald L. Lavigne, Senior Counsel, to Ben Rau, Watershed Planning Unit Supervisor, RE: Ecology's Authority to Prevent Non-point Source Pollution and Require Implementation of Management Measures. July 12, 2019.

⁵⁴ Washington Department of Ecology. 2019. Memo from Gordon White, Shorelands and Environmental Assistance Program Manager and Heather Bartlett, Water Quality Program Manager, to Joelle Gore (NOAA), Lynda Hall (EPA) and Dan Opalski (EPA) RE: Ecology's Authority and Commitment to Prevent Non-Point Source Pollution. August 1, 2019.

⁵⁵ Washington Department of Ecology. *2017 Report on Activities to Implement Washington State's Water Quality Plan to Control Nonpoint Source Pollution*. March 2018.

B. NEW AND OPERATING ONSITE DISPOSAL SYSTEMS (OSDS)

1998 FINDING: Washington's program includes management measures in conformity with the 6217(g) guidance and enforceable policies and mechanisms to ensure implementation throughout the coastal nonpoint management area, except for a program that ensures inspection of onsite disposal systems (OSDS) at a frequency adequate to ascertain system failure and provides for denitrification where nitrogen-limited surface waters may be adversely affected by excess nitrogen loadings from new OSDS.

1998 CONDITION: Within two years, Washington will include in its program management measures in conformity with the 6217(g) guidance and enforceable policies and mechanisms to ensure implementation throughout the coastal nonpoint management area for a program that ensures inspection of OSDS at a frequency adequate to ascertain system failure and provides for denitrification where nitrogen-limited surface waters may be adversely affected by excess nitrogen loadings from new OSDS.

PROPOSED DECISION: Washington has satisfied this condition.

RATIONALE: Washington meets the OSDS requirements for existing systems through a combination of statewide rules, local ordinances, and a targeted approach focusing on areas draining to sensitive areas within Puget Sound and other select areas outside the Sound. In addition, the State conducted studies and developed guidance to facilitate the use of high-performance denitrifying systems and provided low interest loan programs to help property owners repair and upgrade systems.

In 2005, Washington issued rules that became effective in July 2007 to comprehensively regulate OSDS (WAC 246-272A). Chapter 246-272A-270 requires owners of OSDS to:

- Assure a complete evaluation of the system components and/or property to determine functionality, maintenance needs and compliance with regulations and any permits once every three years for all systems consisting solely of a septic tank and gravity, and at least annually for all other systems;
- Employ an approved pumper to remove the septage from the tank when the level of solids and scum indicates that removal is necessary; and
- Provide maintenance and needed repairs to promptly return the system to a proper operating condition.

State guidance notes that inspections should be conducted by a qualified sewage system inspector or homeowner that has demonstrated knowledge by receiving a certification or passing a test.

Implementation of Chapter 246-272A-270 throughout the State's coastal nonpoint management area satisfies the inspection element of the management measure, but many counties also go beyond these statewide requirements. Eleven of the 12 counties that border Puget Sound require

inspections of OSDS at the time of property transfer by a licensed or certified inspector (Snohomish County currently does not). Washington Department of Health (DOH) estimates that there are more than 372,000 OSDS in these 11 counties. Outside this area, Pacific County, with an estimated 6,800 OSDS, requires proof of inspection by a licensed inspector during property transfers, and Cowlitz County, with an estimated 9,400 systems in the coastal nonpoint management area, requires proof of licensed OSDS inspections within three years or less from the time of sale. In all, there are an estimated 388,200 OSDS currently covered under mandatory time-of-transfer inspections in the coastal nonpoint management area. As there are an additional 76,294 systems in counties that do not require time-of-transfer inspections, nearly 84 percent of all OSDS in the coastal nonpoint management area are covered under locally mandated time-of-transfer programs.

In addition, 12 of the 17 counties in the coastal nonpoint management area (Pacific County and all Puget Sound counties except Snohomish County) require that any triennial inspections for conventional gravity flow systems and annual inspections for all other systems be conducted by either licensed professionals or owners who have undergone training to perform such inspections and who hold current certifications by their local health departments.

Beyond the statewide OSDS rules, under RCW 70.118A, each of the 12 counties bordering Puget Sound also must develop an enhanced local OSDS program to provide greater protection in designated marine recovery areas — areas where existing OSDS may be causing a problem, such as impaired shellfish growing areas, marine waters listed as impaired under Clean Water Act (CWA) section 303(d) for low dissolved oxygen and/or fecal coliform, or marine waters where nitrogen has been identified as a contaminant of concern. As part of the marine recovery program, these 12 counties must develop and implement enhanced onsite waste management plans that the Washington DOH reviews and approves. Under this program, counties must also inventory existing OSDS, identify systems located in designated marine recovery areas and other designated areas of concern, ensure systems are inspected and repaired as needed, and develop an electronic database to share information with the public about OSDS. As of 2018, approximately 20 percent of the Sound's unsewered shoreline (448 miles) is within marine recovery areas and other designated areas of concern.

Per RCW 70.118A, the 12 Puget Sound counties are required to report the progress they have made in implementing their onsite waste management plans to DOH, including how many systems are being inspected and which ones have failed. Counties must also report how they have worked with owners to make repairs. Since these regulations went into effect in 2007, and as of 2018, the 12 Puget Sound counties have inventoried more than 87,000 septic systems in the marine recovery areas and other designated areas of concern and repaired more than 1,200 of them. As of October 2018, 92 percent of these systems are fully documented in county databases, including information on condition and inspection status. Washington DOH has set a target of reaching 100 percent of the OSDS inventory in these areas by December 2020. As long ago as 2009, such regulations had proven to be effective. According to DOH's 2009 report to the State legislature titled *Puget Sound Local On-Site Sewage Management* on the progress of the 12 county plans, OSDS inspections increased 80 percent between 2004 and 2008 in Kitsap

County after it implemented its operation and maintenance program to ensure these systems continue to function correctly.⁵⁶

Outside of the Puget Sound area, Pacific and Grays Harbor Counties require a qualified inspector to report inspection results to the county health officer for every system within areas of special concern, such as shellfishing areas and drinking water supplies, at least every three years.

In addition to the inspection requirements discussed above, Washington's rules require the property seller to disclose the condition of the OSDS at the time of transfer (WAC 246-272A-270). Specifically, the seller must provide a disclosure statement to the buyer to disclose when the system was last inspected and pumped out and any problems that may exist with the system. In 2018, DOH began the process to revise Chapter 246-272A WAC, including requiring time-of-transfer OSDS inspections either statewide or throughout all western Washington counties. DOH plans to finalize the revisions in 2020, with the goal to be effective by July 1, 2021.

Washington's Onsite Sewage System rules (WAC 246-272A) also satisfy the condition to provide for denitrification where nitrogen-limited surface waters may be adversely affected by excess nitrogen loadings from new OSDS. As noted above, the rules direct the 12 Puget Sound counties, which comprise the majority of the coastal nonpoint management area and population, to identify areas in their local health management plans where OSDS could pose an increased public health or environmental risk, including areas where nitrogen has been identified as a contaminant of concern (WAC 246-272A-0015 and RCW 70.118A). Pursuant to WAC 246-272A-0230 (2)(e)(i)(D), where nitrogen has been identified as a contaminant of concern in the local health management plan, nitrogen contributions must be addressed in the OSDS design by employing treatment systems to reduce nitrogen or ensuring the lot is large enough to adequately disperse nitrogen loadings before they impact water quality.

Washington further requires nitrogen-reducing technologies for decentralized wastewater treatment, like OSDS, to achieve a 20 mg/L total nitrogen threshold under WAC 246-272A-0110. DOH must review and register each such technology before local governments may permit use of such technologies. As conventional gravity systems for residential homes have a typical influent range of 40–50 mg/L, this performance standard meets the 6217(g) guidance's objective to achieve a 50 percent reduction of nitrogen from denitrifying systems.

Washington also provides for enhanced implementation of the management measure with low interest loans from its Clean Water State Revolving Fund (more than \$24 million from 2000 to 2017). Fourteen of the 17 counties in the coastal nonpoint management area use these funds to provide financial assistance, such as low interest loans, to repair and upgrade septic systems. These counties augment this funding with grants from Washington's Centennial Fund in the form of water quality program grants. From 2007 to 2017, Ecology awarded more than \$12

⁵⁶ Washington Department of Health. Puget Sound Local On-Site Sewage Management. May 2009. DOH Publication # 337-035-14. Accessed 5/9/2019. <https://www.doh.wa.gov/portals/1/Documents/Pubs/337-035>

million in grant funds to these counties to support septic system repairs and upgrades. Two additional counties, San Juan County and Skagit County, provide county financing for OSDS repair and replacements, focusing on failures posing risks to public health or water quality. These counties' funding is further augmented by Washington's use of nearly \$6 million from EPA's Puget Sound National Estuary Program grants to identify and repair septic system problems that have contributed to contamination of shellfish beds and other sensitive marine habitats. In other targeted areas, such as Hood Canal, Washington has provided additional financial assistance from State funds to pay for centralized wastewater treatment plants or sewer hook-ups to eliminate OSDS entirely.

Many denitrifying systems are proprietary and too costly for some homeowners. Ecology partnered with the University of Washington and DOH to evaluate two publicly available and innovative nitrogen-reducing OSDS technologies: recirculating gravel filters and vegetated denitrifying woodchip beds. Ecology published results in 2013 that demonstrated the effectiveness of both technologies to reliably remove more than 80 percent of total nitrogen from wastewater sources.⁵⁷ Washington's approval of these public domain systems provides affordable alternatives for residential use which should, in turn, increase use of denitrifying systems in nitrogen-sensitive waters where OSDS contribute to those impairments. In 2015, DOH developed and published guidance that is likely to support greater use of these technologies.⁵⁸

Enforceable Policies and Mechanisms for the Operating OSDS Management Measure

Washington has direct authority to implement the operating OSDS management measure through the State's Onsite Sewage System rules (WAC 246-272A) as noted above.

C. PLANNING, SITING, AND DEVELOPING ROADS AND HIGHWAYS; SITING, DESIGNING AND MAINTAINING BRIDGES; ROAD, HIGHWAY AND BRIDGE CONSTRUCTION PROJECT EROSION AND SEDIMENTS CONTROL; ROAD, HIGHWAY AND BRIDGE CONSTRUCTION SITE CHEMICAL CONTROL; ROAD, HIGHWAY AND BRIDGE OPERATION AND MAINTENANCE; ROAD, HIGHWAY AND BRIDGE RUNOFF SYSTEMS

1998 FINDING: For roads, highways and bridges in the Puget Sound planning area under State jurisdiction, Washington's program includes management measures in conformity with the 6217(g) guidance, and enforceable policies and mechanisms. For roads, highways and bridges not under State jurisdiction and for State roads, highways and bridges outside of the Puget Sound planning area, Washington's program does not include management measures in conformity with

⁵⁷ University of Washington and Washington Department of Health. Evaluation of On-Site Sewage Systems Nitrogen Removal Technologies: Recirculating Gravel Filters and Vegetated Denitrifying Woodchip Bed. DOH 337-139. December 31, 2013. Accessed 5/10/2019. <https://www.doh.wa.gov/Portals/1/Documents/4400/337-139-VRGF-WB-Final-ETV-Report.pdf>

⁵⁸ Washington Department of Health. *Recirculating Gravel Filter Systems – Recommended Standards and Guidance for Performance, Application, Design, and Operation & Maintenance*. DOH-337-011. March 2015. Accessed 5/10/2019. <https://www.doh.wa.gov/Portals/1/Documents/Pubs/337-011.pdf>

the 6217(g) guidance. For local roads, highways and bridges within the Puget Sound planning area and for all roads, highways and bridges outside of the Puget Sound planning area, the State has identified a backup enforceable authority but has not yet demonstrated the ability of the authority to ensure implementation throughout the coastal nonpoint management area.

1998 CONDITION: Within three years, the State will include management measures in its program for roads, highways and bridges outside the Puget Sound planning area and for those areas not under State jurisdiction within the planning area. Within one year, Washington will develop a strategy (in accordance with Section XIII, page 15 of NOAA and EPA's 1998 findings for Washington's Coastal Nonpoint Program) to implement the management measures throughout the coastal management area management area.

PROPOSED DECISION: Washington has satisfied this condition.

RATIONALE: Washington has satisfied the 6217(g) guidance for planning, siting and developing roads, highways and bridges, operation and maintenance, and runoff systems through a mixture of regulatory and voluntary programs, including the Shoreline Management Act, Puget Sound Highway Runoff Program, and Washington State Department of Transportation's (WSDOT) *Environmental Manual* and *Highway Runoff Manual*.

In December 2002, NOAA and EPA issued a policy clarification stating that state coastal nonpoint control programs are no longer required to address the road, highway and bridge management measures for construction projects and construction site chemical control because these measures are now addressed throughout the coastal nonpoint management area by National Pollutant Discharge Elimination System (NPDES) Phase I and Phase II Stormwater Regulations.⁵⁹

Similarly, the road, highway and bridge operation and maintenance and runoff system management measures need not be addressed by a state's coastal nonpoint program within Phase I and II designated areas on the basis that these management measures are implemented by municipalities under NPDES permits for municipal separate storm sewer systems. According to Section 6217 program guidance, once a source is covered by a NPDES permit, it is excluded from 6217 requirements.^{60,61} Therefore, by implementing the Phase I and II programs, Washington has met the conditions for the road, highway and bridge operation and maintenance and runoff system measures within its Phase I and II communities. Nine counties (Snohomish,

⁵⁹ NOAA and EPA. Policy Clarification on Overlap of 6217 Coastal Nonpoint Programs with Phase I and II Storm Water Regulations. 2002.

https://coast.noaa.gov/data/czm/pollutioncontrol/media/NPDES_CZARA_Policy_Memo.pdf

⁶⁰ NOAA and EPA. *Coastal Nonpoint Pollution Control Program: Program Development and Approval Guidance*. January 1993 (Appendix B: National Pollutant Elimination System). Accessed 5/19/2019.

<https://coast.noaa.gov/data/czm/pollutioncontrol/media/6217proguidance.pdf>

⁶¹ NOAA and EPA. Policy Clarification on Overlap of 6217 Coastal Nonpoint Programs with Phase I and II Storm Water Regulations. 2002.

https://coast.noaa.gov/data/czm/pollutioncontrol/media/NPDES_CZARA_Policy_Memo.pdf

King, Pierce, Clark, Cowlitz, Kitsap, Skagit, Thurston and Whatcom) and 84 localities in western Washington are designated as Phase I or II municipalities and are subject to NPDES permit conditions applicable to municipal separate storm sewer systems.

Outside of the Phase I or II designated areas, the Puget Sound Highway Runoff Program (WAC 173-270) requires WSDOT to comply with Ecology's stormwater manual or an equivalent manual approved by Ecology for all the roadways that WSDOT owns or controls, or for which it has maintenance responsibility within the Puget Sound basin. WSDOT has developed the *Highway Runoff Manual*, which applies to WSDOT activities, including federally and state-funded road activities, throughout the State.⁶² The manual contains best management practices consistent with the 6217(g) guidance measures for planning and siting, operation and maintenance, and runoff systems for roads, highways and bridges. For example, the manual calls for maintaining natural drainage systems, limiting land disturbance when siting and designing roadways, including bridges, and protecting wetlands and other areas that provide water quality benefits. Minimum Requirement 3-3.7 (Wetlands Protection) specifically states that "stormwater discharges to wetlands must maintain the wetland's hydrologic conditions (particularly hydroperiod), hydrophytic vegetation, and substrate characteristics that are necessary to maintain existing wetland functions and values." The manual also requires that an operation and maintenance guide be developed for all stormwater facilities and best management practices (BMPs), and that the parties responsible for maintenance be identified and a record of maintenance activities be kept. Specific maintenance standards for various BMPs are also discussed, such as routine trash, debris and sediment removal, vegetation maintenance, and stopping and correcting erosion scour. In addition, the manual includes guidance on how to identify and track retrofit opportunities, such as improvements to roadway drainage and stormwater collection systems. Finally, the manual identifies specific retrofit requirements to reduce runoff from existing roads for projects that add new impervious surfaces within the Puget Sound basin.

Ecology's *Stormwater Management Manual for Western Washington* (SWMMWW), as described in the Urban section above, must be followed for all State transportation facilities and for all roads, highways and bridges undertaken by counties, cities, and other jurisdictions that use State or federal funding. Local manuals must be approved by Ecology before they can be used to ensure their consistency with the State manuals (i.e., WSDOT *Highway Runoff Manual* and SWMMWW). The SWMMWW, which includes practices such as protecting vegetation, wetlands and slopes, stabilizing soils, preserving natural drainage systems, and conducting routine operation and maintenance of stormwater BMPs, is consistent with the 6217(g) road, highways and bridges management measures for planning, siting and developing roads and highways, bridges, and operation and maintenance.

⁶² Washington State Department of Transportation. Highway Runoff Manual. Publication Number M 31-16.0. February 2016. Accessed 5/9/2019. <https://www.wsdot.wa.gov/publications/manuals/fulltext/M31-16/M31-16.04CompleteSupplement.pdf>

In addition to the operation and maintenance elements in the *Highway Runoff Manual*, all of WSDOT's operation and maintenance activities are designed to meet State water quality standards and the Endangered Species Act (ESA). WSDOT's *Environmental Procedures Manual Part 7, Maintenance and Operations*,⁶³ describes how the WSDOT's *Maintenance Manual*⁶⁴ and *Regional Road Maintenance Endangered Species Act Program Guidelines*⁶⁵ are paired with various interagency agreements among WSDOT, Ecology and other State agencies to ensure road maintenance activities protect water quality and designated uses. The *Maintenance Manual* contains various operation and maintenance practices to reduce and prevent polluted runoff from roadways and bridges per the 6217(g) guidance such as: repairing erosion areas in roadside drainage ditches, restricting and limiting herbicide and pesticide application along roadways, and routinely removing trash and debris. The *Regional Road Maintenance Endangered Species Act Program Guidelines* provide further guidance on road maintenance best management practices to protect salmon and comply with the ESA. Those states, cities, or counties seeking coverage under the applicable ESA's 4(d) Rule must comply with the guidelines. The guidelines require the implementation of BMPs such as protecting areas that may be disturbed by stormwater runoff and maintaining sediment on site. Finally, WSDOT has mapped all sensitive areas, such as wetlands, within 300 feet of waterbodies so that maintenance staff know where to apply sufficiently protective BMPs.

The WSDOT manages several grant programs, such as the State Transportation Improvement Program (STIP), that further support the implementation of the 6217(g) measures for roads, highways and bridges for both State and local roads throughout the coastal nonpoint management area. The STIP provides a process for identifying, prioritizing, and implementing roadway, bridge and other transportation improvement projects, including stormwater retrofits. As noted above, any project that is funded with State or federal funding must comply with the *Highway Runoff Manual*. The State has supported, and continues to support, stormwater retrofits to existing roadways through these grant programs. For example, recent STIP projects have included improvements to roadside drainage and roadway stormwater collection systems. Nearly all roadways in the coastal nonpoint management area eventually will meet the standards in the *Highway Runoff Manual* because the vast majority of roads, highways and bridges will be either built, repaired or altered using State or federal funds. The remainder of roads, highways and bridges that are locally funded will be either built, repaired, or altered through voluntary compliance with the manual over time. Because the manual provides guidelines for both western and eastern Washington and takes into account variations in climatic, geologic, and hydrogeologic conditions, it has become the standard operating procedure throughout the State.

⁶³ Washington State Department of Transportation. *Environmental Procedures Manual Part 7, Maintenance and Operations*. Publication Number M 31-11.05. October 2008. Accessed 5/9/2019 <https://www.wsdot.wa.gov/publications/manuals/fulltext/M31-11/M31-11.05complete.pdf>

⁶⁴ Washington State Department of Transportation. *Maintenance Manual*. Publication Number M51-01.08. Updated April 2019. Accessed 5/9/2019 <https://www.wsdot.wa.gov/publications/manuals/fulltext/M51-01/M51-01.08Complete.pdf>

⁶⁵ Washington State Department of Transportation. *Regional Road Maintenance Endangered Species Act Program Guidelines*. Undated. Accessed 5/9/2019. <https://www.wsdot.wa.gov/Maintenance/Roadside/Esa.htm>

While local jurisdictions that do not rely on State or federal funding for transportation projects are not required to use the *Highway Runoff Manual*, WSDOT administers a local training and technical assistance program, the Local Technical Assistance Program, to encourage and help local governments comply with the manual. The program gives training to local jurisdictions on the manual and provides other written and electronic guidance on various highway design and planning best practices that are consistent with State and federal water quality-related transportation standards.

Enforceable Policies and Mechanisms for the Roads, Highways and Bridges Management Measures

In addition to the direct authorities noted above, such as the Puget Sound Highway Runoff Program (WAC 173-270), Washington provided a legal opinion from its Attorney General's office explaining how the Water Pollution Control Act (Ch. 90.48 RCW) provides adequate back-up authority to ensure implementation of the 6217(g) measures, including the road, highways and bridges management measures.^{66,67} Ecology, which implements the Water Pollution Control Act, has a close working relationship with WSDOT and monitors the transportation funding and local assistance WSDOT provides to assess progress in meeting the management measures. Ecology and WSDOT have several memoranda of understanding and signed interagency agreements such as the *1988 Memorandum of Understanding on Environmental Issues* and *2014 Implementation Agreement Regarding Application of the Highway Runoff Manual*, that describe how the two agencies work together to protect water quality and designated uses and take enforcement action, when needed.^{68,69} The State tracks implementation of the voluntary roads, highways and bridges management measures through its STIP, TMDL, and CWA Section 319 programs.

IV. MARINAS AND RECREATIONAL BOATING

1998 FINDING: For the siting and design of marinas, Washington's program includes management measures in conformity with the 6217(g) guidance except for water quality assessment, shoreline stabilization, storm water runoff, and fueling station design. The Washington program includes enforceable policies and mechanisms to ensure implementation of the siting and design management measures except for water quality assessment, shoreline stabilization, stormwater management fueling station design and the sewage facility management

⁶⁶ Washington Department of Ecology. Memo from Ronald L. Lavigne, Assistance Attorney General, to Helen Bressler, Water Quality Program, RE: Ecology's Authority to Prevent Non-Point Source Pollution and Require Implementation of Management Measures. July 14, 2004.

⁶⁷ Washington Attorney General. Memo from Ronald L. Lavigne, Senior Counsel, to Ben Rau, Watershed Planning Unit Supervisor, RE: Ecology's Authority to Prevent Non-point Source Pollution and Require Implementation of Management Measures. July 12, 2019.

⁶⁸ Memorandum of Understanding Between the Washington State Departments of Ecology and Transportation Regarding Environmental Issues Under Department of Ecology Jurisdiction. Signed August 4, 1988. Accessed 5/9/2019. http://www.wsdot.wa.gov/publications/manuals/fulltext/M31-11/agreements/MOU_EnvIssues.pdf

⁶⁹ Implementing Agreement Between Washington Department of Ecology and the Washington State Department of Transportation Regarding Application of the Highway Runoff Manual. Signed March 2019. Accessed 8/8/2019. <https://fortress.wa.gov/ecy/ezshare/wq/permits/WSDOT2019%20Implementing%20Agreement.pdf>

measure. For operation and maintenance of marinas, Washington's program does not include management measures in conformity with the 6217(g) guidance. The State has identified a backup enforceable authority but has not yet demonstrated the ability of the authority to ensure implementation throughout the coastal nonpoint management area.

1998 CONDITION: Within two years, Washington will include in its program: 1) for siting and design of marinas, management measures in conformity with the 6217(g) guidance for water quality assessment, shoreline stabilization, storm water runoff, and fueling station design and enforceable policies and mechanisms to ensure implementation of the water quality assessment, shoreline stabilization, stormwater runoff, fueling station design, and sewage facility management measures throughout the coastal nonpoint management area; and 2) for operation and maintenance of marinas, management measures in conformity with the 6217(g) guidance. Within one year, the State will develop a strategy (in accordance with Section XIII, page 14 of NOAA and EPA's 1998 findings for Washington's Coastal Nonpoint Program) to implement the operation and maintenance management measures throughout the coastal nonpoint management area.

PROPOSED DECISION: Washington has satisfied this condition.

RATIONALE: NOAA and EPA have determined that Washington has met all elements of the marina management measures through its voluntary Clean Marina Program and Guidebook, backed by enforceable authority, and a variety of direct rules and regulations as well, such as the State Environmental Policy Act and Hydraulic Code.

Washington is no longer required to include the stormwater runoff management measure where its NPDES General Permit for Boatyards applies.⁷⁰ The General Permit applies to all boatyards, which are defined as "commercial business(es) engaged in the construction, repair and maintenance of small vessels, 85 percent of which are 65 feet or less in length or revenues from which constitute less than 85 percent of gross receipts."⁷¹ All marinas with hull maintenance areas are subject to the requirements of this permit.

To address most of the 6217(g) management measures for marina operations and maintenance as well as the marina siting and design management measures for fuel station design, stormwater runoff, and sewage facilities that are not covered by a NPDES permit, the State developed a marina best management practices manual, *Pollution Prevention for Washington*

⁷⁰ NOAA and EPA. Coastal Nonpoint Pollution Control Program: Program Development and Approval Guidance. January 1993. (Appendix B: National Pollutant Discharge Elimination System). Accessed 5/19/2019. <https://coast.noaa.gov/data/czm/pollutioncontrol/media/6217proguidance.pdf>

⁷¹ Washington Department of Ecology. A National Pollutant Discharge Elimination System (NPDES) and State Waste Discharge General Permit for Stormwater and Wastewater Discharges Associated with Boatyards, Permit No. WAG030000. July 6, 2016. Accessed 5/10/2019. <https://ecology.wa.gov/DOE/files/1d/1d060811-c51a-4643-aaa7-b61c8d8aa1a5.pdf>

State Marinas that addresses most of the 6217(g) management measures.^{72,73} For example, the manual includes best management practices for solid waste management, liquid material management, petroleum control, boat and hull cleaning, public education, and sewage facility maintenance that are consistent with the 6217(g) guidance for marina operation and maintenance. In addition, the manual includes practices to ensure fuel stations are designed to easily clean up spills, pump-outs and restroom facilities are designed and sited to allow for ease of access, and adequate signage for pump-out and restrooms is provided. The manual also encourages the use of stormwater runoff controls, such as low impact development techniques, and the proper design and use of hull maintenance areas. The State distributed copies of the manual to all 200 marinas across the state and an interactive version is available online.

Since 2005, Washington has also administered the voluntary certification-based Clean Marina Washington program that gives special recognition to marinas that adopt the best practices in the manual. Through participation in the program, marinas also receive free technical assistance from the State to implement the best practices. As of 2018, the State has certified 81 marinas, approximately 40 percent of the marinas and ports within the coastal nonpoint program area. NOAA and EPA encourage Washington to expand the certification program to other marinas within the coastal nonpoint management area as expeditiously as possible.

The State addresses the marina siting and design water quality assessment and shoreline stabilization management measures as part of its permitting processes for marinas. First, under the State Environmental Policy Act (SEPA) (Chapter 43.21C RCW), project proponents are required to identify potential impacts of marina projects on water quality and aquatic habitat. To facilitate this assessment, the State requests that applicants complete a SEPA environmental checklist to document their assessment. Larger marinas are also usually required to develop an environmental impact statement to assess site conditions and identify alternatives for site design. The regulatory agencies apply this information in guiding their permit decisions. Second, under the Hydraulic Code (RCW 77.55.100-160), marina construction projects are specifically required to “incorporate mitigation measures as necessary to achieve no-net-loss of productive capacity of fish and shellfish habitat” (WAC 220-110-020). The Washington State Department of Fish and Wildlife (WDFW) issues the Hydraulic Code permits. If needed, WDFW conditions the permits, consistent with the 6217(g) management measures, to minimize water quality impacts and ensure shorelines are properly stabilized to avoid nonpoint source problems from erosion. Finally, under the authority granted under Section 401 of the Federal Clean Water Act, Ecology approves, conditions, or denies certification for marina construction projects that require a Federal permit for in-water work. The Section 401 certification is required for the construction, operation and maintenance of a project (which may result in a

⁷² Washington Sea Grant. Pollution Prevention for Washington State Marinas. Publication Number WSG-MR 16-05. September 2016. Accessed 5/10/2019. <https://wsg.washington.edu/wordpress/wp-content/uploads/marina-handbook.pdf>

⁷³ The two marina and boat operation and maintenance management measures that are not addressed in the manual are the fish waste boat operation and maintenance management measures. These are addressed through other mechanisms as described later in this rationale.

discharge) and requires compliance with State water quality standards and other appropriate requirements of State law.

The Solid Waste Management Act (RCW 70.95) supports the 6217(g) marina operation and maintenance management measures for solid waste and fish waste. The act prohibits throwing garbage or other solid waste into a water body and requires marinas with more than 30 slips to provide recycling receptacles. Fish waste is, by definition, a solid waste, which is defined as “all putrescible and non-putrescible solid and semisolid wastes including garbage, rubbish, ashes, industrial wastes, swill, sewage sludge, etc. ...” (RCW 70.95.030(22)).

To further address the fish waste management measure, Washington produced a fish waste brochure for distribution to marinas and retailers selling fishing licenses. The brochure, titled “The Nuts of Guts - And Other Useful Information for Fishermen,” provides instructions on how to clean fish, discusses the problem of disposing of fish wastes into marina waters, and describes best management practices for disposing of fish waste properly, such as using fish cleaning stations, cleaning fish at home, freezing and reusing fish parts as bait, and avoiding releasing bait, either dead or alive, into the water.⁷⁴

To address the boat operation management measure, Washington has developed a boater handbook, *Adventures in Boating Washington*, that addresses boating safety and environmental concerns, including how to prevent the introduction of invasive species.⁷⁵ Local governments have also established speed limit restrictions close to shore to prevent erosion. For example, Pierce County prohibits boats from traveling at a speed that would produce damaging wake within 200 feet of the shoreline (8.88.151) while Skagit County has established a “no wake” zone within 150 feet of all shorelines unless the boat operator has a special permit (9.04.070).

Enforceable Policies and Mechanisms for the Marina Management Measures

In addition to the direct authorities discussed above such as the Hydraulic Code (RCW 77.55.100-160) and Solid Waste Management Act (RCW 70.95), Washington provided a legal opinion from the Attorney General’s Office stating that the Water Pollution Control Act (Chapter 90.48 RCW) provides adequate back-up authority to ensure implementation of the 6217(g) management measures, including the marina management measures. Ecology, which implements the Water Pollution Control Act, partners with several other organizations and state agencies to administer the Clean Marina Certification Program and distribute the marina and boater manuals. Voluntary adoption of the marina management measures is tracked through the certification program.

V. HYDROMODIFICATION

1998 FINDING: Washington’s program does not include management measures in conformity with the 6217(g) guidance for channelization, dams, or stream banks and shorelines or

⁷⁴ Washington Department of Ecology. 2002. *The Nuts of Guts - And Other Useful Information for Fishermen*.

⁷⁵ Washington State Parks. *Adventure in Boating Washington Handbook*. 2018. Accessed 5/10/2019.

enforceable policies and mechanisms to ensure implementation throughout the coastal nonpoint management area.

1998 CONDITION: Within three years, Washington will include management measures in its program that are in conformity with the 6217(g) guidance for channelization, dams, and streambanks and shorelines. Washington will also include enforceable policies and mechanisms to implement the management measures throughout the coastal nonpoint management area.

PROPOSED DECISION: Washington has satisfied this condition.

RATIONALE: Washington largely relies on a suite of regulatory authorities to meet the hydromodification management measures including the Hydraulic Code, the Shoreline Management Act, Clean Water Act Section 401 certifications, and Water Resources Act. The State also relies on watershed-scale programs such as Salmon Recovery, Total Maximum Daily Loads, “Floodplains by Design” and other watershed planning efforts, to identify and implement priority water quality and instream and riparian habitat improvement opportunities associated with hydromodification projects. Finally, various guidance manuals, such as the *Integrated Streambank Protection Guidelines* and *Marine Shoreline Design Guidelines* provide further support to the direct regulatory authorities to implement the hydromodification management measures.

Channelization and Channel Modification

To address the channelization and channel modification management measures, Washington uses three principal authorities: the Hydraulics Code, the Shoreline Management Act, and the Water Pollution Control Act. Each involves a permit or approval process that provides the State with an opportunity to evaluate the effects of proposed channelization or channel modification projects on instream water quality and instream and riparian habitat to ensure that the projects are designed and implemented in a way that minimizes adverse impacts.

The Hydraulic Code (Chapter 77.55 RCW) regulates hydraulic projects in order to ensure that construction or performance of work is done in a manner that protects fish life. The Hydraulic Code requires that any person, organization, or government agency proposing to conduct a hydraulic project must receive a permit (Hydraulic Project Approval or HPA) issued by the Washington Department of Fish and Wildlife (WDFW). Under the Hydraulic Code, a hydraulic project includes any project that will “use, divert, obstruct, or change the natural flow or bed of any of the salt or fresh waters of the state.” Affected activities include streambank stabilization and protection as well as channel change or realignment projects.

While the primary purpose of the Hydraulic Code is the protection of fish life, implementation also reduces nonpoint source pollution in ways that closely align with the objectives of the channelization and channel modification management measures. Through the HPA process, channel and channel modification projects are “only to be approved where the application can demonstrate the benefits or lack of adverse impacts to fish life” (WAC 220-110-080). Therefore, the potential effects of the proposed project must be evaluated, and the project

planned and designed to minimize undesirable impacts on water quality and instream and riparian habitat on which fish are dependent. The HPA brochure lists several key elements WDFW staff look for when reviewing applications that are consistent with the 6217(g) channelization and channel modification management measures: preserving vegetation along streambanks to filter stormwater runoff, maintaining instream habitat complexity, and maintaining existing water quality during construction.

Under Section 401 of the Clean Water Act, Ecology approves, conditions, or denies water quality certifications for channel modification projects that require federal permits or licenses. As part of this certification, Ecology evaluates the project's potential effects on water quality and instream and riparian habitat to ensure compliance with State water quality standards. During this review process, Ecology ensures consistency with the *Integrated Streambank Protection Guidelines* (discussed below) and other guidebooks. If needed, Ecology can use its authority to add conditions to the certificates to require compliance with appropriate best management practices from the guidelines to ensure the projects are designed and implemented to minimize adverse water quality impacts. Such conditions are consistent with the 6217(g) guidance for the channelization and channel modification management measures.

The Shoreline Management Act (SMA) (Chapter 90.58 RCW) establishes a cooperative program of shoreline management between local governments and the State that encompasses channels and channelization activities. The SMA applies to all shorelines along: (1) marine waters; (2) streams and rivers with a mean annual flow rate of at least 20 cubic feet per second; and (3) lakes of 20 acres or more. The SMA also applies to all upland areas within 200 feet of these waters, wetlands and river deltas connected to these waterbodies, and some or all of the 100-year floodplain. Under the SMA, local governments (counties and cities) are responsible for developing SMPs to establish policies and rules to guide shoreline activities, including channelization and channel modifications, and issuing permits for these activities. At the State level, Ecology is responsible for reviewing and approving local SMPs and providing technical assistance to communities to ensure the SMPs comply with the SMA and the Shoreline Master Program Guidelines (WAC 173-26). The Shoreline Master Program Guidelines translate the broad policies of the SMA into standards for regulation of shoreline uses which local governments must follow when drafting local SMPs.

One of the core components of the Shoreline Master Program is that local SMPs must "include policies and regulations that are designed to achieve no net loss of [shoreline ecological] functions" (WAC 173-26-186(8)). The "no net loss" policy is designed to halt the introduction of new impacts to shoreline ecological functions resulting from development by relying on both protection and restoration activities. The policy is consistent with the intent of the channelization and channel modification management measures, which call for evaluating the potential effects of proposed channelization activities on water quality and instream and riparian habitat, and planning and designing the projects to reduce adverse impacts. The guidelines describe specific principles and standards that local SMPs must include for shoreline modifications and uses, such as reducing the adverse effects of shoreline modifications (e.g., channels and channelizations) on

the ecological function of the shoreline and taking specific mitigation measures to avoid significant ecological impacts (WAC 173-26-231).

The SMP process is one way that Washington identifies and implements opportunities to improve water quality and instream and riparian habitat from existing modified channels—the third element of the channelization and channel modification management measures. As part of their SMPs, local governments collect information on degraded shoreline areas and identify opportunities to restore the ecological function of the shoreline (WAC 173-26-201(3)(6)). Where ecological function is impaired, SMPs must include: goals and policies to restore that function; plans that identify restoration projects and implementation strategies; funding sources; and implementation timelines.

Beyond these regulatory programs, Washington has several voluntary guides and programs that also help it to address the channelization and channel modification management measures. For example, many local, regional and tribal planning groups develop and implement watershed-scale restoration plans under the auspices of the Salmon Recovery Act (Chapter 77.85 RCW), Watershed Planning Act (Chapter 90.82 RCW), TMDL program (including implementation plans), Floodplains by Design, the Puget Sound Partnership's Local Integrating Organizations, or other initiatives. These plans identify opportunities to restore water quality and salmon habitat, including opportunities to improve existing channel modifications.

Dams

In December 2002, NOAA and EPA issued a policy clarification, stating that state coastal nonpoint control programs are no longer required to include the dam erosion and sediment control and chemical and pollutant control management measures because these management measures are now covered through the NPDES Phase I and II Stormwater Program.⁷⁶

With regard to the management measure for the operation of dams to protect surface water quality and instream and riparian habitat, the 6217(g) guidance articulates that states develop and implement a dam operation program that assesses instream and riparian habitat and the potential for improvement. The dam operation program under CZARA also assesses significant nonpoint source impacts that result from excessive surface water withdrawals from reservoirs. NOAA and EPA find that Washington has met this management measure through a variety of state and federal programs.

Clean Water Act Section 401 provides the State with the authority to grant, condition, or deny certification for a federal permit or license to construct a new dam that may result in a discharge into navigable waters, and the relicensing of existing hydropower dams regulated under the Federal Energy Regulatory Commission. The State has authority to grant, condition, or deny the certification to ensure that the EPA-approved State water quality standards will be met. As part

⁷⁶ NOAA and EPA. Policy Clarification on Overlap of 6217 Coastal Nonpoint Programs with Phase I and II Storm Water Regulations. 2002.
https://coast.noaa.gov/data/czm/pollutioncontrol/media/NPDES_CZARA_Policy_Memo.pdf

of the water quality certification process, Ecology staff assess the dam's impact on water quality and instream and riparian habitat to ensure compliance with established water quality standards.

Three other State laws—Minimum Water Flows and Levels (Chapter 90.22 RCW), Water Resources Act (Chapter 90.54 RCW), and Watershed Planning Act (Chapter 90.82 RCW)—give the State authority to set instream flows for surface and groundwater. The adopted stream flows provide a basis for decision-making on new water rights and changes to existing rights for dams and other users. Maintaining minimum levels of instream flows helps to protect instream and riparian habitat and surface water quality. At present, a total of 15 rules establish instream flows for all or part of 17 of the 25 Water Resource Inventory Areas (WRIAs) in Washington's coastal nonpoint management area. While an adopted instream flow does not supersede existing water rights, it provides a basis for decision-making on new water rights and changes to existing rights for dams and other users. The Department of Ecology's Water Resources Program administers state requirements for water withdrawals.

Washington's TMDL Program assembles data and information to identify the sources of pollutants (e.g., for temperature or dissolved oxygen) and allocates maximum daily pollutant loads to point source dischargers and nonpoint sources, including dams, to meet water quality standards. Washington's TMDL program also develops TMDL implementation plans, which identify pollutant reduction measures designed to achieve TMDL allocations, including measures to reduce adverse water quality impacts associated with dams.

Streambank and Shoreline Erosion

Similar to the discussion above regarding the channelization and channel modification section, Washington addresses the streambank and shoreline erosion management measure primarily through its three principal State aquatic/land use authorities (the Hydraulics Code, the Water Pollution Control Act, and the Shoreline Management Act and its associated Guidelines) and other guidance, such as *Integrated Streambank Protection Guidelines*. Many of the same policies contained within these acts and guidance are also consistent with the requirements of the eroding streambanks and shorelines management measure: protecting streambank and shoreline features with the potential to reduce nonpoint source pollution; protecting streambanks and shorelines from erosion due to uses of either the shorelands or adjacent surface waters; and stabilizing eroding streambanks, preferably with vegetative methods, where possible.

The Hydraulics Code regulates hydraulic projects or other work affecting the bed or flow of waters of the State. Projects are conditioned with appropriate best management practices to control erosion and siltation (e.g., using silt curtains and complying with authorized work time limitations) to minimize impacts from shoreline erosion to critical habitat.

The SMP Guidelines also regulate streambank and shoreline stabilization activities (WAC 173-26-231). The State's SMP Handbook has a chapter dedicated to helping local governments develop and implement SMPs to address shoreline stabilization. The SMP Handbook describes

the types of shoreline stabilization methods and associated construction impacts, how the SMA Guidelines address these impacts, and provides examples.

In addition to the “no net loss” policy discussed above, SMPs must include provisions addressing bank stabilization and/or shoreline protection. SMPs must also apply standards that encourage the use of nonstructural or vegetative stabilization approaches where appropriate, protect shoreline features that can reduce erosion, and ensure upland development is planned and sited to reduce the potential of shoreline erosion (WAC 173-26-221), consistent with the 6217(g) eroding streambanks and shorelines management measure.

To ensure water quality standards will be met, Ecology also approves, conditions, or denies water quality certifications for bank stabilization projects that require a federal permit or license for in-water work under Section 401 of the Clean Water Act and the State Water Pollution Control Act. Finally, the *Integrated Streambank Protection Guidelines* include best practices for protecting and restoring streambanks and shorelines from erosion.⁷⁷ The guidelines include a chapter dedicated to various techniques to prevent erosion and stabilize eroding banks, including both structural and biotechnical techniques (vegetative methods) and riparian buffer management techniques to protect streambank and shoreline features that can help reduce nonpoint source pollution and prevent uses of the adjacent shoreland that would increase erosion.

Enforceable Policies and Mechanisms for the Hydromodification Management Measures
Washington has direct authority to implement the hydromodification management measures through authorities such as the Hydraulic Code (Chapter 77.55 RCW), Shoreline Management Act (Chapter 90.58 RCW), Clean Water Act Section 401, Minimum Water Flows and Levels (Chapter 90.22 RCW), and Water Resources Act (Chapter 90.54 RCW), as noted above.

VI. WETLANDS, RIPARIAN AREAS AND VEGETATED TREATMENT SYSTEMS

1998 FINDING: Washington’s program does not include management measures in conformity with the 6217(g) guidance. Washington has identified enforceable authorities, as well as recommended actions in the State’s Wetlands Integration Strategy, which could implement the management measures, but has not yet demonstrated the ability of the authorities or its programs to ensure implementation of the management measures throughout the coastal nonpoint management area.

1998 CONDITION: Within three years, Washington will include in its program management measures in conformity with the 6217(g) guidance to protect wetlands and riparian areas, promote restoration of wetlands and riparian areas and promote the use of vegetative treatment systems. Within one year, Washington will develop a strategy (in accordance with Section XIII,

⁷⁷ Cramer, M., Bates, K., Miller, D., Boyd, K., Fotherby, L., Skidmore, P., and Hoitsma, T. *Integrated Streambank Protection Guidelines*, Washington Department of Fish and Wildlife. 2003. Accessed 5/10/2019. <https://wdfw.wa.gov/sites/default/files/publications/00046/wdfw00046.pdf>

page 14) to implement the wetlands, riparian areas and vegetated treatment systems management measures throughout the coastal nonpoint management area.

PROPOSED DECISION: Washington has satisfied this condition.

RATIONALE: Washington has demonstrated that it protects wetlands and riparian areas that significantly abate nonpoint source pollution and promotes the restoration of wetlands and riparian areas and the use of vegetative treatment systems (VTS), consistent with the 6217(g) guidance management measures. Based on the State’s demonstration, the State’s management measure program is consistent with the 6217(g) Guidance through its reliance on existing State authorities and programs, such as the Shoreline Management Act, Water Pollution Control Act, Growth Management Act, Puget Sound Partnership and Washington’s stormwater manual and other programs and authorities.

Under the Shoreline Management Act (SMA) (Chapter 90.58 RCW), the State has established a cooperative local-State Shoreline Master Program to manage and protect the State’s shorelines, including riparian areas and wetlands associated with the shoreline. Through this program, Ecology works closely with local governments to implement SMPs to protect wetlands and riparian areas that serve significant nonpoint source pollution abatement functions through its “no net loss of ecological function” policy (WAC 173-26-186(8)). Localities must develop local SMPs, which must also include policies and regulations to protect critical saltwater and freshwater habitat, including wetlands and riparian areas (WAC 173-26-221). Ecology developed and maintains the *Shoreline Master Program Handbook* to provide additional guidance to local governments in developing and implementing their SMPs.⁷⁸ The handbook includes guidance on how to calculate appropriate riparian buffer widths to protect their ecological function. The Shoreline Master Program also promotes the restoration of wetlands and riparian areas. In their SMPs, local governments are encouraged to develop and carry out programs to restore the ecological function of the shoreline, including restoring wetlands and riparian areas (WAC 173-26-221). (See the Hydromodification Section above for a more in-depth discussion of the Shoreline Master Program.)

Washington uses the Water Pollution Control Act (Chapter 90.48 RCW) to further protect wetlands. Through the CWA Section 401 water quality certification process, Ecology approves, conditions or denies proposed projects in “waters of the U.S.,” including wetlands, to ensure water quality standards are met. The State also can use administrative orders issued under Chapter 90.48 RCW to regulate projects involving “isolated wetlands,” that is, wetlands that fall outside of federal jurisdiction. Applicants for proposed projects are required to avoid and minimize impacts to wetlands to the extent feasible and provide compensatory mitigation for unavoidable impacts. Washington has developed active mitigation banking and in-lieu fee

⁷⁸ Washington Department of Ecology. 2017. Shoreline Master Programs Handbook. Publication Number 11-06-010. December 2017. Accessed 5/10/2019. <https://fortress.wa.gov/ecy/publications/documents/1106010.pdf>

mitigation programs to require wetland restoration if impacts to wetlands cannot be avoided.⁷⁹ There are currently eight banks approved in the coastal zone.

Washington's Growth Management Act (Chapter 36.70A RCW) promotes the protection of wetlands and riparian areas at the local level. The Act authorizes and requires cities and counties to regulate wetlands within their jurisdictions. Ecology plays an advisory role by offering local governments technical assistance in meeting these requirements and providing comments during updates to local ordinances. As part of its technical assistance, Ecology developed guidance for local governments on protecting wetlands through critical area ordinances (CAO). This *Wetland Guidance for CAO Updates* includes recommendations for wetland protection based on best available science, including wetland buffers and mitigation options.⁸⁰ The guidance also includes sample ordinance language that incorporates these recommendations.

The *Stormwater Manual for Western Washington* (SWMWW) promotes the management of stormwater runoff to maintain and protect wetland functions.⁸¹ The Manual includes several wetland-specific requirements to remove pollutants prior to discharges to wetlands, and to attenuate peak flows to maintain the natural hydroperiod of any wetlands receiving treated stormwater. It also has a section that provides specific guidance on managing stormwater related to wetlands to ensure potential impacts to wetland function and values are avoided or minimized (Appendix I-D). (See the Urban section above for a more in-depth discussion of the SWMWW.)

Outside of direct regulatory programs, Washington promotes wetland and riparian area protection and restoration through various planning and financial assistance programs. Through the Salmon Recovery Act (Chapter 77.85 RCW), local conservation districts are encouraged to assess instream and riparian habitat, including wetlands, and work with local governments to design and implement projects to repair damaged habitat. Washington's Salmon Recovery Funding Board provides funding to implement riparian and wetland protection and restoration projects. Between 2000 and 2015, the Board provided over \$1 billion for salmon recovery projects statewide.⁸² In 2016, the Washington Wildlife and Recreation Program's riparian protection account alone provided almost \$10 million to projects within the coastal nonpoint management area. For example, these funds supported the establishment of a 1,007-acre Natural Resources Conservation Area (NRCA) along the entire Kennedy Creek stream corridor.⁸³ The

⁷⁹ Mitigation banking and in-lieu fee programs are compensatory mitigation programs that allow applicants to purchase credits or pay a fee to offset a project's unavoidable impacts to wetlands or other aquatic resources. The credits purchased are then used to restore, create, or enhance wetlands at a wetland mitigation bank site.

⁸⁰ Washington Department of Ecology. *Wetland Guidance for CAO Updates*. Publication Number 16-06-001. June 2016. Accessed 5/10/2019. <https://fortress.wa.gov/ecy/publications/documents/1606001.pdf>

⁸¹ Washington Department of Ecology. *Stormwater Management Manual for Western Washington*. Publication Number 19-10-021. Updated July 2019. Accessed 8/9/2019. <https://fortress.wa.gov/ecy/ezshare/wq/Permits/Flare/2019SWMWW/Content/Resources/DocsForDownload/2019SWMWW.pdf>

⁸² 2016 State of Salmon in Watersheds: Governor's Update (Governor's Salmon Recovery Office). 2016.

⁸³ Washington Department of Natural Resources. *Kennedy Creek Proposed Natural Resources Conservation Area*,

creek is one of the most productive chum salmon spawning streams in Washington, and the NRCA designation provides important riparian protection along the waterway.

The State also promotes wetland and riparian protection and restoration activities through other funding mechanisms such as Ecology’s Water Quality Financial Assistance Program and Floodplains by Design. Since 2015, Ecology’s Water Quality Financial Assistance Program (which administers the Section 319, Clean Water State Revolving Fund, and Centennial funds) has awarded almost \$31 million to riparian and wetland protection and restoration projects in the coastal nonpoint boundary. Floodplains by Design, a new grant program created in 2013, has awarded \$115 million statewide to support large-scale, multiple-benefit projects that reduce community flood hazards while restoring the natural functions of Washington rivers and floodplains.⁸⁴ In addition, the United States Fish and Wildlife Service’s National Coastal Wetlands Conservation Grants program awarded \$17 million to wetlands projects within Washington’s coastal nonpoint boundary between the 2013 and 2017.

The Puget Sound Water Quality Protection Act (Chapter 90.71 RCW) established the Puget Sound Partnership, a State agency that works collaboratively with partners to provide for the comprehensive planning and implementation of programs to protect and restore Puget Sound. One of the core goals and strategic priorities of the partnership is the protection and restoration of habitat, including wetlands and riparian areas. To achieve this goal, the partnership works with state agencies, local governments, Tribes and other partners to develop and implement the *Action Agenda for Puget Sound*, which identifies the goals and strategies for recovery and describes how the work of many partner organizations contributes to improving the health of Puget Sound.⁸⁵ Through its “Vital Signs” website, the State reports that this effort restored 486 acres of wetlands in the Skagit and Snohomish river deltas since 2014 and implemented 94 projects throughout the Puget Sound Basin to restore vegetation along riparian corridors between fiscal year 2008 and 2016, among other accomplishments.⁸⁶

In addition, there is a new funding authority, codified in 2018, titled the Streamflow Restoration Grant program. The Streamflow Restoration Act (Chapter 90.94 RCW) provides for actions in watersheds to offset potential impacts to instream flows associated with permit-exempt domestic water use and achieve net ecological benefit. In passing this new law, the Legislature also authorized the sale of capital bonds for this purpose in the aggregate amount of \$300 million over the next 15 years. Of this total, \$20 million was made available to start projects in 2018-19

Mason & Thurston Counties, Washington. May 17, 2016. Accessed 5/10/2019.

https://www.dnr.wa.gov/publications/amp_kennedy_creek_prop_boundary_factsheet.pdf

⁸⁴ Washington Department of Ecology. Floodplains by Design grant program (Website). Undated. Accessed 5/10/2019. <https://ecology.wa.gov/Water-Shorelines/Shoreline-coastal-management/Hazards/Floods-floodplain-planning/Floodplains-by-design>

⁸⁵ Puget Sound Partnership. The 2018-2022 Action Agenda for Puget Sound. December 2018. Accessed 5/10/2019. <https://pspwa.app.box.com/s/osxaeqg19fevxu5n3k8xnjytkwol512>

⁸⁶ Puget Sound Partnership. Puget Sound Vital Signs: Understanding Ecosystem Health (Website). Undated. Accessed 5/8/2018. See <http://www.psp.wa.gov/vitalsigns/>, specifically the “Protected and Restored Habitat” Goal, indicators for “Area of Estuarine Wetlands Restored to Flooding” and “Riparian Restoration.”

through the Streamflow Restoration Grant program. There are four eligible project types, one of which is riparian and fish habitat improvement.

To address the vegetated treatment systems (VTS) management measure, Washington promotes the use of VTS for addressing nonpoint source pollution by identifying VTS as effective approaches to pollution treatment and encouraging their use through State stormwater and agricultural manuals and best management practices (BMP) guidance. For example, the *SWWMM* identifies various VTS BMPs such as bio-infiltration swales, vegetated filter strips, and stormwater treatment wetlands. Washington also promotes low-impact development (LID) techniques, many of which feature VTS-like rain gardens and bio-infiltration swales, through an LID Certification program for practitioners and various guides and training opportunities. Also, Ecology adopted the National Marine Fisheries Services' riparian buffer guidance as a requirement for riparian projects funded through its Water Quality Assistance Program to ensure projects the agency funds support appropriate buffer widths, a type of VTS.⁸⁷

Enforceable Policies and Mechanisms for the Wetlands and Riparian Management Measures
Washington has direct authority to implement the wetlands and riparian management measures through authorities noted above, such as Shoreline Management Act (Chapter 90.58 RCW), Clean Water Act Section 401, and Growth Management Act (Chapter 36.70A RCW).

VI. CRITICAL COASTAL AREAS AND TECHNICAL ASSISTANCE

1998 FINDING: Washington's program does not identify and include a process for the continuing identification of critical coastal areas adjacent to impaired and threatened coastal waters. The program does not describe efforts to provide technical assistance to local governments and the public for implementing additional management measures.

1998 CONDITION: Within four years, Washington will include in its program a process for the identification of critical coastal areas adjacent to impaired and threatened coastal waters. Within two years, the State will develop a program to provide technical assistance to local governments and the public in the implementation of additional management measures.

PROPOSED DECISION: Washington has satisfied this condition.

RATIONALE: Section 6217 of CZARA requires states to identify critical coastal areas in which new or substantially expanding land uses may cause or contribute to the impairment of coastal water quality. CZARA also requires states to provide technical assistance to local governments and the public to support the implementation of any additional management measures that are identified. Washington considers all watersheds of the coastal nonpoint program area as potentially critical. The State has several processes in place to further identify

⁸⁷ Washington Department of Ecology. Funding Guidelines State Fiscal Year 2020 Water Quality Financial Assistance. Publication 18-10-030. July 2018. Accessed 5/10/2019.
<https://fortress.wa.gov/ecy/publications/documents/1810030.pdf>

and refine critical coastal areas that enables it to meet this condition, including through the Puget Sound Partnership, Growth Management Act (GMA), TMDL/water quality improvement program, and Salmon Recovery Planning. The State has programs and mechanisms to provide technical assistance to local governments and the public on a wide variety of nonpoint source pollution issues, including the implementation of additional management measures, when needed.

Critical Coastal Areas

As noted above, Washington relies on several processes for identifying critical coastal areas. First, in 2007, the State legislature authorized the Puget Sound Partnership which established the entire Puget Sound basin as a critical planning area for the protection and restoration of water quality and salmon. The Puget Sound Partnership brings together partners from local, state, federal, and tribal governments, environmental organizations, and the private sector to establish and implement a strategic Action Agenda that prioritizes necessary actions to protect and restore Puget Sound.⁸⁸ The science-based action agenda is structured around three strategic initiatives: prevent pollution from stormwater, protect and restore habitat, and protect and recover shellfish beds. The long-term recovery strategies and near-term implementation actions for each strategic initiative align with the critical area objectives of CZARA to protect against current and anticipated nonpoint source pollution problems in identified critical areas.

Under the GMA, all cities and counties in Washington are required to designate and protect critical areas and resource lands (RCW 36.70A.060). The GMA defines critical areas as wetlands, critical aquifer recharge areas, fish and wildlife habitat conservation areas, frequently flooded areas, and geologically hazardous areas (RCW 36.70A.030(5)). Counties and cities are required to use the best available science in developing policies and development codes or ordinances to protect the functions and values of the critical areas they identify (RCW 36.70A.172). All cities and counties are required to review, and, if necessary, amend their critical areas and natural resources policies and regulations at least every eight years as part of the required cycle for updating comprehensive land use plan and development regulations (RCW 36.70A.130, RCW 90.58.080).

In addition, pursuant to the provisions of the SMA (RCW 90.58.090(4) and 36.70A.480(3)), Shoreline Master Programs must provide for management of critical areas located within the shorelines of the state with policies and regulations that provide a level of protection to critical areas within the shoreline area that assures no net loss of shoreline ecological functions that are necessary to sustain shoreline natural resources. Ecology rules (WAC 173-26-191) establish procedures for integrating critical areas protections into Shoreline Master Programs.

Washington uses its water quality improvement process, which includes the development and implementation of TMDLs and their alternatives, as another mechanism to identify and address nonpoint source problems from existing land uses within specific critical coastal areas. As part of

⁸⁸ Puget Sound Partnership. The 2018-2022 Action Agenda for Puget Sound. December 2018. Accessed 5/10/2019. <https://pspwa.app.box.com/s/osxaeqg19fevXu5n3k8xnjytzkwo1512>

the water quality improvement planning process, the State typically evaluates the entire watershed that influences the impaired waterbody and can identify critical coastal areas that need to be targeted to protect or restore water quality. The watershed restoration plan developed under the TMDL program then includes actions to protect or restore these critical coastal areas. The Urban (Existing Development) section above and the Additional Management Measures section below provide more detailed discussions of the TMDL planning process.

Salmon Recovery Plans provide yet another mechanism for Washington to identify critical coastal areas where new or expanding land uses may cause or contribute to the impairment of coastal water quality. Established through the Salmon Recovery Act (Chapter 77.85 RCW), the salmon recovery planning areas are important critical coastal areas. Within these areas, Salmon Recovery Plans examine which factors in local streams limit recovery of wild salmon, including various land use practices that may result in polluted runoff that impairs coastal water quality. The plans include prioritized lists of science-based projects to address those factors and are based on habitat assessments and strategies for habitat preservation and restoration.

Technical Assistance

Washington has a strong technical assistance program for local governments and the public on nonpoint source pollution across the spectrum of management measure categories, including the establishment and implementation of additional management measures. Washington uses a variety of tools or mechanisms to provide technical assistance including development of guidance or reference manuals, web-based information, recorded webinars, videos/podcasts, in-person workshops, networking opportunities and individual consultation. Washington updates its technical assistance resources and mechanisms in an appropriate and timely manner, as illustrated below. Some of the technical assistance programs the State employs to address nonpoint source pollution are discussed in more detail under specific management measure sections; a few examples are highlighted here.

The Department of Ecology developed an online resource, a Shoreline Planners Toolbox, to provide guidance and reference materials to local governments to help them comply with Shoreline Management Act and Shoreline Master Program Guidelines, which are discussed in more detail in the Hydromodification section above.⁸⁹ The Toolbox is updated on an ongoing basis as new information becomes available, demonstrating Washington's technical assistance program is adaptive to meet evolving needs. A key resource in the toolbox is the *Shoreline Master Program Handbook*.⁹⁰ The Handbook, which is updated frequently, builds on more than forty years of collective state and local government experience in developing and administering Shoreline Master Programs in Washington. One chapter of the handbook is dedicated to the protection of critical areas. Recent revisions to the handbook have included new information to

⁸⁹ Washington Department of Ecology. Shoreline Planners Toolbox (Website). Undated. Accessed 5/10/2019. <https://ecology.wa.gov/Water-Shorelines/Shoreline-coastal-management/Shoreline-coastal-planning/Shoreline-planners-toolbox>

⁹⁰ Washington Department of Ecology. Shoreline Master Programs Handbook. December 2017. Publication Number 11-06-010. Accessed 5/10/2019. <https://fortress.wa.gov/ecy/publications/documents/1106010.pdf>

assist local governments with the use of soft shoreline stabilization techniques to control eroding shorelines.

Beyond the Shoreline Planners Toolbox, the Coastal Training Program provides trainings and workshops for shoreline management professionals.⁹¹ In partnership with Washington Sea Grant, Ecology also co-sponsors the Shoreline and Coastal Planners Group which provides an opportunity for shoreline planning professionals to meet, create new partnerships, and coordinate a network for technical assistance.⁹² The group holds meetings across the coastal nonpoint management area several times a year to discuss specific issues of regional relevance. Past discussion topics include: management of steep slopes; shoreline stabilization and alternatives to armoring; riverbank and floodplain restoration; shoreline buffers for resource protection; flood hazards; and wetlands acquisition and restoration for watershed recovery.

Washington has also developed several technical tools for wetlands mitigation to incorporate the best available science and support decision-making. Examples include:

- The wetlands credit/debit method – designed to provide guidance, for both regulators and applicants, for calculating when a proposed wetland mitigation project adequately replaces the functions and values lost when wetlands are impacted;
- Wetland mitigation guidance – used to help applicants apply mitigation sequencing to avoid and minimize impacts to wetlands, and to provide adequate compensatory mitigation; and
- The wetland rating system – designed to help agencies make decisions about standards for protecting wetlands, including buffers.

In urban areas, the Department of Ecology, Department of Health, and the Department of Commerce provide technical assistance to local governments, watershed planning groups, and citizens on stormwater, watershed planning, onsite sewage systems, and pollution prevention. For example, the State participates in forums such as the Infrastructure Assistance Coordinating Council (IACC) to help communities and tribes identify and obtain resources they need to develop, improve, and maintain infrastructure, including infrastructure to control nonpoint source pollution.⁹³ The IACC is a nonprofit organization comprised of state and federal agencies, local government associations, tribes, and nonprofit technical assistance organizations. It sponsors an annual statewide conference where state and federal programs assist local governments and tribes by sharing information on infrastructure needs, helping to brainstorm project ideas, and problem-solving with technical assistance teams. The organization also hosts a

⁹¹ Washington Department of Ecology. Padilla Bay National Estuarine Research Reserve Coastal Training Program (Website). Undated. Accessed 5/10/2019. <http://www.coastaltraining-wa.org/>

⁹² Washington Department of Ecology and Washington Sea Grant. Shoreline and Coastal Planners Group. (Website). Undated. Accessed 5/10/2019. <https://www.coastalplanners.org/>

⁹³ Infrastructure Assistance Coordinating Council. Undated. Website. Accessed 5/10/2019. <http://www.infracunding.wa.gov/index.html>

website that provides links to resource manuals, trainings, funding opportunities, and technical assistance.

For forestry, one of the core technical assistance tools is the *Forest Practices Board Manual* (manual).⁹⁴ The Board maintains the manual as a supplement to the Forest Practices Rules to provide additional technical assistance in complying with rule requirements. The Board updates the manual to ensure the latest technical assistance for additional management measures is provided.

VIII. ADDITIONAL MANAGEMENT MEASURES

1998 FINDING: Washington's program does not provide for the identification of additional management measures and the continuing revision of management measures applicable where the 6217(g) measures are fully implemented but water quality threats or impairments persist.

1998 CONDITION: Within two years, Washington will include in its program a process for developing and revising management measures to be applied in critical coastal areas and in areas where necessary to attain and maintain water quality standards. Within three years, the State will adopt additional management measures where water quality impairments or degradation of beneficial uses attributable to forestry exist despite implementation of the 6217(g) measures.

PROPOSED DECISION: Washington has satisfied these two conditions.

RATIONALE: Washington relies on several processes for developing and revising management measures in critical coastal areas and areas necessary to attain and maintain water quality standards: the Puget Sound Partnership's Action Agenda, the TMDL process and effectiveness monitoring, the Comprehensive Monitoring Strategy and Action Plan for Watershed Health and Salmon Recovery (CMS), and the forest practices Adaptive Management Program. Through updates to the State's Forest Practices rules and Forest Practices Board Manual, Washington has also adopted additional management measures that apply both the rules and the Manual in locations where water quality impairments or degradation of beneficial uses attributable to forestry existed despite implementation of the 6217(g) management measures.

Additional Management Measures Process

As noted above, Washington has several processes in place for developing and revising management measures within critical coastal areas. One of these processes is through the Puget Sound Partnership. Within the Puget Sound basin, the Puget Sound Partnership convenes a multitude of entities to identify and track specific near- and long-term actions needed to restore and protect Puget Sound. Significant funding is provided to implement these actions. The Partnership also convenes a Science Panel and a Salmon Recovery Council which are both key

⁹⁴ Washington State Department of Natural Resources. Forest Best Practices Board Manual. Various Dates (Each section that includes guidelines for a different aspect of forest management has a different publication date). Accessed 5/10/2019. https://www.dnr.wa.gov/publications/fp_board_manual.pdf

to ensuring the Action Agenda is a comprehensive, science-based restoration plan. These two bodies also assess how well recovery efforts are achieving desired outcomes and identifying new threats.

Using an adaptive planning process and a network of collaborative partnerships, and informed by the latest effectiveness monitoring data, the State can adjust the Action Agenda as well as revise existing management measures or develop additional management measures to address nonpoint source pollution as needed. An example of this is the formation of thirteen Pollution Identification and Correction programs around Puget Sound.⁹⁵ The programs, funded in part by the National Estuary Program, bring together federal, state, and county governments, Indian tribes, non-governmental organizations, shellfish growers, and private citizens to take a comprehensive, innovative, and adaptive approach to finding and fixing nonpoint sources of pollution, such as pathogens and nutrients, that are degrading shellfish beds within their watershed. The programs led to the formation of several shoreline survey programs that targeted shoreline hotspots to identify and correct sources of fecal coliform bacteria, including failing septic systems, pet waste and agriculture runoff.

Washington also conducts effectiveness monitoring as part of its water quality improvement efforts. Monitoring enables the State to gauge how well projects are working to reduce pollution and evaluate whether the goals of a water quality improvement plan, such as a TMDL, have been achieved. Effectiveness monitoring also allows the State to determine if adjustments in restoration approaches are needed, including the need for additional management measures to improve impaired water bodies.

The State's Comprehensive Monitoring Strategy and Action Plan for Watershed Health and Salmon Recovery (CMS) focuses on monitoring salmon recovery regions and water resource inventory areas.⁹⁶ The effectiveness of various best management practices to control polluted runoff are routinely assessed as part of the CMS process. These assessments result in recommendations for how implementation of best management practices can be modified and informs natural resource managers as they make management decisions to improve salmon recovery and water quality in the state. This process provides another mechanism for developing and revising additional management measures, as needed, to improve impaired coastal waters.

Within the forestry arena, the Forest Practices Board (the Board) is the independent state agency responsible for adopting the rules necessary to fulfill the Forest Practices Act (Chapter 76.09 RCW). The rules (Title 222 WAC) are designed to protect public resources, such as water quality and fish habitat, while maintaining a viable timber industry. The rules are under regular review through the State's Adaptive Management Program (WAC 222-12-045) which serves to

⁹⁵ Washington Department of Health. EPA National Estuary Program Pathogens Grant: Pollution Identification and Correction (Website). Undated. Accessed 5/10/2019. <https://www.doh.wa.gov/CommunityandEnvironment/Shellfish/EPAGrants/PathogensGrant/PIC>

⁹⁶ Monitoring Oversight Committee. The Washington Comprehensive Monitoring Strategy and Action Plan for Watershed Health and Salmon Recovery. December 2002. Accessed 5/10/2019. <https://rco.wa.gov/wp-content/uploads/2019/07/MonitoringStrategy02.pdf>

ensure the rules meet, among others, objectives of the Clean Water Act and the Endangered Species Act. As part of the formal adaptive management process, an independent coordinated monitoring and evaluation research (CMER) body conducts science reviews and effectiveness studies of existing forest practices. The Board's policy committee is charged with transforming the CMER research into recommendations to the Board. The Board then decides what changes to make to the forest practices rules and manual to better protect water quality and listed species.

Additional Management Measures for Forestry

Washington has adopted additional management measures for forestry where water quality impairments or degradation of beneficial uses attributable to forestry exist despite implementation of the 6217(g) measures. In 1999, recognizing that the State's existing forest practices rules were not sufficient for meeting water quality standards or adequately protecting designated uses associated with salmon life stages in all places, the State, tribes, local governments, timber industry, federal agencies, and other stakeholders worked together to reach a landmark agreement that is reflected through the Forests and Fish Report (FFR).⁹⁷ The FFR includes various recommendations for improving Washington's forest practices that were subsequently adopted by reference into the Salmon Recovery Act (RCW 77.85.190).

The FFR recommendations led to significant changes to the State's forest practices rules (Title 222 WAC) in 2001, which established several additional management measures for forestry. The rule changes provide protections for water quality and habitat beyond pre-existing forest practices rules that were in effect when NOAA and EPA approved Washington's coastal nonpoint program with conditions. For example, in western Washington, the minimum riparian management zone width along fish-bearing streams was increased from 25 feet to 90-200 feet depending on site class, which is a measure of potential tree height growth (Chapter 222-16 WAC). The rule changes also included more protections from forest road construction and maintenance (Chapter 222-24 WAC). Significant progress was made to complete fish barrier removal and reduce sediment delivery into watercourses under road maintenance and abandonment plans approved for all industrial timber owners (WAC 222-24-050). Most landowners completed their road upgrades by the statutorily set October 31, 2016 deadline. This resulted in 19,390 miles of previously built forest roads being upgraded to current road standards and 5,192 fish passage barriers corrected, opening access to at least 2,962 miles of habitat within the coastal area⁹⁸ as of 2017.⁹⁹

⁹⁷ U.S. Fish and Wildlife Service, NOAA National Marine Fisheries Service, U.S. Environmental Protection Agency Region 10, the Office of the Governor of the State of Washington, the Washington State Department of Natural Resources, the Washington State Department of Ecology, the Colville Confederated Tribes, the Washington State Association of Counties, the Washington Forest Protection Association, and the Washington Farm Forestry Association. Forests and Fish Report. April 29, 1999. Accessed 5/10/2019. http://file.dnr.wa.gov/publications/fp_rules_forestsandfish.pdf

⁹⁸ Washington's coastal area is within the DNR regions Northwest, Olympic, Pacific Cascade, and South Puget Sound.

⁹⁹ Rodgers, Charlene. Forest Practices Habitat Conservation Plan, Annual Report. Washington State Department of Natural Resources, Forest Practices Program, Forest Practices Division, Olympia, WA. 2017. Accessed 5/10/2019.

In 2005, Washington completed the Forest Practices Habitat Conservation Plan (HCP), based largely on the FFR and subsequent rule changes, to protect aquatic and riparian-dependent species on more than nine million acres of state and private forestlands.¹⁰⁰ The Forest Practices HCP, a multi-stakeholder effort in response to the federally-designated threatened and endangered status of certain fish species, is a partnership between the United States Fish and Wildlife Service and National Marine Fisheries Service (collectively, the Services) and Washington State. Three State agencies, the Washington State Department of Natural Resources, the Washington Department of Fish and Wildlife, and the Washington Department of Ecology, work together to implement the Forest Practices HCP. The Services accepted the Forest Practices HCP and issued Incidental Take Permits to Washington on June 5, 2006, under the authority of the Endangered Species Act (ESA) Section 10. The Incidental Take Permits provide assurances for forest landowners that they cannot be prosecuted if they incidentally “take” (i.e., kill, harass, or harm the habitat of) aquatic or riparian-dependent species covered by the HCP, if conducting forest practices in compliance with forest practices rules (Title 222 WAC), including the Salmon Recovery Act.

Given the consensus about the degree of scientific uncertainty in the FFR goals and measures, strong adaptive management and monitoring elements were written into the agreement and subsequently adopted into state laws and regulations. WAC 222-08-035(2) defines expected adaptive management results and requires a new chapter in the Washington Forest Practices Board Manual (WAC 222-12-090(22)) to describe the process and procedures for achieving these results. The Washington Forest Practices Board adopted the new Adaptive Management Program chapter into the Board Manual in September 2005.¹⁰¹ This adaptive management program, discussed more in the “Additional Management Measures Process” section above, has brought together scientists and technicians from stakeholder groups to prioritize and test the effectiveness of the rules established in 2001.

Operating on a budget of approximately \$3.5 million per year, the adaptive management program has been developing better implementation tools and designing research studies to test whether the rules are meeting resource objectives and performance targets. Using peer reviewed methods, the adaptive management program has completed 39 research projects, and has another 20 in progress. For example, a series of related studies examining the effectiveness of the buffering prescriptions on small headwater streams are underway. The largest of these studies, which examines the effectiveness of the prescriptions in protecting public resources over a 10-

https://www.dnr.wa.gov/publications/fp_hcp_annrep_2017.pdf?pcbipz3

¹⁰⁰ Washington Department of Natural Resources. Forest Practices Habitat Conservation Plan. December 2005 (updated 2018). Accessed 5/10/2019. <https://www.dnr.wa.gov/programs-and-services/forest-practices/forest-practices-habitat-conservation-plan#HCP%20Sections>

¹⁰¹ Washington State Department of Natural Resources. Forest Best Practices Board Manual Section 22-Guidelines for Adaptive Management Program. 2013. Accessed 5/10/2019. https://www.dnr.wa.gov/publications/fp_board_manual_section22.pdf?r5gqxl

year period was completed in 2018.¹⁰² Together, the results of these studies will be used to determine what, if any, changes need to be made to the regulations. Studies are also moving forward to further refine road management practices to prevent sediment entering streams, examine the impacts of forestry practices on wetlands, and further refine the rules designed to prevent unstable slope failures.

Washington has continued to adopt additional measures for forestry as a result of the adaptive management process. For example, in 2009 the forestry practices rules were amended to increase the desired future condition basal area targets in riparian management zones in western Washington to more accurately reflect the latest scientific studies of mature forest conditions (WAC 222-30-021). The adaptive management program was also improved through rule amendments in 2013 (WAC 222-12-045). These changes reinvigorated the policy committee to consider CMER findings and make recommendations to the Board and established a master project schedule and workplan for CMER that would be reviewed every four years.

IX. MONITORING

1998 FINDING: Washington’s program does not include a plan to assess over time the success of the management measures in reducing pollution loads and improving water quality.

1998 CONDITION: Within one year, Washington will develop a plan that enables the State to assess over time the extent to which implementation of management measures is reducing pollution loads and improving water quality.

PROPOSED DECISION: Washington has satisfied this condition.

RATIONALE: Washington’s Coastal Nonpoint Program includes various monitoring and evaluation programs that, in combination, enable the State to assess over time the extent to which the implementation of management measures is reducing pollution loads and improving water quality.

The monitoring chapter (Chapter 7) of Ecology’s 2015 *Water Quality Management Program to Control Nonpoint Source Pollution* describes the State’s overall monitoring strategy for nonpoint source pollution.¹⁰³ The State takes a tiered approach that relies on ambient monitoring of

¹⁰² McIntyre, A.P., M.P. Hayes, W.J. Ehinger, S.M. Estrella, D. Schuett-Hames, and T. Quinn (technical coordinators). Effectiveness of Experimental Riparian Buffers on Perennial Non-fish-bearing Streams on Competent Lithologies in Western Washington. Cooperative Monitoring, Evaluation and Research Report CMER 18-100, Washington State Forest Practices Adaptive Management Program, Washington Department of Natural Resources, Olympia, WA. 2018. Accessed 5/10/2019.
https://www.dnr.wa.gov/publications/fp_cmer_hard_rock_phase1_2018.pdf

¹⁰³ Washington Department of Ecology. Washington’s Water Quality Management Plan to Control Nonpoint

physical and chemical parameters, macroinvertebrate stream assessments, bacterial monitoring, targeted intensive watershed monitoring, TMDL effectiveness monitoring, and effectiveness monitoring of certain best management practices. These core components of Washington's monitoring strategy are combined with other monitoring and evaluation programs, including specific BMP tracking efforts that are described in further detail in other management measure sections of this findings document, such as the PRISM and STIP databases, Puget Sound Partnership report card, and clean marina certification program. These multiple approaches provide a broader understanding of how the State's programs and practices to address nonpoint source pollution are working to improve water quality. Monitoring programs in Washington are designed to evaluate water quality trends, pinpoint problem waterbodies, identify causes and sources of water quality impairments, address known or suspected problems at individual sites or across regional areas, and/or evaluate whether water quality management activities have achieved the desired effect or goal.

Rivers and streams across the State are monitored through an ambient monitoring network. Within the coastal nonpoint management area, the monitoring network includes 37 fixed, long-term stations and three additional stations that are sampled on a rotating basin schedule. Both fixed stations and rotating stations are usually located on the lower portions of rivers or on major tributaries although a few stations are located in upper watersheds to represent un-impacted conditions. The State also monitors 39 marine or estuarine stations monthly and samples other sites on a rotating basis. The monthly marine monitoring data is augmented by data from several mooring sensors that collect continuous water quality data, aerial images and other remote sensing data, as well as water quality samplers attached to the State's ferries which collect transect data along the ferry routes throughout Puget Sound. The stations are routinely sampled for pH, temperature, bacteria, dissolved oxygen, nutrients, chlorophyll *a*, and water clarity.

In addition to Washington's core ambient water quality monitoring, the State undertakes other monitoring programs such as assessing stream macroinvertebrates, beach bacteria levels, shellfish growing areas, and the presence of pesticides in salmon-bearing streams to better understand the health of its waterways and their safety for specific uses. Washington has also identified four watersheds (Hood Canal, Lower Columbia River, northern Olympic Peninsula and the Skagit River Estuary) for intensive monitoring. These watersheds are intensively monitored for water quality, habitat conditions, and salmon response to assess the effectiveness of habitat restoration actions implemented to restore salmon.

Using data from its monitoring and evaluation efforts, Washington continually assesses its surface water quality to determine progress towards meeting water quality standards and protecting beneficial uses. Every few years, the State performs a water quality assessment to track the quality of its rivers, lakes, and marine waters. This information is reported through Washington's Integrated Report under the Clean Water Act Sections 305(b) and 303(d) that categorizes waters into "clean" (meeting water quality standards), "needs more data," and

Sources of Pollution. July 2015. Publication Number 15-10-015. Accessed 5/10/2019.
<https://fortress.wa.gov/ecy/publications/documents/1510015.pdf>

“polluted” (either needing a water clean-up plan, such as a TMDL, or already has a TMDL or alternative plan). The findings of the report can be used to target certain watersheds for monitoring or more intensive studies to better evaluate progress towards meeting water quality standards and to understand what actions are most effective at addressing impaired waters.

In addition, Washington developed an improved, integrated and coordinated monitoring and assessment program for Puget Sound called the Puget Sound Ecosystem Monitoring Program. It is a collaboration of state, federal, tribal and local government agencies, non-governmental organizations, watershed groups, businesses, academic researchers, local integrating organizations, and other private and volunteer groups and organizations—all dedicated to monitoring environmental conditions in Puget Sound with the goal of assessing progress toward the recovery of the health of Puget Sound. There are 12 workgroups focused on various aspects of Puget Sound monitoring, as needed. For example, the Effectiveness and Evaluation Workgroup brought together experts working on ecosystem recovery to share methods for measuring change and learn from each other about successful practices that help restore Puget Sound. Another workgroup, focused on stormwater, developed the *2010 Stormwater Monitoring and Assessment Strategy for the Puget Sound Region* that identifies specific recommendations for assessing and monitoring stormwater and stormwater practices.¹⁰⁴ Implementation of the strategy is underway, including effectiveness studies to assess and communicate which stormwater management actions work well and which do not, and status and trends studies to measure changes in Puget Sound lowland streams and urban nearshore areas as a result of stormwater management.

Washington’s effectiveness monitoring evaluates whether certain nonpoint source management practices have achieved the desired effect and how practices can be improved. The goal is to measure the cumulative effect of all activities in the watershed. Effectiveness monitoring is required as part of TMDL or other watershed-based pollution control plans and is also employed when State and federal funds are used to implement nonpoint source pollution control strategies. The evaluation process provides feedback that is useful to refine modeling analyses (e.g., for a TMDL) and pollutant reduction and watershed restoration strategies, including which BMPs to employ. In 2013, Ecology developed *Guidance for Effectiveness Monitoring for Total Maximum Daily Loads in Surface Waters* that describes Washington’s strategy for evaluating whether specified activities called for in TMDLs and other water cleanup plans achieve the results anticipated.¹⁰⁵

Recent effectiveness monitoring includes the Henderson Inlet watershed where 2017 results have shown that fecal coliform bacteria levels are declining despite an increase in human population

¹⁰⁴ Puget Sound Stormwater Work Group. 2010 Stormwater Monitoring and Assessment Strategy for the Puget Sound Region. June 30, 2010. Accessed 5/10/2019. <https://ecology.wa.gov/DOE/files/c2/c29ca31c-5d13-44e8-91a>

¹⁰⁵ Washington Department of Ecology. *Guidance for Effectiveness Monitoring for Total Maximum Daily Loads in Surface Waters*. May 2013. Publication Number 13-03-024. Accessed 5/10/2019. <https://fortress.wa.gov/ecy/publications/documents/1303024>

and parcel density within urban growth areas.¹⁰⁶ A comparison of 40 implemented projects and water quality trend data suggests that stormwater retrofits, septic-to-sewer projects, and land acquisition projects are likely responsible for the majority of the fecal coliform declines.

Washington's Comprehensive Monitoring Strategy and Action Plan for Watershed Health and Salmon Recovery (CMS) lays out a strategy for assessing the effectiveness of the State's salmon recovery and watershed planning and restoration efforts.¹⁰⁷ The CMS uses a probabilistic sampling framework and standard monitoring protocols to determine status and trends as well as best management practices effectiveness. As part of this effort, the Salmon Recovery Planning Board's 2017 Reach-Effectiveness Monitoring progress report (February 2018) assessed the effectiveness of a variety of best management practices, including: in-stream habitat creation, riparian planting, livestock exclusion, and habitat preservation.¹⁰⁸ The report also presented recommendations for how BMP implementation could be modified based on the findings. The status and trends and effectiveness monitoring data inform natural resource managers as they make watershed management decisions to improve salmon recovery and water quality in the state. Every two years, the monitoring data is provided to the Governor in a compiled *State of the Salmon* report that assesses the overall progress of Washington's salmon recovery.

The State also undertakes other specific effectiveness studies, as needed, to evaluate whether water quality management activities have achieved their desired goal. For example, the Washington Department of Agriculture conducted a study to assess the effectiveness of streamside vegetation in reducing pesticides loads during the aerial application of malathion on berry farms in Whatcom County.¹⁰⁹

Washington also conducts effectiveness monitoring to assess the riparian management prescriptions in its Forest Practice Rules. A multi-stakeholder group evaluates the effectiveness of the Forest Practices Rules. The monitoring program has completed 28 peer-reviewed monitoring and effectiveness studies to date with 17 others underway and several others being planned. These studies have examined the effectiveness of current and alternative riparian buffering strategies in protecting key water quality (stream temperature, water chemistry, sediment), habitat/channel stability (large woody debris (LWD)), and riparian (vegetation type, mortality rates, LWD recruitment) resources. In addition, the Washington Department of Natural

¹⁰⁶ Washington Department of Ecology. "Henderson Inlet Fecal Coliform Total Maximum Daily Load: Water Quality Effectiveness Monitoring Report". Publication Number 17-03-001. 2017. Accessed 5/10/2019. <https://fortress.wa.gov/ecy/publications/documents/1703001.pdf>

¹⁰⁷ Monitoring Oversight Committee. The Washington Comprehensive Monitoring Strategy and Action Plan for Watershed Health and Salmon Recovery. December 2002. Accessed 5/10/2019. <https://rco.wa.gov/wp-content/uploads/2019/07/MonitoringStrategy02.pdf>

¹⁰⁸ Washington Salmon Recovery Planning Board. *Reach-Scale Project Effectiveness Monitoring Program 2017 Annual Report*. Cramer Fish Sciences. February 2018. Accessed 5/13/2019. <https://rco.wa.gov/wp-content/uploads/2019/07/MonitoringReport17.pdf>

¹⁰⁹ Washington Department of Agriculture. "The Effectiveness of Riparian Vegetation at Intercepting Drift from Aerial Pesticide Application, Data Report." Publication Number 103-601 (N/1/17). 2016. Accessed 5/10/2019. https://agr.wa.gov/FP/Pubs/docs/103-601Malathion_Data_Report_2016.pdf

Resources implemented a compliance monitoring program in 2006 that examined compliance with riparian protection and road construction and maintenance requirements.

The Environmental Information Management System (EIM) is Ecology's main database for storing environmental monitoring data from Ecology and its partners. The EIM database is accessible over the internet to assist data-sharing between Ecology and external users. In addition, to support implementation tracking, Ecology is developing a TMDL and nonpoint source implementation database that will track the location of nonpoint source problems identified by Ecology during watershed evaluations, the sites that Ecology contacted after the evaluations, and the BMPs that were implemented in the watershed and their location. Not only will the new database be used to track projects funded by Ecology or that support a TMDL or other cleanup plan, but the agency also plans to work with partners to include data for projects implemented by outside groups, as well. The database is scheduled to be operational in 2020.

Together, Washington's suite of monitoring and assessment programs enable the State to assess, over time, the extent to which the implementation of management measures is reducing pollutant loads and improving water quality.

LIST OF ACRONYMS

6217(g)	Section 6217(g) of the Coastal Zone Act Reauthorization Amendments
BMP	best management practice
CAFO	concentrated animal feeding operation
CAO	critical area ordinance
CMER	coordinated monitoring and evaluation research
CMS	Comprehensive Monitoring Strategy and Action Plan for Salmon and Watersheds
CWA	Clean Water Act
CZARA	Coastal Zone Act Reauthorization Amendments
DOH	Washington Department of Health
EIM	Environmental Information Management System
EQIP	Environmental Quality Incentives Program
FFR	Forests and Fish Report
FOTG	Field Operating Technical Guide
GMA	Growth Management Act
HCP	Habitat Conservation Plan
IACC	Infrastructure Assistance Coordinating Council
IEGP	Irrigation Efficiencies Grant Program
LWD	large woody debris
MPPP	Manure Pollution Prevention Plans
NOAA	National Oceanic and Atmospheric Administration
Ecology	Washington State Department of Ecology
EPA	Environmental Protection Agency
ESA	Endangered Species Act
HPA	Hydraulic Project Approval
LID	low-impact development
MS4	municipal separate storm sewer system
NPDES	National Pollutant Discharge Elimination System
NRCA	Natural Resources Conservation Area
NRCS	Natural Resource Conservation Service
OSDS	onsite disposal systems
PRISM	Project Information System
RCW	Revised Code of Washington
SEPA	State Environmental Policy Act
SMA	Shoreline Management Act
SMP	Shoreline Master Program
STIP	State Transportation Improvement Program
SWMMWW	Stormwater Management Manual for Western Washington
TMDL	Total Daily Maximum Load
TSS	Total Suspended Solids
VTS	vegetative treatment systems
WAC	Washington Administrative Code
WDFW	Washington State Department of Fish and Wildlife
WPAA	Washington Pesticide Application Act

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WPCA	Washington Pesticide Control Act
WQFAP	Water Quality Financial Assistance Program
WQIP	Water Quality Implementation Plan
WRIA	Watershed Resource Inventory Area
WSDA	Washington State Department of Agriculture
WSDOT	Washington State Department of Transportation