Year 2018 Report
on
Activities to Implement

Washington State's Water Quality Plan
to Control
Nonpoint Source Pollution

April 2019

Purpose of Document

This *Year 2018 Report on Activities to Implement Washington State's Water Quality Plan to Control Nonpoint Source Pollution* is intended to meet the requirements of section 319 (h) (8) and (11) of the Federal Clean Water Act (CWA) (33 USC 1329). The report documents the activities and accomplishments of the State of Washington in achieving clean water, and the Department of Ecology's (Ecology) administration of the State's Nonpoint Source (NPS) Pollution Program. As described herein, Washington is making significant progress toward meeting the substantial on-the-ground, policy and political challenges presented by nonpoint water pollution.

Chapter 1
The Path towards Clean Water

Nonpoint source (NPS) pollution in our waterways is the greatest water quality challenge facing Washington State today. Ecology's NPS strategy focuses on multiple different implementation paths to achieve clean water. However, no matter the approach, we continually strive for greater regulatory clarity and a comprehensive strategy that uses all available tools to control and prevent nonpoint sources of pollution and achieve compliance with water quality standards.

Ecology's nonpoint strategy focuses on promoting the implementation of effective best management practices (BMPs) that support compliance with the water quality standards and prevent pollution discharge. The primary tools Ecology uses to facilitate and guide implementation are:

- TMDLs
- Straight to Implementation (STI)
- Ecology's Grant and Loan program and associated funding guidelines.

Additionally, Ecology also takes advantage of other opportunities and in order to achieve on-the-ground implementation when harmonizing social, financial, and technical resource conditions arise in a watershed. Current examples of this include the Clean Samish Initiative and the Whatcom County Clean Water Program. In both cases, we are building on the momentum of concern over shellfish bed closures to promote on the ground implementation of clean water BMPs. Likewise, Ecology's continued support of local Pollution Identification and Correction (PIC) programs will target watersheds in the Puget Sound area where a local entity has taken a key role in identifying pollution concerns and addressing pathogen and nutrient pollution from a variety of nonpoint sources, including on-site sewage systems, farm animals, pets, sewage from boats, and stormwater runoff.

Ecology's efforts to manage NPS pollution are underlain by a foundation of strategic policies intended foster and guide water quality protection efforts. Accordingly, this report highlights some of the policy level advances in our continual effort to map out the nonpoint source regulatory landscape, and subsequently navigate toward a more effective statewide nonpoint source program.

Finally, this report details the significant federal and state water quality protection investments made through our combined funding program. The grants and loans administered by this program are essential for advancing efforts to control NPS pollution. By facilitating the widespread implementation of effective BMPs, such as improved agricultural practices and riparian area restoration, this program is helping to create a paradigm shift in which NPS pollution control is viewed as important and customary by all contributing sectors.

Chapter 2
How EPA's 2018 319 Grant to Washington State was Distributed

In SFY2019, the federal 319 allocation was again distributed among three major work plan elements within Ecology as in SFY2018.

1. Local Grant and Loan Funding—Money was allocated and disbursed under the current water quality grant program as competitive grants to local governments, tribes, special purpose districts, and nonprofit groups during this last year. The application process for the Centennial Clean Water Fund, SRF, and 319 funding cycle is administered by the Financial Management Section of the Water Quality Program. Applicants requesting grants and loans for nonpoint projects are implementing activities in accordance with the Washington State Nonpoint Plan. EPA awarded $3,051,000 as the initial annual increment to this grant. Watershed projects were allocated $1,678,050 for pass through to nonpoint projects. Overall, Ecology awarded a total of 26 nonpoint projects, of those 8 received 319 funds during SFY2019 for a total obligation of $1,500,000. The remaining $178,050 and potential under-obligation will be used (liquidated) in support of seven Buffer Incentive projects.

2. Direct Implementation Fund—Ecology developed the Direct Implementation Fund (DIF) through its Enhanced Benefit Status. In SFY 2009, the DIF was re-designed to assist Ecology regional offices to directly implement local TMDLs and other priority nonpoint water quality projects. Funds were to be used to implement short duration on-the-ground practices that will provide a direct and demonstrable water quality benefit. Examples include the installation of riparian fencing, tree planting, and the use of agricultural best management practices (BMPs).

Ecology used DIF to address priority nonpoint problems. The following factors are used to prioritize: (1) Identified sources of nonpoint pollution causing the most significant harm to water quality; (2) Water bodies that are identified as not meeting water quality standards and/or have a completed TMDL or straight to implementation (STI) strategic implementation plan; (3) An actual ability to fix the problem (i.e. can implement the desired change and are ready to proceed).

In SFY 2013 Ecology reviewed the status of the DIF program along with the reduction in 319 federal allocations and decided not continue the DIF funding as stated above. In SFY 2015 (FFY 2014) Ecology decided to no longer create a specific set aside allocation of watershed implementation funds for regional DIF projects. Instead, we use unspent and/or de-obligated dollars from competitive projects with time remaining to initiate eligible DIF projects within available dollars. The same criteria and procedures for DIF project selection will be applied. The fund coordinator will notify regions as funds become available to solicit DIF applications. The DIF program will again be reviewed with each 319 annual distribution and implementation.

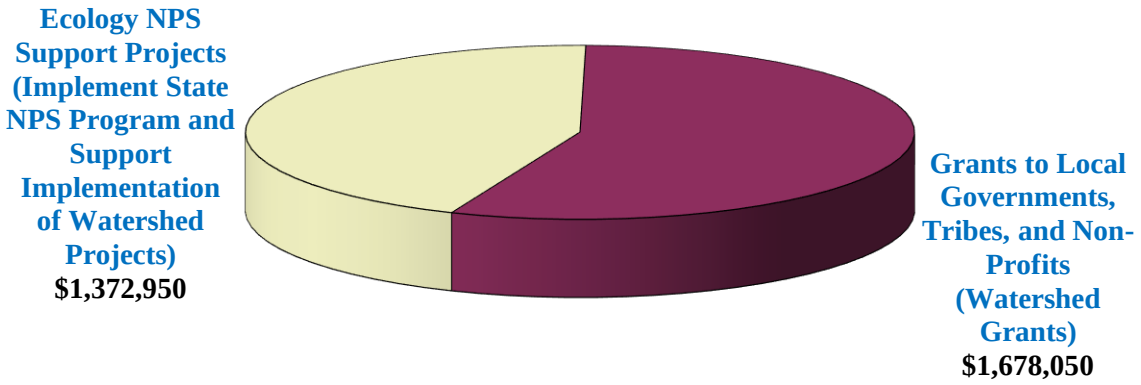
3. Water Quality's Nonpoint Program Support Projects—Ecology funded 10.95 staff FTEs for projects in SFY2019 that directly support the nonpoint program.

Overall, federal allocations were:

SFY 19 Allocation: $3,051,000

Total EPA: $3,051,000

Figure 2.1 - 319 Federal Allocations SFY 2019



The above figure shows the distribution of the federal allocation. Ecology applied 40 percent state matching funds using State Centennial Clean Water Fund dollars (CCWF). Eight nonpoint projects were funded with federal 319 dollars, and nine state funded CCWF nonpoint projects were selected as match, for a total of seventeen projects to fulfill the program.

Ecology's Integrated Grant and Loan Program

Ecology's Water Quality Program administers four major funding sources that provide grants and low-interest loans for projects to protect and improve water quality in Washington State. Ecology acts in partnership with state agencies, local governments, nonprofits (Section 319 only), and Indian tribes, by providing financial and administrative support for their water quality efforts. Ecology manages the four fund sources as the Water Quality Combined financial assistance program one with common guidelines, one funding cycle, application form, and offer list.

The Centennial Clean Water Fund (CCWF)

CCWF provides state sourced grants and low interest loans to fund activities to reduce nonpoint source pollution. In the SFY2019 funding cycle, a total of eleven projects were funded to control nonpoint sources of pollution, or to restore habitats affected by land uses that exacerbate nonpoint pollution problems. Nine of these were selected to fulfill the state match to the federal 319 dollars, for a dollar amount of $2,034,000.

Section 319

Federal 319 grants provide funds to reduce nonpoint sources of water pollution. In the SFY2019 funding cycle, eight projects were funded with 319 funds for a total of $1,500,000 obligated from a total allocation of $1,678,050. The remaining $178,050 will be used for seven projects selected to receive buffer incentive (see below: **National Marine Fisheries Service (NMFS) Riparian Buffer Requirements)**

In summary, nineteen projects were funded with the combined resources of Centennial (state match) and federal 319 dollars this year. Ecology also administers two other grant and loan funding sources that contribute to reductions in nonpoint source pollution.

The State Revolving Fund (SRF)

SRF provides low-interest loans for treatment facilities and for activities to reduce nonpoint sources of water pollution. The Green Project Reserves (GPR) with the possibility of forgivable principal normally boosts the number of SRF applications for nonpoint source activities and projects. In the SFY2019 funding cycle, **seven** projects were funded to control nonpoint pollution. The total obligation to date is $23,000,000 (one single land purchase accounted for $14,243,752)

Stormwater Financial Assistance Program (SFAP)

The SFAP is designed to fund stormwater projects and activities that have been proven effective at reducing environmental degradation from stormwater. Stormwater facilities and a limited suite of stormwater activities may be funded through SFAP. SFAP-eligible facility projects must reduce stormwater pollution from existing development, and will be reviewed by Ecology to ensure compliance with Ecology's design standards. In the SFY 2019 funding cycle, 21 projects were funded with SFAP funds for a total of $26,833,726.

National Marine Fisheries Service (NMFS) Riparian Buffer Requirements

The new buffer requirements initially caused a negative reaction among applicants for 319 project funding in SFY 2015. As an incentive to apply, Ecology offered 100 percent grant funding to implement the wider NMFS riparian buffer requirements. The incentive provided funding to pay full costs for the buffer implementation tasks in applications which ranked highest during the evaluation process. This incentive was intended to cover the 25 percent recipient match requirement to support site-specific planning, design, and implementation of riparian buffer planting projects, and associated livestock exclusion fencing only. All other BMPs and task activities were to be reimbursed at the normal 75 percent grant share with a 25 percent match required on the project level. In SFY 2019, **seven** projects were selected to receive the buffer (match) incentive equal to 25 percent of their riparian buffer total eligible cost providing additional 319 funds to their offer amount. These 319 funds were a part of the Watershed total allocation. A total of $178,050 of Section 319 funding is planned to support this incentive.

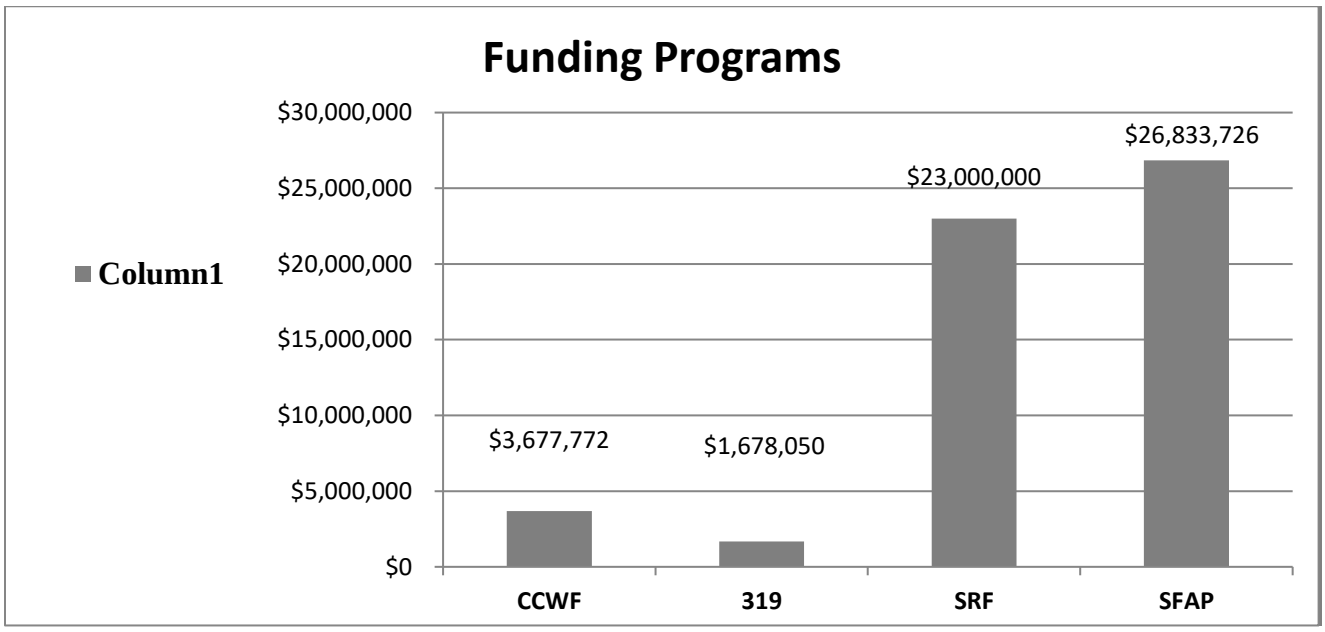
Delayed Capital Budget

In 2017, after the State Legislature convened three special sessions following the regular session they failed to pass a capital budget due to complications in finding solutions for issues including water rights and school funding. Although the operating budget, (which includes the 319

budget), passed at the close of the last special session on July 20, 2017, created an unprecedented situation forcing (Ecology) to delay project awards on our SFY 2018 draft offer list and intended use plan. EPA officially amended the agreement to recognize this delay. The capital budget includes state Centennial funds which provide the required 40 percent match. The capital budget was finally signed on January 19, 2018 and Ecology published the SFY 2018 final offer list and intended use plan on February 23, 2018. The SFY 2018 capital budget delay affected negotiations of both SFY 2018 and SFY 2019 agreements. Some negotiations took much longer than usual due to cost increases, changes in site conditions, staff turnover (both recipient agencies and Ecology), as well as the overlapping workload of two years of agreements. The range of effective dates for SFY 2018 is broader than usual, so BMP implementation may be spread out differently over the next three years. Some recipients continued work on their original schedule, and backdated their agreements, while others delayed work until their agreement was signed. This may be reflected in load reduction reports, and the timing of final report submissions, however all agreements are due to closeout before this grant expires. All of the SFY 2018 Section 319 and Centennial match agreements are now active. Five of the seventeen SFY 2019 Section 319 and Centennial match agreements are in the final stages of negotiation, nearing signature.

Total Washington State SFY2019 Grant and Loan Funds Awarded for

Nonpoint Source Watershed Projects



Total Washington State Grants and Loans

Project descriptions for all fund sources follow on the next pages.

2.1 Nonpoint Water Quality Grants and Loan

Nonpoint and OSS Projects for State Fiscal Year 2019							
Application Number	**Centennial Nonpoint Grant**	**Section 319 Grant**	**Buffer Incentive**	**Standard SRF Loan Total**	**Organization Name**	**Project Title**	**Short Description**
WQC-2019-Adopta-00002		$100,894			Adopt A Stream Foundation	Strawberry Fields Riparian Buffer Enhancement Part 2	The Strawberry Fields Riparian Buffer Enhancement Part 2 will improve water quality by restoring 5.8 acres of riparian habitat along approximately 2,622 linear feet of the Middle Fork Quilceda Creek and a tributary in Marysville, WA. This project will remove invasive vegetation and plant native trees to expand the forested buffer area to 100' on the creek banks not planted by previous projects.
WQC-2019-Adopta-00003		$187,010			Adopt A Stream Foundation	Olaf Strad Re-meander and Revegetation	The Olaf Strad Re-meander and Revegetation will improve water quality by restoring 690 linear and ditched feet of Olaf Strad Creek to 840 linear feet of restored habitat with an active floodplain. This will include approximately 3 acres of riparian habitat. This project will remove the creek from its current ditch, place it in a new meandering stream bed, remove invasive vegetation and plant native plants in order to create a forested buffer area of 100' on the new creek banks.
WQC-2019-BellPW-00117				$208,295	Bellingham city of - Public Works Department	Little Squalicum Estuary Water Quality Improvements	The project improves water quality in lower Little Squalicum Creek and nearshore Bellingham Bay by restoring an estuary in Little Squalicum Park on the perimeter of the City of Bellingham. The project area contains rare ecological features in an otherwise urban landscape surrounded by commercial, industrial, residential, and institutional land uses. The vegetated saltmarsh and riparian plantings will provide thermal protection and surface water filtration for freshwater and marine inputs.

2.1 Nonpoint Water Quality Grants and Loan

Nonpoint and OSS Projects for State Fiscal Year 2019							
Application Number	**Centennial Nonpoint Grant**	**Section 319 Grant**	**Buffer Incentive**	**Standard SRF Loan Total**	**Organization Name**	**Project Title**	**Short Description**
WQC-2019-BellPW-00118	$500,000			$1,662,515	Bellingham city of - Public Works Department	Anderson Creek Water Quality Improvements	The Anderson Creek Water Quality Improvements project will improve water quality and salmon habitat in Anderson Creek and support water quality improvements in Lake Whatcom by reversing historical impacts and restoring natural processes within the Anderson Creek corridor. The project will address impairments in Anderson Creek and complement existing efforts toward the protection and restoration of 303(d)-listed Lake Whatcom, the drinking water source for over 100,000 Whatcom County residents.
WQC-2019-BellPW-00121	$406,314			$135,438	Bellingham city of - Public Works Department	West Cemetery Creek Water Quality Improvements	This project will directly address a high-priority water quality impairment within a semi-urban watershed for the purposes of protecting biotic integrity, anadromous fish, and previously-installed water quality and habitat improvements downstream of this project site. This project will implement solutions to address extensive sediment migration within West Cemetery Creek, which will in turn protect and restore natural processes in the Whatcom Creek corridor.
WQC-2019-ClCoPH-00191				$6,000,000	Clark County - Public Health Department	Regional Clean Water Loan Program expansion to improve water quality.	Grow Regional Clean Water Loan Program (RLP) into 20+ county partnership with nonprofit lender to offer financial assistance via affordable loans for failing onsite septic systems. RLP reduces barriers to regulatory compliance and improves surface/groundwater quality benefitting public health, ecosystem health, shellfish harvesting. Proposal adds counties in Eastern WA/Columbia River Basin, deepens support to Puget Sound/Coastal Counties, and increases lending capital for low-income households.

2.1 Nonpoint Water Quality Grants and Loan

Nonpoint and OSS Projects for State Fiscal Year 2019							
Application Number	**Centennial Nonpoint Grant**	**Section 319 Grant**	**Buffer Incentive**	**Standard SRF Loan Total**	**Organization Name**	**Project Title**	**Short Description**
WQC-2019-CoLaTr-00167		$500,000			Columbia Land Trust	Washougal River Watershed Property Protection	Acquire approximately 1200 acres in the Washougal River Watershed including 9.67 miles of river and tributaries. The land acquisition will provide watershed protection and management that will protect the land from current industrial timber harvests and rock and mineral extraction and change the land management practices to benefit water temperatures and water quality through a watershed management plan that will mange the forest and natural processes. Estimated purchase price is $2,500,000.
WQC-2019-KCoNWC-00035	$250,000				King County - Noxious Weed Control Program	King County Riparian Buffer Enhancement through Restoration and Stewardship	Development and implementation of a comprehensive approach for riparian restoration and stewardship in the major headwater and middle reaches of the Skykomish, Snoqualmie, Green-Duwamish and Cedar Rivers in King County.
WQC-2019-KiCoDi-00006					King Conservation District	Community-Based Social Marketing to Reduce Pollutant Loading in Lower White	King Conservation District, King County, Enumclaw, and WSDA will team up to pilot a social marketing approach to develop strategies that change behaviors and identify the key best management practices for the target audience to reduce pollutant loading in sub-basins draining to the Lower White River, including Boise, Pussyfoot and Second Creeks. The strategies will be implemented to identify and promote behaviors to reduce fecal coliform bacteria loading to the 303(d) listed Lower White River.

2.1 Nonpoint Water Quality Grants and Loan

Nonpoint and OSS Projects for State Fiscal Year 2019							
Application Number	**Centennial Nonpoint Grant**	**Section 319 Grant**	**Buffer Incentive**	**Standard SRF Loan Total**	**Organization Name**	**Project Title**	**Short Description**
WQC-2019-KitCCD*-00078	$354,535		$24,543		Kittitas County - Conservation District	Upper Yakima River Restoration	Kittitas Conservation District working with Kittitas Conservation Trust (KCT) to utilize funds to improve water quality by enhancing river and floodplain function in a highly productive, flow regulated reach of the Upper Yakima River. Project elements include improving connectivity to existing riparian areas and floodplains through side channel reconnection, installation of large wood to raise water surface elevations and divert flow, and installing riparian revegetation to improve shading to lower water temperatures in a salmon bearing river system.
WQC-2019-KitCCD*-00141					Kittitas County - Conservation District	Wilson Creek Water Quality Improvements	This partnership with Mid-Columbia Fisheries Enhancement Group will address temperature and pollutants in WRIA 39's Wilson Creek, which is impaired for temperature, fecal coliform, dissolved oxygen, pH and dieldrin. The project will reduce summer temperatures in the lower reaches of the stream by increasing instream flow and riparian vegetation. It will reduce pollutant input by expanding vegetative buffers, encouraging volunteer stewardship, and planning for future restoration.
WQC-2019-KooCom-00068					Kooskooskie Commons	Water Quality Improvement in Yellowhawk Creek & W. Little Walla Walla River	The RECIPIENT will implement the Yellowhawk and West Little Walla Walla River Riparian Restoration Project to improve water quality in Yellowhawk Creek and the West Little Walla Wall River. The RECIPIENT will install riparian buffers, monitor water quality, perform public education, and explore land trust easements for long-term protection of riparian areas and water trust agreements to protect flows and cold water inputs into Yellowhawk Creek and the West Little Walla Walla River.

2.1 Nonpoint Water Quality Grants and Loan

Nonpoint and OSS Projects for State Fiscal Year 2019							
Application Number	**Centennial Nonpoint Grant**	**Section 319 Grant**	**Buffer Incentive**	**Standard SRF Loan Total**	**Organization Name**	**Project Title**	**Short Description**
WQC-2019-LCEP-00199		$110,384	$24,587		Lower Columbia Estuary Partnership	Burnt Bridge Creek Stormwater OSPREY Project	The Burnt Bridge Creek Stormwater OSPREY Project will establish a native riparian forest along 3-acres of Burnt Bridge Creek; provide comprehensive stormwater/clean water education to 24 teachers and 672 students from nearby schools; and engage students and parents in native tree plantings at the site. Project activities will address water quality listings on Burnt Bridge Creek (temperature, pH, fecal bacteria, dissolved oxygen) and help implement Ecology's upcoming Burnt Bridge Creek TMDL.
WQC-2019-LCEP-00205		$113,405			Lower Columbia Estuary Partnership	Woodin Creek Stormwater OSPREY Project	The Woodin Creek Stormwater OSPREY Project engages schools and community members in the Woodin Creek watershed in stormwater education and riparian enhancement. The project teaches students and community members about the connections between land use, impervious surfaces, stormwater, and water quality. The project will also improve water quality, increase habitat complexity, lower stream temperatures, and increase DO levels along Woodin Creek, and help implement the Salmon Creek TMDL.
WQC-2019-LeCoCD-00030	$46,510				Lewis County Conservation District	No Till-Drill for Sediment Reduction in the Chehalis Basin	The Lewis County Conservation District is looking to purchase a no-till drill that will be available to farmers for a wide variety of uses. Examples would include planting cover crops into crop residue, reseeding worn out pastures instead of tilling them up, and planting relay crops. Fall and spring rains coincide with the times that farmers will be planting. This will prevent a plowed field from having soil erosion and nutrient runoff that ultimately ends up in local streams.

2.1 Nonpoint Water Quality Grants and Loan

Nonpoint and OSS Projects for State Fiscal Year 2019							
Application Number	**Centennial Nonpoint Grant**	**Section 319 Grant**	**Buffer Incentive**	**Standard SRF Loan Total**	**Organization Name**	**Project Title**	**Short Description**
WQC-2019-LiCoCD-00163		$118,886	$11,833		Lincoln County Conservation District	Mielke WRP Wetland and Riparian Restoration	This project will implement wetland and riparian restoration on a 110-acre perpetual conservation easement in WRIA 62, Pend Oreille Watershed, which does not meet water quality standards. This private property was previously in agriculture. A USDA-NRCS Wetlands Reserve Program (WRP) easement permanently eliminated cattle grazing, but this exciting work will restore wetlands and riparian areas in a formerly drained and hayed meadow, to benefit wildlife and water quality.
WQC-2019-LuInBC-00138	$406,112				Lummi Indian Business Council	Fine Sediment Reduction by Floodplain Connectivity in the SF Nooksack River	Fine sediment is a major limiting factor to Puget Sound Chinook in the Nooksack watershed. To reduce fine sediment impacts, the project goals are to reconnect the South Fork Nooksack River mainstem to its left floodplain during 1-year or greater discharges, increase pool habitat with woody cover, reduce the input of fine sediment to the mainstem from the Elk Flats slide on the right bank river bend, and reduce the in-channel storage of fine sediment downstream from the Elk Flats slide.
WQC-2019-NisqIT-00217				$14,243,752	Nisqually Indian Tribe	Mashel River and Ohop Creek Water-Quality Protection	This project will acquire for permanent ecosystem services based management and restoration 5,221 acres of timberlands and 42 miles of stream and tributary shoreline in the Nisqually Watershed's Mashel River sub-basin and 2,560 acres of timberlands and 26 miles of stream and tributary shoreline in the watershed's Ohop Creek sub-basin.

2.1 Nonpoint Water Quality Grants and Loan

Nonpoint and OSS Projects for State Fiscal Year 2019							
Application Number	**Centennial Nonpoint Grant**	**Section 319 Grant**	**Buffer Incentive**	**Standard SRF Loan Total**	**Organization Name**	**Project Title**	**Short Description**
WQC-2019-NookIT-00105	$129,826		41,799.50		Nooksack Indian Tribe	South Fork Nooksack Temperature TMDL Implementation	The Nooksack Tribe proposes a riparian restoration project in degraded streamside forest stands along the South Fork Nooksack River. The project covers conifer planting and maintenance in 48.6 acres of deciduous riparian forest at three sites. The project is designed to set sites on the trajectory to mature coniferous forest. This project implements the recommendations of the Draft South Fork Nooksack Temperature TMDL and the associated EPA Region 10 Climate Change and TMDL Pilot.
WQC-2019-OkHiAl-00204		$174,578	$10,331		Okanogan Highlands Alliance	Triple Creek Water Quality Restoration Project, Phase 2	Phase 2 of the project will improve water quality by building on the floodplain reconnection that began in Phase 1, addressing issues caused by severe channel incision in Myers Creek near Chesaw. Instream structures will aggrade the streambed even higher and add more stream length, improving water quality by re-establishing floodplain processes. Combining instream work with buffer widening and effective outreach, this project will catalyze wetland recovery that restores water quality functions.
WQC-2019-PaloCD-00077	$500,000				Palouse Conservation District	Thinking Outside the Fertilizer Box: Conservation on Union Flat Creek	Palouse Conservation District will implement two miles of riparian buffers and 9,000 acres of direct seeding to improve water quality in the Palouse River Basin. Effects of riparian restoration and converting from conventional tillage to direct seeding will be monitored to determine effects on stream water quality. We will implement a demonstration project for precision nutrient management on 1,200 acres, providing outreach and education with field days, workshops, and curriculum development.

2.1 Nonpoint Water Quality Grants and Loan

Nonpoint and OSS Projects for State Fiscal Year 2019							
Application Number	**Centennial Nonpoint Grant**	**Section 319 Grant**	**Buffer Incentive**	**Standard SRF Loan Total**	**Organization Name**	**Project Title**	**Short Description**
WQC-2019-PaloCD-00165	$499,919		TBD		Palouse Conservation District	Palouse Basin BMP Implementation for Water Quality Improvement	The Palouse River Basin has been highly degraded over the past century. To address and improve water quality issues outlined in the TMDLs and Clean Water Act's 303(d) list, we have identified multiple sites in the Palouse watershed on both the North and South Fork Palouse River, and on Union Flat Creek, for active riparian/wetland restoration emphasizing function to maximize non-point source pollutant reduction, help control water temperature, decrease soil erosion and increase bank stability.
WQC-2019-SkCoHD-00127				$750,000	Skagit County - Health Department	Skagit County Non-point Septic Repair Fund	The purpose of this project is to continue Skagit County's county-wide non-point local loan repair fund. This project provides loans to qualified property owners for the repair of failing individual on-site septic systems in the Shellfish Protection District, including Marine Recovery Areas (MRAs), Sensitive Areas (SAs), or contribute directly or indirectly to poor water quality in water ways that lead to shellfish beds in the Puget Sound as well as recreational waters in Skagit County.
WQC-2019-SkCoPW-00102	$450,647				Skagit County - Public Works Department	Maddox Creek Culvert Removal and Stream Enhancement	Sediment is dumped into the Maddox Creek watershed through a perched culvert installed in preparation of development in the area, but development never occurred. The culvert is unused and is increasing the rate of fine sediment input while blocking documented salmonids from moving upstream in the system. Skagit County in partnership with the City of Mount Vernon proposes removing the culvert to provide water quality benefits and improve rearing habitat.

2.1 Nonpoint Water Quality Grants and Loan

Nonpoint and OSS Projects for State Fiscal Year 2019							
Application Number	**Centennial Nonpoint Grant**	**Section 319 Grant**	**Buffer Incentive**	**Standard SRF Loan Total**	**Organization Name**	**Project Title**	**Short Description**
WQC-2019-SnohCD-00063	$152,129				Snohomish Conservation District	North Creek Riparian Restoration Project	The Snohomish Conservation District will re-forest North Creek on two properties to address high water temperatures and low dissolved oxygen levels in the basin. A total of eleven acres will be planted to improve water quality and habitat in the basin by increasing riparian forest cover and restoring healthy wetland hydrology. Workshops and site visits will educate landowners in the basin about responsible stewardship of their properties to prevent water quality pollution.
WQC-2019-SnohCD-00146	$23,030	$194,843	$50,485		Snohomish Conservation District	Restoration at the Riverfront: Snohomish River at RM 13 Restoration Project	The Snohomish Conservation District will partner with the City of Snohomish to restore a 3 – 4 acre riparian buffer along the right bank of the Snohomish River and a 1.3 – 1.5 acre wetland buffer adjacent to the river on the City's multi-use park. The project will integrate salmon habitat restoration, water quality improvements, recreation, and agriculture to serve as an example of how these uses can co-exist. The City and District will engage the community through meetings and volunteer events.
Total	**$3,719,022**	**$1,500,000**	**$178,050***	**$23,000,000**			*This is a subtotal, full total TBD when WQC-2019-PaloCD-00165 is finalized)

2.2 WA Load Reduction Estimates by Project

EPA has inquired about yearly fluctuations in the total load reduction estimates found in this section. Load reduction estimates may differ from year to year based on several factors. Significantly, Washington State implements many BMP projects that will not have a nitrogen, phosphorus, or sediment load estimate because they are intended to reduce temperature and/or fecal coliform—which are not accounted for in STEPL. Temperature and fecal coliform impairments are of particular concern because of their impacts on shellfish and salmon. Ecology has therefore placed a high priority on implementing BMPs that address these pollutants. Further, implementation of BMPs that target temperature and fecal coliform help address tribal treaty rights at risk. While these efforts may not be adequately captured in the below table, we believe that they are good investments. We have also included a list of best management practice (BMP) implementation this year (see table in section 2.3). These two tables, taken together, provide a more accurate picture of implementation work funded during the past year, as well as, the resulting environmental benefits.

Pollutant Type	State Project Number	Project Title	SUM(Load Reduction Estimate)	Unit of Measure
Biochemical Oxygen Demand (BOD)	WQC-2015-Adopta-00116	Catherine Creek Riparian Buffer Enhancement - Adopt A Stream Foundation	0.3	LBS/YR
Biochemical Oxygen Demand (BOD)	WQC-2015-Adopta-00117	Northpointe Park Riparian Enhancement Project - Adopt A Stream Foundation	0.3	LBS/YR
Biochemical Oxygen Demand (BOD)	WQC-2015-Adopta-00115	Sorgenfrei Creek Riparian Restoration - Adopt A Stream Foundation	0.1	UNITS
Biochemical Oxygen Demand (BOD)	WQC-2015-AmFaTr-00153	Farmers for Clean Water - American Farmland Trust	0.1	MG/L
Biochemical Oxygen Demand (BOD)	WQC-2015-OkanCD-00009	Matching: Okanogan Water Quality BMPs Project - Okanogan Conservation District	6548	LBS/YR
Biochemical Oxygen Demand (BOD)	WQC-2016-Adopta-00363	Hayho Creek Riparian Enhancement Project	0.3	LBS/YR
Biochemical Oxygen Demand (BOD)	WQC-2016-CaLaTr-00218	Mima Creek Riparian Restoration Project	34.1	LBS/YR
Biochemical Oxygen Demand (BOD)	WQC-2016-ClaPUD-00374	East Fork Lewis - Zimmerly Restoration Project	0.016	LBS/YR
Biochemical Oxygen Demand (BOD)	WQC-2016-FerrCD-00069	Water Quality Improvement in Ferry County	1	LBS/YR
Biochemical Oxygen Demand (BOD)	WQC-2016-KooCom-00082	Improving Water Quality: Riparian Restoration on Lower Yellowhawk Creek	35.6	LBS/YR
Biochemical Oxygen Demand (BOD)	WQC-2016-NoYaCD-00197	Naches River Basin Water Quality Restoration Project	75.5	LBS/YR
Biochemical Oxygen Demand (BOD)	WQC-2016-PaloCD-00146	Riparian Restoration for NPS and Temp. Control, South Fork Palouse River	367	LBS/YR
Biochemical Oxygen Demand (BOD)	WQC-2016-SnohCD-00090	Monroe Wetland Park Restoration Project	2.5	LBS/YR
Biochemical Oxygen Demand (BOD)	WQC-2016-SnohCD-00314	Trib 64 (Lower Pilchuck Creek) Riparian Restoration and LWD Project	2.1	LBS/YR
Biochemical Oxygen Demand (BOD)	WQC-2016-TLC-00278	Riparian Restoration and Stormwater Education in the Hangman Creek Watershed	12.3	LBS/YR
Biochemical Oxygen Demand (BOD)	WQC-2017-Adopta-00131	Upper Catherine Creek Riparian Restoration	0.2	LBS/YR
Biochemical Oxygen Demand (BOD)	WQC-2017-Adopta-00223	Strawberry Fields Buffer Enhancement	0.4	LBS/YR
Biochemical Oxygen Demand (BOD)	WQC-2017-FoCrCD-00067	Douglas County Regional Direct Seed Program	356.7	LBS/YR
Biochemical Oxygen Demand (BOD)	WQC-2017-UndeCD-00095	WRIA 29 Water Quality Implementation Project	0.8	LBS/YR
Biochemical Oxygen Demand (BOD)	WQC-2018-LCEP-00122	Salmon Creek Stormwater OSPREY Project	0	LBS/YR
Biochemical Oxygen Demand (BOD)	WQC-2018-SFEG-00090	Skagit River Rural Community Riparian Stewardship	8.3	LBS/YR
Biochemical Oxygen Demand (BOD)	WQC-2018-TLC-00139	Spokane River Watershed Riparian Restoration & Water Quality Education	69.6	LBS/YR

2.2 WA Load Reduction Estimates by Project

Nitrogen	WQC-2015-Adopta-00116	Catherine Creek Riparian Buffer Enhancement - Adopt A Stream Foundation	2.9	LBS/YR
Nitrogen	WQC-2015-Adopta-00117	Northpointe Park Riparian Enhancement Project - Adopt A Stream Foundation	2.9	LBS/YR
Nitrogen	WQC-2015-Adopta-00115	Sorgenfrei Creek Riparian Restoration - Adopt A Stream Foundation	3	LBS/YR
Nitrogen	WQC-2015-AmFaTr-0015	Farmers for Clean Water - American Farmland Trust	7.8	LBS/YR
Nitrogen	WQC-2015-OkanCD-00009	Matching: Okanogan Water Quality BMPs Project - Okanogan Conservation District	6548	LBS/YR
Nitrogen	WQC-2016-Adopta-00363	Hayho Creek Riparian Enhancement Project	17.6	LBS/YR
Nitrogen	WQC-2016-CaLaTr-00218	Mima Creek Riparian Restoration Project	59.4	LBS/YR
Nitrogen	WQC-2016-ChCoNR-00298	Wenatchee Watershed Riparian Enhancement	30.6	LBS/YR
Nitrogen	WQC-2016-ClaPUD-00374	East Fork Lewis - Zimmerly Restoration Project	0.41	LBS/YR
Nitrogen	WQC-2016-FerrCD-00069	Water Quality Improvement in Ferry County	0.5	LBS/YR
Nitrogen	WQC-2016-KooCom-00082	Improving Water Quality: Riparian Restoration on Lower Yellowhawk Creek	18	LBS/YR
Nitrogen	WQC-2016-MCFEG-00215	Yakima River Side Channels, WRIA 37	0	LBS/YR
Nitrogen	WQC-2016-NoYaCD-00197	Naches River Basin Water Quality Restoration Project	62.7	LBS/YR
Nitrogen	WQC-2016-PaloCD-00146	Riparian Restoration for NPS and Temp. Control, South Fork Palouse River	183.6	LBS/YR
Nitrogen	WQC-2016-SnohCD-00090	Monroe Wetland Park Restoration Project	27.3	LBS/YR
Nitrogen	WQC-2016-SnohCD-00314	Trib 64 (Lower Pilchuck Creek) Riparian Restoration and LWD Project	35.3	LBS/YR
Nitrogen	WQC-2016-SpoCoD-00222	Spokane NPS Reduction Implementation and BMP Database Project	14.1	LBS/YR
Nitrogen	WQC-2016-StCoCD-00178	Lake Spokane Phosphorus Input II	23.4	LBS/YR
Nitrogen	WQC-2016-TLC-00278	Riparian Restoration and Stormwater Education in the Hangman Creek Watershed	18.2	LBS/YR
Nitrogen	WQC-2016-WilFiC-00284	Langlois Creek Restoration Project	6.9	LBS/YR
Nitrogen	WQC-2017-Adopta-00131	Upper Catherine Creek Riparian Restoration	12.7	LBS/YR
Nitrogen	WQC-2017-Adopta-00223	Strawberry Fields Buffer Enhancement	24.7	LBS/YR
Nitrogen	WQC-2017-ClaPUD-00122	East Fork Lewis Knotweed Control Project	0	LBS/YR
Nitrogen	WQC-2017-FoCrCD-00067	Douglas County Regional Direct Seed Program	515.4	LBS/YR
Nitrogen	WQC-2017-OkanCD-00188	Okanogan County Fire Non-Point Pollution Response	140.6	LBS/YR
Nitrogen	WQC-2017-StePar*-00049	Snoqualmie River Restoration with Salmon-Safe Agricultural Landowners	11	LBS/YR
Nitrogen	WQC-2017-UndeCD-00095	WRIA 29 Water Quality Implementation Project	0.8	LBS/YR
Nitrogen	WQC-2018-LCEP-00122	Salmon Creek Stormwater OSPREY Project	0.2	LBS/YR
Nitrogen	WQC-2018-SFEG-00090	Skagit River Rural Community Riparian Stewardship	1881.8	LBS/YR
Nitrogen	WQC-2018-SoSaSo-00177	Griffin - Snoqualmie Riparian Restoration	0	LBS/YR
Nitrogen	WQC-2018-SoSaSo-00177	Stillwater Natural Area Restoration Phase II	0	LBS/YR
Nitrogen	WQC-2018-SpoCoD-00127	Farmed Smart Certification and Direct Seed Loan Implementation Program	161363	LBS/YR
Nitrogen	WQC-2018-TLC-00139	Spokane River Watershed Riparian Restoration & Water Quality Education	91.9	LBS/YR
Phosphorus	WQC-2015-Adopta-00116	Catherine Creek Riparian Buffer Enhancement - Adopt A Stream Foundation	0.5	LBS/YR
Phosphorus	WQC-2015-Adopta-00117	Northpointe Park Riparian Enhancement Project - Adopt A Stream Foundation	0.5	LBS/YR
Phosphorus	WQC-2015-Adopta-00115	Sorgenfrei Creek Riparian Restoration - Adopt A Stream Foundation	0.4	LBS/YR
Phosphorus	WQC-2015-AmFaTr-00153	Farmers for Clean Water - American Farmland Trust	0.5	LBS/YR
Phosphorus	WQC-2015-OkanCD-00009	Matching: Okanogan Water Quality BMPs Project - Okanogan Conservation District	2520	LBS/YR
Phosphorus	WQC-2016-Adopta-00363	Hayho Creek Riparian Enhancement Project	1.2	LBS/YR
Phosphorus	WQC-2016-CaLaTr-00218	Mima Creek Riparian Restoration Project	15.5	LBS/YR

2.2 WA Load Reduction Estimates by Project

Phosphorus	WQC-2016-ChCoNR-00298	Wenatchee Watershed Riparian Enhancement	15.3	LBS/YR
Phosphorus	WQC-2016-ClaPUD-00374	East Fork Lewis - Zimmerly Restoration Project	0.1	LBS/YR
Phosphorus	WQC-2016-FerrCD-00069	Water Quality Improvement in Ferry County	0.2	LBS/YR
Phosphorus	WQC-2016-KooCom-00082	Improving Water Quality: Riparian Restoration on Lower Yellowhawk Creek	6.9	LBS/YR
Phosphorus	WQC-2016-MCFEG-00215	Yakima River Side Channels, WRIA 37	0	LBS/YR
Phosphorus	WQC-2016-NoYaCD-00197	Naches River Basin Water Quality Restoration Project	19	LBS/YR
Phosphorus	WQC-2016-PaloCD-00146	Riparian Restoration for NPS and Temp. Control, South Fork Palouse River	70.7	LBS/YR
Phosphorus	WQC-2016-SnohCD-00090	Monroe Wetland Park Restoration Project	4	LBS/YR
Phosphorus	WQC-2016-SnohCD-00314	Trib 64 (Lower Pilchuck Creek) Riparian Restoration and LWD Project	4.2	LBS/YR
Phosphorus	WQC-2016-SpoCoD-00222	Spokane NPS Reduction Implementation and BMP Database Project	4.7	LBS/YR
Phosphorus	WQC-2016-StCoCD-00178	Lake Spokane Phosphorus Input II	7.6	LBS/YR
Phosphorus	WQC-2016-TLC-00278	Riparian Restoration and Stormwater Education in the Hangman Creek Watershed	3.2	LBS/YR
Phosphorus	WQC-2016-WilFiC-00284	Langlois Creek Restoration Project	0.5	LBS/YR
Phosphorus	WQC-2017-Adopta-00131	Upper Catherine Creek Riparian Restoration	0.9	LBS/YR
Phosphorus	WQC-2017-Adopta-00223	Strawberry Fields Buffer Enhancement	1.7	LBS/YR
Phosphorus	WQC-2017-ClaPUD-00122	East Fork Lewis Knotweed Control Project	0	LBS/YR
Phosphorus	WQC-2017-FoCrCD-00067	Douglas County Regional Direct Seed Program	776.3	LBS/YR
Phosphorus	WQC-2017-OkanCD-00188	Okanogan County Fire Non-Point Pollution Response	50.8	LBS/YR
Phosphorus	WQC-2017-StePar*-00049	Snoqualmie River Restoration with Salmon-Safe Agricultural Landowners	8.2	LBS/YR
Phosphorus	WQC-2017-UndeCD-00095	WRIA 29 Water Quality Implementation Project	0.2	LBS/YR
Phosphorus	WQC-2018-LCEP-00122	Salmon Creek Stormwater OSPREY Project	0.1	LBS/YR
Phosphorus	WQC-2018-SFEG-00090	Skagit River Rural Community Riparian Stewardship	132.8	LBS/YR
Phosphorus	WQC-2018-SoSaSo-00177	Griffin - Snoqualmie Riparian Restoration	0	LBS/YR
Phosphorus	WQC-2018-SoSaSo-00177	Stillwater Natural Area Restoration Phase II	0	LBS/YR
Phosphorus	WQC-2018-SpoCoD-00127	Farmed Smart Certification and Direct Seed Loan Implementation Program	62540	LBS/YR
Phosphorus	WQC-2018-TLC-00139	Spokane River Watershed Riparian Restoration & Water Quality Education	17.2	LBS/YR
Sedimentation-Siltation	WQC-2015-Adopta-00116	Catherine Creek Riparian Buffer Enhancement - Adopt A Stream Foundation	0	TONS/YR
Sedimentation-Siltation	WQC-2015-Adopta-00117	Northpointe Park Riparian Enhancement Project - Adopt A Stream Foundation	0	TONS/YR
Sedimentation-Siltation	WQC-2015-Adopta-00115	Sorgenfrei Creek Riparian Restoration - Adopt A Stream Foundation	0	TONS/YR
Sedimentation-Siltation	WQC-2015-OkanCD-00009	Matching: Okanogan Water Quality BMPs Project - Okanogan Conservation District	4814	TONS/YR
Sedimentation-Siltation	WQC-2016-Adopta-00363	Hayho Creek Riparian Enhancement Project	0	TONS/YR
Sedimentation-Siltation	WQC-2016-CaLaTr-00218	Mima Creek Riparian Restoration Project	10.1	TONS/YR
Sedimentation-Siltation	WQC-2016-ChCoNR-00298	Wenatchee Watershed Riparian Enhancement	18	TONS/YR
Sedimentation-Siltation	WQC-2016-ClaPUD-00374	East Fork Lewis - Zimmerly Restoration Project	0.001	TONS/YR
Sedimentation-Siltation	WQC-2016-FerrCD-00069	Water Quality Improvement in Ferry County	0.1	TONS/YR
Sedimentation-Siltation	WQC-2016-KooCom-00082	Improving Water Quality: Riparian Restoration on Lower Yellowhawk Creek	5.6	TONS/YR
Sedimentation-Siltation	WQC-2016-MCFEG-00215	Yakima River Side Channels, WRIA 37	0	TONS/YR
Sedimentation-Siltation	WQC-2016-NoYaCD-00197	Naches River Basin Water Quality Restoration Project	11.8	TONS/YR

2.2 WA Load Reduction Estimates by Project

Sedimentation-Siltation	WQC-2016-PaloCD-00146	Riparian Restoration for NPS and Temp. Control, South Fork Palouse River	114.8	TONS/YR
Sedimentation-Siltation	WQC-2016-SnohCD-00090	Monroe Wetland Park Restoration Project	0.4	TONS/YR
Sedimentation-Siltation	WQC-2016-SnohCD-00314	Trib 64 (Lower Pilchuck Creek) Riparian Restoration and LWD Project	0.3	TONS/YR
Sedimentation-Siltation	WQC-2016-SpoCoD-00222	Spokane NPS Reduction Implementation and BMP Database Project	3.4	TONS/YR
Sedimentation-Siltation	WQC-2016-StCoCD-00178	Lake Spokane Phosphorus Input II	5.6	TONS/YR
Sedimentation-Siltation	WQC-2016-TLC-00278	Riparian Restoration and Stormwater Education in the Hangman Creek Watershed	1.9	TONS/YR
Sedimentation-Siltation	WQC-2016-WilFiC-00284	Langlois Creek Restoration Project	0	TONS/YR
Sedimentation-Siltation	WQC-2017-Adopta-00223	Strawberry Fields Buffer Enhancement	0.1	TONS/YR
Sedimentation-Siltation	WQC-2017-ClaPUD-00122	East Fork Lewis Knotweed Control Project	0	TONS/YR
Sedimentation-Siltation	WQC-2017-FoCrCD-00067	Douglas County Regional Direct Seed Program	893.9	TONS/YR
Sedimentation-Siltation	WQC-2017-OkanCD-00188	Okanogan County Fire Non-Point Pollution Response	257.6	TONS/YR
Sedimentation-Siltation	WQC-2017-StePar*-00049	Snoqualmie River Restoration with Salmon-Safe Agricultural Landowners	4.2	TONS/YR
Sedimentation-Siltation	WQC-2017-UndeCD-00095	WRIA 29 Water Quality Implementation Project	0.2	TONS/YR
Sedimentation-Siltation	WQC-2018-LCEP-00122	Salmon Creek Stormwater OSPREY Project	0	TONS/YR
Sedimentation-Siltation	WQC-2018-SFEG-00090	Skagit River Rural Community Riparian Stewardship	6.8	TONS/YR
Sedimentation-Siltation	WQC-2018-SoSaSo-00177	Griffin - Snoqualmie Riparian Restoration	0	TONS/YR
Sedimentation-Siltation	WQC-2018-SoSaSo-00177	Stillwater Natural Area Restoration Phase II	0	TONS/YR
Sedimentation-Siltation	WQC-2018-SpoCoD-00127	Farmed Smart Certification and Direct Seed Loan Implementation Program	47779	TONS/YR
Sedimentation-Siltation	WQC-2018-TLC-00139	Spokane River Watershed Riparian Restoration & Water Quality Education	7.2	TONS/YR

2.3 Water Quality Program Support Projects - (10.95 FTE @ $1,372,950)

1. Nonpoint Policy and Plan Coordination (2.40 FTE)

Ecology is responsible for overseeing and coordinating overall nonpoint plan implementation activities. Part of that role entails management, monitoring overall status, compiling progress reports and reporting back to EPA, taking the lead in coordinating with other Ecology programs, facilitating inter-state agency work, implementing activities that have statewide applicability, and performing technical outreach about the plan with local governments, tribes, and special purpose districts. In addition, Ecology is responsible for statewide nonpoint policy and planning.

Estimated cost of this work plan component – $ 325,835.

2. Financial Administration (.95 FTE)

Staff of the Water Quality Program's Financial Management Section administer, rank, and manage all Section 319 grant agreements and sub-grant funds and match funds passed through to local government entities, Indian tribes, and public not-for-profit groups. Staff ensures that funds are allocated to highest priority projects and deliverables and are spent in a fiscally responsible manner. Staff also closely tracks projects tasks and data from initiation to completion.

Estimated cost of this work plan component – $ 110,103.

3. TMDL Nonpoint Education and Outreach (.50 FTE)

Ecology initiates an education and outreach effort as part of every TMDL. The purpose is to ensure that people understand why we are doing a TMDL, what their responsibilities are likely to be, and how they can participate. A successful public interface makes TMDL and BMP implementation more likely and more effective.

Estimated cost of this work plan component – $ 59,232.

4. TMDL Development and Implementation (1.20 FTEs)

The primary job of a TMDL lead is managing the development of the TMDL and supporting documents for successful submission to and approval by EPA. This element includes knowledge of TMDL concepts and procedures, and the ability to work effectively with diverse groups within and outside Ecology. Other products required from this work element include development of an implementation strategy (IS) to go along with the TMDL, a summary of public involvement, and a water quality (detailed) implementation plan (WQIP). Once these procedures are documented, the TMDL lead coordinates and initiates implementation activities to meet the allocations set in the TMDL. In some cases, the TMDL lead also manages local implementation grants.

Estimated cost of this work plan component – $ 144,906

5. Nonpoint Technical Assistance and Compliance (2.70 FTEs)

The purpose of this work plan element is to provide technical assistance to landowners, as well as federal, state and local agencies, tribes, forests, and special purpose districts to

ensure their activities, projects, and programs meet state water quality laws, regulations, and standards. Areas of technical assistance include forest practices, agricultural activities, riparian restoration, complaint management, inspections, and nonpoint source enforcement. This work plan element will apply in watersheds that implement nonpoint TMDLs, or in watersheds with plans that focus on protection of threatened waters or implementation activities to clean up waters.

Estimated cost of this work plan component – $ 327,854.

6.TMDL and Effectiveness Monitoring (3.20 FTEs)

This part of the plan designs and conducts monitoring studies to determine the effectiveness of nonpoint source management programs. Effectiveness monitoring, and ground water monitoring capture the success or failure of various voluntary and regulatory efforts. In addition, we will measure the effectiveness of specific implementation activities. Post TMDL and BMP monitoring is also conducted to verify that the pollutant controls result in the water body improving or meeting water quality standards. It tests the effectiveness of the implementation management programs/plans.

Estimated cost of this work plan component – $ 405,020.

2.4 Washington's 2018 Best Management Practices Implemented

BMP Type	State Project Number	Project Title	SUM (Number Installed)	Unit of Measure
Channel Bank Vegetation	WQC-2016-ChCoNR-0029	Wenatchee Watershed Riparian Enhancement	0.11	AC
			200.00	FT
Conservation Tillage Residue Management	WQC-2017-FoCrCD-0006	Douglas County Regional Direct Seed Program	2253.27	AC
	WQC-2018-SpoCoD-0012	Farmed Smart Certification and Direct Seed Loan Implementation Program	78780.00	AC
Fence	WQC-2017-OkanCD-0018	Okanogan County Fire Non-Point Pollution Response	20.00	AC
			2320.00	FT
	WQC-2017-UndeCD-0009	WRIA 29 Water Quality Implementation Project	0.34	AC
			300.00	FT
	WQC-2018-SFEG-00090	Skagit River Rural Community Riparian Stewardship	15.00	AC
			4230.00	FT
Heavy Use Area Protection	WQC-2015-AmFaTr-0015	Farmers for Clean Water - American Farmland Trust	1176.00	SQUARE FEET
Invasive Species/Noxious Weed Control	WQC-2016-OkHiAl-0012	Triple Creek Water Quality Restoration Project	1.30	AC
			1800.00	FT
	WQC-2017-ClaPUD-0012	East Fork Lewis Knotweed Control Project	132000.00	FT
	WQC-2018-SFEG-00090	Skagit River Rural Community Riparian Stewardship	23.70	AC
			7285.00	FT
	WQC-2018-SoSaSo-0017	Griffin - Snoqualmie Riparian Restoration	1.60	AC
			1150.00	FT
		Stillwater Natural Area Restoration Phase II	5.00	AC
			585.00	FT
	WQC-2019-OkHiAl-0020	Triple Creek Water Quality Restoration Project, Phase 2	1.44	AC
			2385.00	FT
Riparian Forest Buffer	WQC-2015-Adopta-0011	Northpointe Park Riparian Enhancement Project - Adopt A Stream Foundation	1.00	AC
		Sorgenfrei Creek Riparian Restoration - Adopt A Stream Foundation	0.33	AC
	WQC-2015-AmFaTr-0015	Farmers for Clean Water - American Farmland Trust	1640.00	LINEAR FEET
	WQC-2015-OkanCD-0000	Matching: Okanogan Water Quality BMPs Project - Okanogan Conservation District	4.50	AC
			1900.00	FT
	WQC-2016-FerrCD-0006	Water Quality Improvement in Ferry County	20.21	AC
			17088.00	FT
	WQC-2016-KooCom-0008	Improving Water Quality: Riparian Restoration on Lower Yellowhawk Creek	6.60	AC
			4052.00	FT

2.4 Washington's 2018 Best Management Practices Implemented

BMP Type	State Project Number	Project Title	SUM (Number Installed)	Unit of Measure
Riparian Forest Buffer	WQC-2016-NoYaCD-0019	Naches River Basin Water Quality Restoration Project	2.00	AC
	WQC-2016-NoYaCD-0019 WQC-2016-OkHiAl-0012	Naches River Basin Water Quality Restoration Project Triple Creek Water Quality Restoration Project	1000.00	FT
			0.33	AC
	WQC-2016-OkHiAl-0012 WQC-2016-SnohCD-0009	Triple Creek Water Quality Restoration Project Monroe Wetland Park Restoration Project	1800.00	FT
			270.00	UNITS
			8.00	AC
	WQC-2016-SnohCD-0009 WQC-2016-SnohCD-0031	Monroe Wetland Park Restoration Project Trib 64 (Lower Pilchuck Creek) Riparian Restoration and LWD Project	3750.00	FT
			6.97	AC
	WQC-2016-SnohCD-0031 WQC-2016-SpoCoD-0022	Trib 64 (Lower Pilchuck Creek) Riparian Restoration and LWD Project Spokane NPS Reduction Implementation and BMP Database Project	1500.00	FT
			7.30	AC
	WQC-2016-SpoCoD-0022 WQC-2016-TLC-00278	Spokane NPS Reduction Implementation and BMP Database Project Riparian Restoration and Stormwater Education in the Hangman Creek Watershed	2985.00	FT
			4.59	AC
	WQC-2016-TLC-00278 WQC-2016-WilFiC-0028	Riparian Restoration and Stormwater Education in the Hangman Creek Watershed Langlois Creek Restoration Project	2000.00	FT
			6.00	AC
	WQC-2016-WilFiC-0028 WQC-2017-Adopta-0013	Langlois Creek Restoration Project Upper Catherine Creek Riparian Restoration	500.00	FT
			4.50	AC
	WQC-2017-Adopta-0013 WQC-2017-Adopta-0022	Upper Catherine Creek Riparian Restoration Strawberry Fields Buffer Enhancement	1155.00	FT
			8.60	AC
	WQC-2017-Adopta-0022 WQC-2017-StePar*-000	Strawberry Fields Buffer Enhancement Snoqualmie River Restoration with Salmon-Safe Agricultural Landowners	2486.00	FT
			5.27	AC
	WQC-2017-StePar*-000 WQC-2018-LCEP-00122	Snoqualmie River Restoration with Salmon-Safe Agricultural Landowners Salmon Creek Stormwater OSPREY Project	3093.00	FT
			2.00	AC
	WQC-2018-LCEP-00122 WQC-2018-SFEG-00090	Salmon Creek Stormwater OSPREY Project Skagit River Rural Community Riparian Stewardship	1100.00	FT
			6.66	AC
	WQC-2018-SFEG-00090 WQC-2018-SoSaSo-0017	Skagit River Rural Community Riparian Stewardship Stillwater Natural Area Restoration Phase II	3504.00	FT
			3.50	AC
	WQC-2018-SoSaSo-0017 WQC-2018-TLC-00139	Stillwater Natural Area Restoration Phase II Spokane River Watershed Riparian Restoration & Water Quality Education	390.00	FT
			3.51	AC
	WQC-2018-TLC-00139 WQC-2019-OkHiAl-0020	Spokane River Watershed Riparian Restoration & Water Quality Education Triple Creek Water Quality Restoration Project, Phase 2	2775.00	FT
			0.54	AC
Stream Channel Stabilization	WQC-2019-OkHiAl-0020 WQC-2016-SpoCoD-0022	Triple Creek Water Quality Restoration Project, Phase 2 Spokane NPS Reduction Implementation and BMP Database Project	2385.00	FT
			7.30	AC

2.4 Washington's 2018 Best Management Practices Implemented

BMP Type	State Project Number	Project Title	SUM (Number Installed)	Unit of Measure
Stream Channel Stabilization Stream Habitat Improvement and Management	WQC-2016-SpoCoD-0022 WQC-2016-CaLaTr-0021	Spokane NPS Reduction Implementation and BMP Database Project Mima Creek Riparian Restoration Project	2985.00 4.11	FT AC
Stream Habitat Improvement and Management Streambank & Shoreline Protection	WQC-2016-CaLaTr-0021 WQC-2019-OkHiAl-0020	Mima Creek Riparian Restoration Project Triple Creek Water Quality Restoration Project, Phase 2	2632.60 1.73	FT AC
	WQC-2019-OkHiAl-0020 WQC-2016-PaloCD-0014	Triple Creek Water Quality Restoration Project, Phase 2 Riparian Restoration for NPS and Temp. Control, South Fork Palouse River	2385.00 0.08	FT AC
Streambank & Shoreline Protection	WQC-2016-PaloCD-0014 WQC-2016-StCoCD-0017	Riparian Restoration for NPS and Temp. Control, South Fork Palouse River Lake Spokane Phosphorus Input II	600.00 4.00	FT AC
	WQC-2016-StCoCD-0017	Lake Spokane Phosphorus Input II	3500.00	FT
Tree/Shrub Establishment	WQC-2016-KCWLRD-0026	Newaukum Creek Revegetation to Reduce Thermal Loading of Stream	12.40	AC
Tree/Shrub Establishment	WQC-2016-KCWLRD-0026 WQC-2016-MCFEG-00215	Newaukum Creek Revegetation to Reduce Thermal Loading of Stream Yakima River Side Channels, WRIA 37	1420.00 0.69	FT AC
	WQC-2016-MCFEG-00215 WQC-2017-OkanCD-0018	Yakima River Side Channels, WRIA 37 Okanogan County Fire Non-Point Pollution Response	1375.00 2.00	FT AC
	WQC-2017-OkanCD-0018	Okanogan County Fire Non-Point Pollution Response	400.00	FT

Unliquidated Obligations Report as of February 28, 2019

CWA 319 Grant Balance (Unliquidated Obligations) 2/2019						
Project	**Grant #**	**FY**	**Project Period**	**Grant Award Amount (Fed)**	**Balance (ULO)**	**% ULO**
WA-FA10	C9-00044909	15	7/1/2015 6/30/2020	$5,872,900	$882,673	15.03%
WA-FA11	C9-00044910	17	7/1/2017 06/30/2022	$6,139,000	$3,919,293	63.84%
CWA 319 Grant Balance (Unliquidated Obligations)- Match 2/2019						
Project	**Grant #**	**FY**	**Project Period**	**Grant Award Amount (Fed)**	**Balance (ULO)**	**% ULO**
WA-FA10	C9-00044909	15	7/1/2015 6/30/2020	$3,915,267	$0.00	0.00%
WA-FA11	C9-00044910	17	7/1/2017 06/30/2022	$4,092,667	$1,208,422	29.52%

Chapter 3: Implementation in Action

In 2018 Ecology continued our internal and external efforts to achieve nonpoint pollution reductions. In addition to providing on-going guidance to our own staff, we have continued to build on external partnerships and use our nonpoint authority to make progress in cleaning up the state's waters.

Significant progress has occurred statewide in efforts to reduce nonpoint source pollution in the following areas:

- Multiple TMDL and TMDL-alternative development efforts, including the Puget Sound Nutrient Source Reduction Project.
- Implementing nonpoint TMDLs and alternative efforts through a combination of grants/loans and enforcement tools.
- Continued application of NMFS riparian buffers guidelines for Ecology-funded nonpoint grant and loan projects.[1]
- Developing agricultural BMP guidance for the State's nonpoint source pollution management plan.
- Ongoing coordination with important partners such as the WA Dept. of Agriculture, the Agriculture and Water Quality Advisory Committee, and the WA Forest Practices Board
- Working with conservation districts, local governments, and nonprofit organizations on nonpoint E & O efforts
- Finalizing a rule to address waste discharge from watercraft in Puget Sound as well as Lake Washington, Lake Union, and connecting their waters to Puget Sound.

The following sections in this chapter provide more information about the progress made in these areas.

3.1 Clean-up impaired waters and meet water quality standards (Goal 1)

3.1.1 Development of Watershed Clean-Up Plans (TMDLs and STI programs)

The number of TMDLs and STIs continued to grow in 2018 although resource levels remained stable.

Substantial work was done in 2018 to refine Washington's WQ-27 water cleanup priorities. The final WQ-27 priorities spreadsheet was submitted in August and in October, the geospatial data for the WQ-27 priorities was submitted to EPA for upload into EPA's ATTAINS database.

[1] More information on Ecology's funding programs and guidelines can be found at: https://ecology.wa.gov/About-us/How-we-operate/Grants-loans/Find-a-grant-or-loan/Water-Quality-Combined-Funding-Program.

Northwest Regional Office

In the Northwest Regional Office and Bellingham Field Office, we continued improving impaired waters using a combination of TMDLs, TMDL Alternatives, and Watershed Evaluations.

TMDLs

A number of TMDLs are currently in development: Padilla Bay Fecal Coliform, Pilchuck River Temperature/DO, Soos Creek Multiparameter, Whatcom Creek Fecal Coliform, Drayton Harbor Fecal Coliform, and the South Fork Nooksack Temperature TMDL. Staff changes delayed progress on the Padilla Bay FC TMDL mid-year. Technical work for the TMDL was completed and a new TMDL Lead staff resumed progress in late 2018. We now expect this TMDL to be completed in Spring/Summer 2019. Complications in the modeling of the Pilchuck River Temp/DO delayed its completion in 2018 but improvements in the rigor of the model and quality of the draft implementation plan were made. We expect this TMDL to be completed in summer 2019. New implementation actions to aid baseflow restoration and promote cold-water refuge creation are now included. The Soos Creek Temperature/DO/Bioassessment TMDL continues to progress as Ecology's science wing utilizes an HSPF hydrodynamic model in conjunction with traditional QUAL2KW, Shade, and other models for the first time in TMDL development. Our Bellingham Field Office put the South Fork Nooksack Temperature TMDL out for extended public review in 2018 and is awaiting technical resources to complete the Whatcom Creek and Drayton Harbor bacteria TMDLs.

The draft South Fork Nooksack River Temperature TMDL was completed and underwent a public comment period in 2018. Ecology has addressed the public comments and the publication process is underway. Ecology will publish and submit the final TMDL in 2019. TMDL development efforts for Whatcom Creek and Drayton Harbor have been temporarily postponed and will be resumed starting in 2020.

TMDL Alternatives

In order to speed the delivery of technical analysis and implementation solutions to local implementing agencies and the public, Ecology decided to complete the Sammamish River Temperature/DO study and the French Creek Temperature/DO study as TMDL Alternatives. Non-point sources are the primary problems in these watersheds and the final reports will include both data analysis and advisory-group-based implementation plans. Field data collected for the Sammamish River Temperature/DO TMDL was quality-checked and entered into our Environmental Information Management system and is waiting for a modeler to become available. Technical resources currently finishing the Pilchuck River TMDL will move on to the French Creek TMDL Alternative project in 2019. Watershed modeling work on our third TMDL Alternative, the Duwamish River Pollutant Loading Analysis, continued in 2018 along with targeted inspections of industrial facilities.

Puget Sound Nutrient Source Reduction Project

Ecology continued to make significant progress on our Puget Sound Nutrient Source Reduction Project in 2018 and began leading development of the Marine Water Quality Implementation

Strategy that is part of the Puget Sound recovery under the National Estuary Program. We launched a regional stakeholder process called the Puget Sound Nutrient Forum (Forum) with the objective of having dialogue with the regulated community, tribes, all levels of government, industry, academics, and local implementers about the effect of nutrient over-enrichment in the Sound.

During 2018 we ran the first set of modeling scenarios. Published the results in a report (Ahmed et al, 2019) at the beginning of 2019. These first model runs clearly establishes that: the sum of human nutrient sources in Puget Sound are causing violations of DO water quality standards, and that reductions from both point and nonpoint sources will be needed throughout Puget Sound. We will be evaluating the marine water quality response to watershed reductions during the second phase of modeling from July 2019 – June 2021.

Ecology is developing a TMDL alternative to address low DO caused by nutrient over-enrichment from human sources. We are working collaboratively with communities, tribes, stakeholders, and those currently working to reduce human nutrient sources to Puget Sound, discussing the problems caused by nutrient over-enrichment in marine waters and potential solutions at a series of 4-hour long meetings called the Nutrient Forum. The Forum is a space for discussion, learning, and getting feedback from the public so that we can learn together as Ecology continues to develop a Puget Sound Nutrient Management Plan that addresses both point and nonpoint sources.

This work will focus regional investments to control nutrients from point and non-point sources to help Puget Sound meet dissolved oxygen (DO) water quality criteria. More project information can be found here: https://ecology.wa.gov/Water-Shorelines/Puget-Sound/Helping-Puget-Sound/Reducing-Puget-Sound-nutrients.

Specific activities completed in 2018 include:

- Organized and hosted 5 Nutrient Forums including scientists and researchers from Ecology, other agencies, and the University of Washington to describe the nutrient problem with the latest science from the region. We also had engineers from our Salish Sea modeling team talk about the model and how we are using it. We usually have between 40-60 people attending in person with about an equal amount of participation online for the simultaneous WebEx broadcasts of each meeting to reduce travel barriers and maximize participation. 5 Forums will take place in 2019 and continue the process of learning from examples in other coastal estuaries and within Puget Sound, as well as providing input to the next phase of Salish Sea modeling.
- We continued to publish new blogs under the Puget Sound Nutrient Watch banner, but didn't complete as many as we originally planned due to the significant workload of putting together the Forums and staffing changes in our communications team.
- We completed the first phase of Salish Sea modeling effort during 2018. Our team of engineers and hydrogeologists put in a tremendous effort to evaluate: the effect of a series of potential nutrient reductions from wastewater treatment plants, sensitivity to parameterization assumptions, and understanding the marine water quality response to human sources under a range of ocean boundary conditions. The report (Ahmed et al, 2019) and a webmap of the model results were published at the beginning of 2019 after extensive internal and external technical review. We followed through on our commitment with the

Puget Sound Partnership to lead the development of the Marine Water Quality Implementation Strategy (MWQ IS). We assembled a team of experienced professionals (including academics, engineers, implementers, tribes, and policy/decision makers) to develop the MWQ IS. This effort supports and informs the Puget Sound Action Agenda, and is funded in part by the National Estuary Program. The first workshop was held in 2018 and they will continue through 2019 with the end goal of developing regional priorities and potential actions for nutrient reduction in the Puget Sound Action Agenda and Governor Inslee's Orca Recovery Taskforce.

Southwest Regional Office

TMDLs
The Deschutes River Multi-parameter TMDL was partially approved by EPA on June 29, 2018. Progress also occurred on two multi-decade complex TMDLs: Budd Inlet- dissolved oxygen and Lower White River- pH. Draft allocations for both TMDLs were developed in 2018 and draft TMDLs will be written in 2019. Additionally, a temperature characterization study was completed for Cranberry, Johns, and Mills Creek in Mason County and a source assessment for bacteria and temperature was completed for the East Fork Lewis River in Clark County.

TMDL alternatives
Ecology launched the East Fork Lewis River Partnership, a TMDL alternative project in mid-2018. The goal of the East Fork Lewis River Partnership is to work collaboratively with local, state, federal, and tribal governments, non-profits, and agricultural producers to co-develop goals, management measures, implementation actions, and a project timeline to address the water quality impairments. The Partnership will also develop a public education and outreach strategy, and a long-term monitoring plan to measure progress. A key milestone for this effort will be the development of a water quality improvement plan that addresses EPA's nine minimum watershed planning elements for both bacteria and thermal pollution.

Central Regional Office

In Ecology's central regional office, ongoing TMDL development work occurred for Cowiche Creek, Upper Naches-Tieton, and Wide Hollow Creeks. There were no new TMDL projects were initiated in 2018. An effectiveness monitoring project for the Upper Yakima Suspended Sediment TMDL has been started and will be completed in 2019. CRO staff have proposed delisting Myron Lake from the 303(d) list. Staff continue work on the STI project for Giffen Lake. Work in the Moxee Drain is shifting to a TMDL alternative.

Eastern Regional Office

Efforts have been focused on TMDL and STI implementation and no TMDL development work occurred in 2018.

3.1.2 Implementation of TMDLs, STIs, Nonpoint Enforcement Efforts

In several watersheds we have attempted to increase the pace of BMPs implementation to address nonpoint pollution in TMDL and STI areas. The following are focus watersheds for our regional staff's implementation efforts (focal issues in parentheses):

1. Samish River (bacteria TMDLs)
2. South Skagit Bay (bacteria TMDLs)
3. Nooksack River/Drayton Harbor drainages (bacteria TMDLs)
4. Upper Chehalis- Newaukum River (bacteria TMDLs)
5. Puyallup River- Boise, Pussyfoot and Second Creeks (bacteria TMDLs)
6. Key Peninsula (nonpoint enforcement- bacteria)
7. Henderson and Eld Inlets (bacteria TMDLs)
8. Hangman Creek (bacteria, dissolved oxygen, nutrients, pH, temperature, turbidity TMDLs)
9. North Fork and South Fork Palouse River (bacteria, temperature TMDLs)
10. Deadman/Meadow Creeks (bacteria, dissolved oxygen, pH, temperature STI)
11. Upper and lower Yakima River watersheds (sediment, bacteria, temperature TMDLs)

Northwest Regional Office

Ecology's Northwest Office has nearly 50 TMDLs, TMDL Alternatives, and Watershed Evaluations in development or completed. It is a challenge to actively participate in each water cleanup effort. The primary tools for accomplishing implementation include the following strategies:

1. Participate in multiple salmon recovery forums (executive committee meetings, technical workgroups, implementation committees, etc.) to promote implementation in areas of shared interest (riparian plantings, cold water refuge creation, etc.).
2. Encourage and guide participation in Ecology's Combined Funding Program and subsequently manage those grants and loans.
3. Targeted monitoring, source identification, outreach/education, and technical assistance in Watershed Evaluation areas.
4. Augment nonpoint water cleanup efforts with TMDL-related NPDES permit requirements.

In 2018 staff from the Northwest Office participated directly or tangentially in King County's Buffer Task Force, Snohomish County's Sustainable Land Strategy, and the Snohomish/Stillaguamish Local Integrating Organization activities to help promote more and better nonpoint implementation projects. In the area of grant project development, Ecology's outreach and technical assistance contributed to eight new water cleanup projects prioritized for Ecology funding in 2020. Watershed Evaluation and other targeted work is discussed in more detail below.

For the Lake Whatcom TMDL Implementation, Whatcom County continues to control non-point sources in Whatcom County by voluntarily applying relevant portions of the MS4 program required under their NPDES stormwater permit throughout the watershed. Based on those

actions Ecology is satisfied that Whatcom County has provided reasonable assurance that they can meet the load allocations.

Clean Samish Initiative (CSI):

During 2018, Ecology's Skagit County Nonpoint Compliance Specialist moved to a different position, and we transferred one of our Whatcom County staff to continue our work in the Samish watershed. We continue to identify and correct pollution problems, primarily associated with non-dairy livestock and fecal coliform bacteria. We worked to build strong partnerships and residential support in Samish watershed, and are sustaining improvements in fecal coliform that we achieved in the first five years of the Clean Samish Initiative. Finding significant and obvious discharges of manure-contaminated discharges has become much less frequent, and more investigation and engagement is required to find sources of pollution. We are sustaining efforts to make further improvements that will allow us to upgrade the Samish Bay for unconditional shellfish harvesting. Last summer (2018) we kicked off watershed assessment efforts aimed at identifying streams and reaches that contain sources of fecal coliform pollution. We have also conducted surveys of properties to identify specific sources of pollution, and will work with our Skagit County partners to begin outreach and education to watershed residents, and to contact operators who may be discharging pollutants to state waters. We continued to improve our partnerships in both watersheds and refine our coordination with county inspectors, Skagit CD staff, and NRCS.

Ecology Inspectors-Contact Summary	Contacts with Property Owners	Warning Letter	NOV
Samish	3	0	0

Additional activities included:

- Continued work with the Skagit Conservation District and landowners to ensure that BMPs implemented in the past continue to be maintained, and that adaptive management occurs when need to protect water quality.
- Coordinated water-sampling efforts with Skagit County, WSDA, Samish Tribe, and volunteers to track sources of fecal coliform pollution in the Samish and Padilla Bay Watersheds during runoff events.
- Coordinated with Washington Dept. of Agriculture (WSDA) and Skagit County on aerial surveys to identify high-risk site conditions that are not visible from public roads.
- Provided quarterly updates to the CSI executive committee and participated in the CSI Project Development Team, comprised mainly of field staff from Ecology and our partners from Skagit County, WSDA and Skagit CD. Much of the implementation of BMPs was coordinated and implemented by these group members.

South Skagit Bay:

The South Skagit Bay Watershed Evaluation Planning effort was finalized in late 2017 after meetings with both the WA State Water Quality and Agricultural Advisory Committee and major agricultural, government, and business stakeholders in Skagit County. Coordination in the

southern lobe of the evaluation area occurred as a team member of Stillaguamish PIC Phase II program.

In the South Skagit Bay we focused on enhancing relationships with our partners during 2018 and began watershed evaluation work in two small watersheds that flow into South Skagit Bay. Ecology staff from BFO and NWRO began a water sampling program that will assist in identifying sources of pollutants, and began to further narrow down potential sources with field observations and consultation with our partners. Outreach to stakeholders and the public continued included the following activities:

Ecology staff led or attended meetings on the following dates:

- February 2018 - Snohomish County stakeholder coordination.
- February 2018 - Skagit County stakeholder coordination and project update.
- Spring 2018 - One-on-one meeting with Western Washington Agriculture.
- September 2018 - Lower Stillaguamish PIC Phase 2 Compliance Coordination team mtg.
- September 2018 - Skagit County Stakeholders update.
- October 2018 – Project overview and update to the Stillaguamish Watershed Council.

Additional activities included:

- Monthly ambient water quality sampling from March through December at 13 sites with additional source identification monitoring at 11 sites.
- GIS analysis of potential onsite septic system contributions during summer of 2018.
- Assistance to WDOH in the collection of marine bacteria sampling data.
- Nonpoint Specialists from Ecology's Bellevue and Bellingham offices worked together performing roadside evaluations during the wet season and entering data and observations into the "Collector App."
- Properties with an elevated potential to pollute were highlighted for future technical assistance.
- Assistance in bacterial pollution source tracing related to a local meat packing plant.
- Release of a mid-year progress update to Skagit stakeholders in September. This mid-year progress report was publically released when our website was launched in December 2018. https://ecology.wa.gov/Water-Shorelines/Water-quality/Water-improvement/Total-Maximum-Daily-Load-process/Directory-of-improvement-projects/South-Skagit-Bay-Assessment
- In November we attended the Stanwood Shellfish Dinner hosted by Sound Salmon Solutions and Snohomish County Surface Water Management. We discussed the project with approximately 13 residents in the Stanwood and Camano Island communities. We have also met with residents through our water quality sampling campaigns.

Going forward into 2019, we intend to increase project awareness with:

- Regular progress updates posted to our website and in presentations to stakeholders.

- Published articles in conservation district newsletters and local newspapers.
- Social media posts that partnering organizations could post on our behalf.

We expect to begin contacting prioritized properties to provide technical assistance in spring 2019 and continue characterizing local water quality through both regular monthly monitoring combined with storm event sampling at key locations.

***Whatcom Clean Water Program*:**

Ecology Nonpoint Staff, in cooperation with Whatcom Clean Water Program (WCWP) partners, worked in Drayton Harbor drainages and most of the Nooksack watershed to identify and address sources of pollution. We also began working in the Jordan Creek watershed, which flows into Lummi Bay, an important Lummi Nation shellfish growing and harvest area.

Ecology Inspectors-Contact Summary	Contact with Property Owners	Warning Letter	NOV
Nooksack River/Portage Bay/Drayton Harbor	77	34	1

The WCWP partners kicked off the fall rainy season with a fall pollution prevention strategy, focusing on inter-agency collaboration and outreach to landowners about preparing their properties for the coming rains to minimize the risk of discharging polluted runoff. BFO filled two vacant Nonpoint Compliance positions during the year due to previous staff taking new positions elsewhere. Several months of intensive training is required to prepare staff to conduct the difficult and sometimes stressful work of working with operators of non-dairy livestock operations in Whatcom County.

In August 2018, BFO staff (Manager, Communications Spec. and Water Quality Lead), concluded 1.5 years of work with our WCWP partners, British Columbia Ministry of Environment and Climate Change, and Ministry of Agriculture, under the title "Nooksack River Transboundary Water Quality Task Group" (WQTG), to address high concentrations of fecal coliform bacteria crossing the border in Bertrand and Fishtrap creeks. We developed a Three-Year Work Plan, which was approved in August, 2018. We have begun to implement the plan, set to be concluded in 2021. BC Ministry of Env. has begun work to monitor water quality, educate property owners, identify sources of pollution and begin implementing pollution prevention practices and conduct enforcement when necessary, all components of the Three-Year Plan.

BFO staff made substantial strides in education-outreach and technical assistance during the past year. We participated in a number of community events and celebrations, and produced a small farm fall pollution prevention flyer, reminding landowners to take precautions and prepare their farms for the upcoming fall/winter rains.

Upper Chehalis- Newaukum River:

Nonpoint staff in the Newaukum River watershed identified 41 property owners who were referred to Lewis Conservation District during 2018. Conservation staff completed site visits to properties where landowners chose to implement best management practices to address identified water quality concerns. Ecology nonpoint staff meet monthly with Lewis CD staff to track progress on the sites of concern. 14 property owners have not made contact with either Ecology or conservation district staff. Nonpoint staff mailed out a winter wet weather letter to the 14 landowners encouraging them to install best management practices to address surface water runoff.

Nonpoint staff are also working in the East Fork of the Lewis River to plan and implement a bacteria and temperature STI program. A source assessment was completed in 2017 and a 9-element watershed plan is currently being developed. The nonpoint staff and the TMDL lead hosted a kickoff meeting in summer 2018 where 48 individuals from 28 organizations attended the meeting. Nonpoint Staff will start conducting proactive investigation work in three priority sub-watersheds- Jenny, Brezee and McCormick Creeks. Second tier priority work will then shift to Riley, Rock Creek North, Lockwood and Mason Creek watersheds.

Additional planning and coordination meetings for the East Fork Lewis STI have occurred since the kickoff. For example, the nonpoint staff have met with Clark County Clean Water Division of Public Works and Public Health to gain further understanding of current efforts in the watershed, the opportunity to conduct joint site visits to properties, and assistance with source identification monitoring efforts. Staff have also met with the City of La Center staff to coordinate efforts with the public works and wastewater treatment staff to assist with further proactive investigation work in Brezee Creek. The next steps for Ecology nonpoint staff will be to distribute an introductory mailer to landowners whose properties are adjacent to Brezee, Jenny and McCormick Creeks and identify landowners to conduct door-to-door site visit.

Enumclaw Plateau (Boise Creek, Pussyfoot Creek, Second Creek and White River):

To date, 50 sites of concern have been identified throughout the Enumclaw Plateau draining to the White River. In 2018, staff performed more field surveys and received additional ERTS complaints adding 32 to the 18 sites of concern already known. The surveys conducted up to late fall of 2018 have sufficiently identified the majority of sites with water quality concerns. However, staff will log any new sites of concern incidentally identified while conducting field surveys to observe progress of current sites.

In 2018, staff closed seven cases, leaving 43 actively being monitored for progress. Four landowners installed BMPs or implemented management practices to reduce the water quality concern. Staff identified two sites that were non-issues due to extreme weather assessment. One site of concern was referred to the City of Enumclaw and deemed not to be a risk to water quality because clean water was being pumped from a basement to the MS4 for flood management.

Throughout 2018, staff prioritized the active sites of concern according to the risk to water quality. High risk sites were defined as ones containing livestock with unrestricted access to a

creek, degraded stream banks, little to no buffer or riparian zone, no fencing, and close proximity of overgrazed pasture. Medium risk sites were defined as sites with livestock access directly to the headwaters of the creeks with little to no buffer, riparian zone, or fencing. Low risk sites were those with overgrazed pastures adjacent to ditches draining eventually to the creeks or river. Unknown risk sites were sites that needed further observation in the wet season to better identify the conveyance or whether there are livestock present. Of the 43 active sites, eight are high risk, 17 are medium risk, 12 are low risk, and six are considered unknown.

Staff provided progressive technical assistance to encourage voluntary compliance with six high priority sites of concern in 2018. One landowner is seasonally managing the pasture use and excluding access with hotwire to the MS4 conveyance. Another site of concern is downsizing cattle (50 to 10 head) and will not use fields likely to flood or field adjacent to MS4 during high rain events. A third site of concern is no longer using field adjacent to MS4 for pasturing and is in the process of selling the property. A fourth site owner has been not returning contact via gate hangers left twice in the fall. A fifth site allowed pasture to revegetate over the spring and summer but has allowed a horse back on in the early fall. A sixth site finished installing exclusion fencing and a modest vegetative buffer.

Henderson and Eld Inlets:

Eight sites of concern were identified in the Henderson and Eld Inlets in 2018. Staff conducted field surveys to assess the current status of seven of these sites. Five demonstrated improvements using best management practices, yet still continue to show some level of water quality concern. One site was assessed to be a medium priority at the time of observation, and is currently of unknown status. Two sites show no significant change. One of these is considered a low priority. The other consists of illegal, inadequate, or failing on-site septic systems. The county is currently working toward a solution for this neighborhood of trailer homes.

Key Peninsula:

The Key Peninsula area within Pierce County contains nine sites of concern identified in 2018. One of these was determined to be a non-issue for nonpoint water quality concerns. One site currently is unknown in concerns and status. Five sites are low risk. One site is medium risk. One site was initially high risk. The Conservation District worked extensively with this last site, culminating in a signed plan with grant funds in 2019. Significant improvements were made at that time. However, the current status is unknown.

Central Regional Office

Implementation activities continued support of the Upper Yakima Suspended Sediment TMDL in 2018. This work included continued efforts on technical assistance before considering potential enforcement actions. Implementation activities in the lower Yakima drainage for the Granger Drain bacteria TMDL continued in coordination with the Washington Department of Agriculture.

Eastern Regional Office

At our Eastern Regional Office, we focused a large portion of our resources towards the implementation of the *Agreement between Washington Department of Ecology and Spokane Riverkeeper Relating to Hangman Creek TMDL (Riverkeeper Agreement)*; and the *Steptoe Creek & Asotin Creek Straight to Implementation Plans (STIs).*

Hangman Creek is a major tributary to the Spokane River and suffers from low oxygen, high nutrients, high temperatures, and very high levels of suspended sediment. In 2015, the Spokane RiverKeeper challenged EPAs approval of the 2009 Hangman Creek TMDL. In early 2018, the Department of Ecology settled with the RiverKeeper, agreeing to take certain implementation actions. Our agreement with the RiverKeeper is to study, identify and fix pollution sources, and track progress. Over 80% of the land-use in the watershed is agriculture, so addressing agricultural pollution is a significant aspect of the agreement.

Elements of the RiverKeeper Agreement staff have been working on include the riparian assessment, watershed evaluation, site prioritization, landowner contact, offers for technical and financial assistance, and the education and outreach strategy. In 2018, 10 priority tillage sites and 5 priority livestock sites were contacted. To date, 3 of the 10 tillage sites and 4 of the 5 livestock sites are being actively addressed with partners. Implementation partners include the RiverKeeper, Spokane County Conservation District, and Trout Unlimited. The education and outreach strategy is being developed to reach audiences both within and outside the Hangman Creek watershed. The outreach strategy is in the developmental stages, but planned for 2019 implementation. Ecology has also identified funding to address non-agricultural issues in the watershed. For example, we will work with partners to plant several thousand native trees and shrubs along the Hangman Valley Golf Course in 2019, converting fairway back to natural riparian habitat.

Elements of the Steptoe STI plan that Ecology staff have been working on include landowner contact, offers for assistance, issuing an administrative order for a livestock operation, and collaboration with partners in the watershed. The Palouse Conservation District was contacted by the livestock producers who received the administrative order and have been working on a plan that includes comprehensive exclusion fencing, off-stream watering, and riparian planting along the livestock operation – approximately 3 miles of Steptoe Creek.

The Department of Ecology has also been working with the Asotin County Conservation District to implement the Asotin Creek STI. Ecology identified one property as part of our watershed evaluation on mainstem Asotin Creek. Livestock were having significant impacts from livestock feeding and grazing along three miles of Asotin Creek. Ecology partnered with the Asotin County CD in 2018 to fence and exclude cattle from the riparian area at least 75 feet away from surface water along all three miles of creek.

3.1.3 Complaint Response

During 2018, Ecology responded to nonpoint source pollution related complaints received by our agency. Complaints, and follow-up to complaints, were tracked in the agency's Environmental

Reporting and Tracking System (ERTS). Ecology received a variety of complaints on a wide range of activities including:

- Livestock
- Dairy/Waste
- Debris/Garbage
- Mud/silt/sediment/turbidity
- Herbicide/pesticide application
- Fertilizer
- Manure

NWRO Bellevue participated in 3 inspections with other agencies and performed 37 responses to ERTS complaints. ERTS complaints responded to concerned, primarily, bacteria-related pollution problems related to improper livestock management and onsite septic system issues. SWRO staff responded to 36 ERTS complaints. Of these, there were 11 sites with direct livestock access to surface waters, 6 sites that had manure piles near surface water, 7 sites referred to county staff jurisdiction, and 12 sites that involved other nonpoint issues not directly related to agriculture.
CRO nonpoint staff followed up on approximately 45 nonpoint ERTS complaints in 2018. The ERTS were primarily reports of water quality concerns by the public. Two ERTS were the result of field observations by Ecology staff. No formal actions were necessary in response to the CRO ERTS complaints. ERO nonpoint staff responded to approximately 18 nonpoint ERTS complaints in 2018.

3.1.4 PIC Programs and Regulatory Backstop for PIC Programs

Locally led PIC programs identify and address pathogen and nutrient pollution from a variety of nonpoint sources, including on-site sewage systems, farm animals, pets, sewage from boats, and stormwater runoff. -Ecology staff typically participate in regularly scheduled PIC advisory group meetings and outreach events. As needed, Ecology provides a regulatory enforcement backstop for counties to help implement the agriculture-related components of their programs.

During 2018, Ecology inspectors and/or TMDL Leads coordinated with PIC programs in the following counties:

- Mason
- Pierce
- Snohomish (Stillaguamish PIC Phase II)
- King (Poverty Bay, Quartermaster Harbor)
- Skagit (Samish River/Bay)
- Whatcom (Whatcom Clean Water Program)
- Island
- San Juan
- Clallam
- Thurston

Ecology's Northwest Region is most heavily invested in the Stillaguamish Phase II PIC, Whatcom Clean Water Program, and Clean Samish Initiative where both nonpoint specialists and TMDL Leads participate regularly. We also provide limited support (as needed) to the Poverty Bay, Vashon Quartermaster Harbor, Island, and Kitsap PIC programs. Of note, on December 28, 2018, Washington State Department of Ecology submitted the nonpoint success story titled 'Kitsap County's Pollution Identification and Correction Program Improves Water Quality in Dogfish Creek' (ID #1675). The success story was subsequently published by EPA on February 13, 2019.

3.1.5 Support Market-Based Programs that Help Meet WQ Standards and Support Compliance with State Law

Farmed Smart

The Farmed Smart Certification program was developed by the Pacific Northwest Direct Seed Association (PNDSA) and a conservation farming technical stakeholder committee comprised of farmers, conservation districts, Ecology, researchers with Natural Resource Conservation Service (NRCS), and Washington State University. It is a voluntary program that promotes growing dryland crops in an environmentally friendly and sustainable way.

Certified farms have the flexibility to choose which practices best fit producers' needs while protecting environmental values. Certified farms are applying agricultural practices including:

- Planting practices like direct seed significantly reduce erosion and keeps soil in the fields.
- Buffers and grass filter strips on streams and rivers to protect water quality and aquatic habitat.
- Precision agriculture technology reduces chemical and fertilizer use and reduces the potential for those chemicals to reach water systems.

Ecology entered into a MOU with PNDSA in 2016, which provides that certified farms have safe harbor from formal water quality enforcement actions as authorized by the state Water Pollution Control Act RCW 90.48.

The following website has additional information about the program: http://www.directseed.org

Salmon Safe

Salmon Safe is one of the largest eco-labeling programs working with businesses to implement practices that protect water quality, maintain watershed health, and restore habitat. Businesses that adopt and incorporate these practices can display the Salmon Safe logo and demonstrate to customers that they are environmentally friendly to the needs of Pacific Northwest salmon. The Salmon Safe program is administered in the Puget Sound area by Stewardship Partners. Washington State now has 80 farms displaying the Salmon Safe logo. Ecology's funded some of the earliest work of Stewardship Partners in the Puget Sound area, which was focused in the Snoqualmie Watershed. Ecology has one current grant with Stewardship Partners in the Snoqualmie Watershed started in 2017 that runs through 2019.

3.1.5 Support No Discharge Zone Designation for Puget Sound

In 2018 Ecology continued work on establishing a No Discharge Zone (NDZ) ban on vessel sewage in Puget Sound area waters. Upon the final affirmative determination by EPA, we initiated and completed rulemaking to adopt Chapter 173-228 WAC "Vessel sewage no discharge zones", to establish a Puget Sound No Discharge Zone.

The final rule was adopted on April 9, 2018 and effective May 10, 2018. Ecology leads two committees on implementation of the NDZ, and worked closely with committee partners to get the word out on the NDZ. The NDZ Education and Outreach Committee has been focused on developing and distributing messages and resources to roll-out the NDZ rule. The NDZ Enforcement Committee has been focusing on coordinating with partners on enforcement mechanisms and reporting response.

More information on the NDZ and rulemaking can be found at:
https://ecology.wa.gov/NDZ and
https://ecology.wa.gov/Regulations-Permits/Laws,-rules,-rulemaking/Rulemaking/WAC-173-228

The NDZ includes all the marine waters of Washington State inward from the line between the New Dungeness Lighthouse and the Discovery Island Lighthouse to the Canadian border, to include the fresh waters of Lake Washington, Lake Union, and all connecting waters between Puget Sound, and applies to all recreational and commercial vessels. The western boundary of the NDZ would be the exit of the Strait of Juan de Fuca near the entrance of Admiralty Inlet. This boundary is known and visible to vessel operators as it is the line between New Dungeness Lighthouse and Discovery Island Lighthouse. The northern boundary would be the border with Canada, then heading south, including all marine waters down to the south end of the south sound and Hood Canal. The fresh waters of Lake Washington, Union Bay, Montlake Cut, Portage Bay, Lake Union, Fremont Cut, the Lake Washington Ship Canal, and Salmon Bay (the connecting waters from Lake Washington to Puget Sound) are all included. By rule, certain commercial vessels have until May 10, 2023 to comply due to the more extensive retrofits and costs. This includes tug boats, commercial fishing boats, small commercial passenger vessels and NOAA research and survey vessels.

3.1.6 Support implementation of other state authorities and promote consistency with the WQ Standards

Support implementation of the Dairy Nutrient Management Program; Ecology and WSDA continue to work on the gaps identified in the Dairy Nutrient Management Act

In 2018, the Department of Ecology (Ecology) and Washington State Department of Agriculture (WSDA) continued to operate under a Memorandum of Understanding (MOU) to address livestock related water quality issues. The MOU was established as a coordinating document because Ecology and WSDA have overlapping regulatory responsibilities for water quality compliance related to livestock activities.

Ecology is the state's delegated NPDES permitting authority and responsible for developing, issuing, and implementing the NPDES Concentrated Animal Feeding Operation (CAFO) permit. Ecology is also responsible for implementing the state's water pollution control act (RCW 90.48). This means that Ecology is responsible for permitting and enforcement of CAFOs, and also responsible for addressing pollution from nonpoint livestock activities. WSDA is responsible for implementing the state's dairy nutrient management act (RCW 90.64). The dairy nutrient management act is a water quality oversight program for dairy operations only.

The MOU identifies the roles and responsibilities of each agency, outlines areas where the agencies have shared responsibilities, and specifies how the agencies will coordinate on issues where there are shared responsibilities. The primary goals of this MOU are to promote consistency and establish clear guidelines to determine which agency will be the lead for specific regulatory activities.

Through the MOU, Ecology and WSDA continue to coordinate on enforcement actions taken against dairies by WSDA and discussed and coordinated on inspection and enforcement activities related to non-dairy livestock activities and permitted CAFOs.

Additionally, Ecology and WSDA continue to share resources to investigate pollution sources from non-dairy livestock activities, and coordinate and discussed water quality monitoring data in priority work areas (e.g. Lower Nooksack, Samish Bay watersheds, Padilla Bay, Port Susan and South Skagit Bay).

Dairy Nutrient Advisory Committee

The Dairy Nutrient Advisory Committee (DNAC) was formed by Washington State Department of Agriculture's Director Sandison in June of 2016. Pursuant to a proviso passed in 2015, the intent of the group was to gather diverse ideas to ensure DNMP functions optimally within its scope of work.

A final report to the Legislature was issued in June 2017. The report provides strategies to consider for each gap identified. Even though the report has been completed, the DNAC continues meeting to provide ongoing input to and as a sounding board for Director Sandison on dairy nutrient management. Ecology participated in the two DNAC meetings that were held in 2018.

Implementation of forest practices rules statewide; periodic reviews of the Forest Practices Rules adaptive management program and the Clean Water Act Assurances

We help ensure that the Forest Practices Rules are effective in protecting water quality and meet federal and state water quality standards. These rules help protect streams, wetlands, and other bodies of water in or near forest areas and in-stream fish habitat.

Ecology provides:

- Field inspectors to help the Department of Natural Resources ensure rules are followed.
- Forest practices effectiveness monitoring and policy analysts who participate in the Forest Practices' adaptive management program.[2]

The Forest Practices Rules provide standards to:

[2] Covered below in section 3.2.2.

- Preserve trees in streamside areas to keep the water cool.
- Improve in-stream fish habitat by providing woody debris and controlling pesticide use near water bodies.
- Encourage proper construction and care of forest roads to prevent silt from entering water.

In 2018 we had six regional staff act as field inspectors. Inspectors engaged in the following activities to support the implementation and enforcement of the forest practice rules:

- Participated in field review and data collection of forest practice activities to determine compliance with the rules. Inspectors worked throughout all six DNR Regions. Prior to field visits inspectors conducted in-office FPA reviews.
- Reviewed individual forest practice applications.
- Reviewed and provided input on Compliance Monitoring Program reports and documents and participated in the site-compliance inspections.
- Participated in meetings and work sessions to implement a stream typing prioritization plan and procedures for coordinating between landowners and reviewers prior to stream protocol surveys.
- Performed field inspections of selected streams, providing concurrence or recommendations for alternate points to be used to define where fish habitat exists, and where the end of perennial water occurs in order to apply different harvest prescriptions.
- Provided staff to assist DNR in evaluating readiness of counties to assume jurisdiction for forest practices within their urban growth boundaries.
- Collaboratively participated with DNR, and WDFW staff and representatives of affected Indian tribes as appropriate, to identify the need for and participate in multidisciplinary ID teams and Field Inspections for conducting a site-specific evaluation of compliance with the forest practices rules.

3.1.7 Support education and outreach and support for voluntary programs.

Ecology continually plans and implements education and outreach efforts focused on nonpoint source pollution management. Various E & O activities are noted under the updates for Goals 1 and 3 and are not repeated here for the sake of brevity.
Another notable E & O tool that Ecology utilizes is an interactive map which shows the public the active and completed water quality protection projects throughout the state that have received financial support through Ecology's combined funding Program. This map can be viewed at: https://fortress.wa.gov/ecy/eaglmap/.

3.2 Ensure Clear Standards (Goal 2):

3.2.1 Identify BMPs and measures designed to comply with the WQ Standards and contribute to the protection of beneficial uses of the receiving waters, and ensure compliance with state and federal law. Utilize best available science.

Agricultural BMP Guidance

The development of clear, standalone, clean water BMP guidance for agricultural sources is a key enhancement for our nonpoint source (NPS) pollution program. The guidance's focus is on inventorying existing BMPs, refining those BMPs (if needed), and then assembling the BMPs into combinations that adequately address all sources of pollutants for a particular land use.

Ecology's goal is to run a process that interested parties and stakeholders believe is fair, inclusive, and respectful, that will result in robust, scientifically-based guidance which farmers will be amenable to implement, that will meet water quality standards by preventing pollution discharge at the parcel level. In 2018 we made significant progress on the guidance.

Representatives from the National Resource Conservation Service (NRCS), conservation districts, Washington State Department of Agriculture, United States Department of Agriculture, Washington State University, agriculture producer groups, environmental groups, the Environmental Protection Agency, the State Conservation Commission, and the Northwest Indian Fisheries Commission are a part of the advisory group that we are working with to develop the guidance.

Advisory Group:

- Bob Amrine-Lewis County Conservation District, District Manager
- Jennifer Boie-Palouse Conservation District, Director
- Jack Field Washington Cattle Feeders Association, Executive Director
- Evan Sheffels Washington Farm Bureau, Associate Director of Government Relations
- Jay Gordon Washington State Dairy Federation, Policy Director
- Sarah Ryan Washington Cattlemen's Association, Executive Vice President
- Tracy Eriksen Palouse Farmer
- Ron Scheibe Asotin County Agricultural Producer
- Bruce Wishart Puget Soundkeeper Alliance
- Jerry White Spokane Riverkeeper,
- Tracy Hanger USDA-NRCS, Washington State Agronomist
- Nick Peak EPA, Agriculture Advisor
- Randy Honcoop Raspberry Farmer
- David R. Huggins USDA-ARS, Northwest Sustainable Agroecosystems Research unit
- Jana Compton, Ph.D. Ecologist, US Environmental Protection Agency
- Gary Bahr (WSDA) Washington State Department of Agriculture, Office of Director-Natural Resources Assessment

- Brian Cochrane Washington State Conservation Commission, Habitat and Monitoring Coordinator
- Joan Wu, Ph.D., PE Washington State University
- Ash Roorbach Northwest Indian Fisheries Commission, Forest Practices Coordinator
- Allen Casey USDA-NRCS, Plant Materials Center Team Leader
- Josh Monaghan King Conservation District, Senior Program Manager for Planning and Strategic Initiative Programs
- Nichole Embertson, Ph.D. Whatcom Conservation District, Science and Planning Coordinator-Sustainable Livestock Production Program
- William Pan, Ph.D. Washington State University
- Dr. Steven Fransen, Ph.D. Washington State University, Irrigated Agriculture Research and Extension Center
- Harold Crose Grant County Conservation District, Resource Conservationist
- Bob Vadas-WDFW

We held eight advisory group meetings in 2018. We started by creating an advisory group charter and ground rules. We then worked on an organization structure for the guidance – one that identified the practices that will be included in the guidance and grouped them into categories, identified the agricultural sectors to which the practices apply, and highlighted the pollutants and erosion types addressed by each practice.

We decided to work on tillage and residue management first. We identified common tillage and residue management practices and their anticipated performance relative to water quality standards. We also highlighted which tillage and residue management practices are most effective at preventing pollution. The guidance also describes implementation considerations with an emphasis on providing practical information that could help producers determine how practices might be applied to their agricultural operation. We anticipate finalizing this part of the guidance in 2019. We will also work on guidance related to:

1. Animal/Forage & Pasture Management
2. Crop Systems
3. Riparian Protection
4. Animal Confinement & Management, Manure Handling & Storage

We hope to complete those volumes of the guidance by the end of 2019. When we update the Nonpoint Plan we will include completed volumes of the guidance.

Forest Practices

Under Washington state law (Chapter 90.48 RCW) forest practices rules are to be developed to achieve compliance with the state water quality standards and the federal Clean Water Act (CWA). Ecology established Clean Water Act assurances (CWA assurances) for the state's forest practices program in 1999 as part of the Forests and Fish Report (FFR).

The CWA assurances established that the state's forest practices rules and programs, as updated through a formal adaptive management program, would be used as the primary mechanism for bringing and maintaining forested watersheds into compliance with the state water quality standards.

Taken in total, the forest practices program provides a substantial framework for bringing forest practices into compliance with the water quality standards. In 2009, as part of a review of the forestry program, Ecology concluded it is in the best interests of water quality, and is consistent with legislative intent, to work together with cooperating agencies and stakeholders to make needed improvements to the existing program. Ecology therefore conditionally extended the CWA assurances (which were set to expire in 2009) with the intent to stimulate the needed improvements to the forest practices and adaptive management programs.

Ecology, in consultation with key stakeholders, established specific corrective milestones. The extension of these assurances is conditioned on meeting these administrative and research milestones by the specific target dates described. These milestones serve as a corrective action plan necessary to retain the assurances into the foreseeable future.

Progress towards completing the remaining corrective milestones has remained slower than intended but continues to move forward. The causes of not meeting the scheduled target dates include, new and competing priorities; such as, the additional work related to ensuring forestry is not increasing the risk of mass wasting, work on a large proposal to establish separate requirements for small forest landowners, and a renewed focus on developing field methods for identifying points on streams that represent the end of fish habitat (with fish habitat receiving higher protection under the rules).

The Forest Practices Board has initiated some steps intended to improve the program, such as establishing a subcommittee to look at Adaptive Management Program improvements, and to convene a meeting of stakeholder leadership to recommit to the collaborative science-based program which was envisioned in 1999 with the Forests and Fish Agreement. These efforts have stalled, however, in this year though the intentions to move them forward appear to remain.

The table in Appendix A shows the corrective milestones and their status as communicated to the Washington Forest Practices Board at their August 2018 meeting.

3.3 Develop and Strengthen Partnerships (Goal 3)

3.3.1 Strengthen Relationships and Receive Input from Stakeholders

Ecology recognizes the need for strong partnerships and input from stakeholders to effectively implement our nonpoint source program. Many of those efforts are detailed in other sections of this report. We are looking to highlight our activities related to key groups and partners:

Agriculture and Water Quality Advisory Committee

Director Maia Bellon established the Agriculture and Water Quality Advisory Committee to provide her with a direct line to producers and producer groups. The committee provides input to help guide her efforts to improve Ecology's relationship with the agricultural community and change how we do our work to better respond to concerns from producers.

A broad array of agriculture interests participate on our committee to support a healthy industry and protect clean water. The committee has open dialogue about issues affecting the industry and how they intersect with our work to prevent water pollution.

This committee provides an open forum for agriculture producers and environmental interest groups to meet our staff and learn about our work. They provide valuable feedback as we tackle the challenge of insuring that working lands keep working in an environmentally friendly way.

In 2018, the committee met on April 26th, and October 3rd. The committee has been successful at further improving our agencies relationship with agriculture and creating a more positive environment to implement our nonpoint program including increased acceptance and support for our watershed evaluation and TMDL implementation work, and support for the creation of the Voluntary Clean Water Guidance for agriculture.

For detailed information on each meeting and the work of the committee please see: https://ecology.wa.gov/About-us/Our-role-in-the-community/Partnerships-committees/Agriculture-and-Water-Quality-Advisory-Committee

Financial Assistance Council (FAC) and Water Quality Partnership (WQP)

The FAC and WQP continue to be key forums for informing stakeholders on our nonpoint program. These groups continue to be successful in helping us coordinate and build relationships with key stakeholders.

FAC meetings were held on March 15th, July 18th, and November 15th, 2018. For more information on the FAC meetings please visit: https://ecology.wa.gov/About-us/Our-role-in-the-community/Partnerships-committees/Water-Quality-Financial-Assistance-Council

WQP meetings were held on March 8th, September 13th, and December 6h, 2018. For more information on the WQP meetings please visit: https://www.ezview.wa.gov/site/alias__1962/view_our_committees_water_quality_partnership/37053/water_quality_partnership.aspx

Puget Sound Nutrient Forum (Forum) and Marine WQ Implementation Strategy (MWQ IS)

Both of these efforts focus on building and strengthening relationships with regional stakeholders, tribes, the regulated community, industry, and the public. Nutrient management efforts in other large U.S. coastal estuaries have emphasized the importance of focused stakeholder engagement to build a common understanding of nutrient over-enrichment problems and potential solutions. We believe that a successful outcome for Puget Sound will rely in large part upon this engagement process, and the feedback we have received from attendees has been largely positive.

We held 5 Forums in 2018 and have another 5 Forums planned for 2019. For more information on the Forum meetings please visit:
https://www.ezview.wa.gov/DesktopDefault.aspx?alias=1962&pageid=37106

The MWQ IS effort began picking up speed in the last half of 2018 with selection of the Core and Interdisciplinary teams (including subject matter experts in wastewater, agriculture and aquaculture, stormwater, urban planning, and nonpoint implementation) and the first of five workshops.

3.3.2 Strengthen Relationships with Federal and State Agencies and Local Governments and Special Purpose Districts

We continued to strengthen partnerships with federal and state agencies, as well as, local governments and special purpose districts. Examples of coordination efforts with local governments and special purpose districts (highlighted above), include working with local government PIC programs, working with Conservation Districts (CDs) during our eastern region's watershed assessments and implementation efforts, collaborating with CDs in support of PNDSA's Farmed Smart Certification Program, partnering with local heath jurisdictions, counties, and CDs on the Clean Samish Initiative and Whatcom Clean Water Program.

Examples of coordination with CDs include:

- Asotin County CD has partnered with Ecology to water quality improvements along several streams in their district. Because of a positive working relationship and great water quality progress already being made, we are able to use a straight to implementation (STI) approach to make progress on meeting water quality standards on several streams in Asotin County, including Asotin Creek. We were able to get right to work improving water quality and fish habitat. The district has received funding to implement BMPs that are effective at addressing pollution problems in their district. Their extensive riparian buffer and direct seed work has transformed these STI watersheds, dramatically improving water quality and habitat for ESA listed fish.

- Moses Lake was closed in the summer of 2018 to recreation due to toxic algae blooms. Many residents have voiced their frustration with the poor water quality in the lake. In partnership with Grant County Conservation District, we have formed the Moses Lake Watershed Council. We have also directed some funding to the CD for some early action items including the development of a lake management plan.

- National Water Quality Initiative – Is a partnership effort between the Palouse CD, Ecology, and NRCS. Union Flat Creek has been selected for an intensive monitoring and implementation effort. Ecology is providing funding to the Palouse CD to help implement this exciting new effort on the Palouse. In 2018 we wrote a letter of support to have the NWQI extended to Union Flat Creek and will be partnering with the CD in 2019 to start implementing this initiative.

- Kamiache Creek and Thorn Creek Paired Water Quality Study – The Palouse-Rock Lake and the Palouse CDs partnered with the Ecology to fund conservation tillage and buffer projects in the Kamiache Creek watershed and then monitor to see if we could tell a

difference in water quality between Kamiache Creek and nearby stream that did not conservation tillage and buffer projects implmented. In addition to cost-share funding, Ecology provided EAP resources.

- The East Fork Lewis River Partnership was established in the summer of 2018 to work collaboratively with stakeholders (including the Lewis County CD, local, state, tribal, and federal governments; non-profits; private industry; and landowners) to implement our recommendations in the Source Assessment and develop and implement a feasible and impactful water cleanup plan. This plan will support, include, and celebrate the priorities, ongoing efforts, and future plans of partners working in the East Fork Lewis River watershed, while addressing challenges associated with fecal coliform bacteria and temperature.

Additionally, in 2018 Ecology continued supporting the Lower Yakima Valley Yakima GWMA (Groundwater Management Area) as a member of the GWMA Advisory Committee (see https://ecology.wa.gov/Water-Shorelines/Water-quality/Groundwater/Protecting-aquifers/Lower-Yakima-Valley-groundwater) and field staff attended CD board meetings across the state.

At the state level, in addition to coordination with the state Department of Agriculture (MOU) and the Department of Natural Resources (Forest Practices) as detailed above, we continued to work with the state Department of Health on shellfish issues and in support of PIC programs, supported the Puget Sound Partnership's Puget Sound Action Agenda, and supported the State Conservation Commission in our role as a commission member.

In 2018, Ecology continued to work toward strengthening our partnership with the USDA Natural Resources Conservation Service (NRCS). NRCS staff have participated on our Voluntary Clean Water Guidance advisory group. As highlighted above we worked with NRCS and Palouse CD to expand the NWQI to Union Flat Creek.

Furthermore, we have continued to partner on two Regional Conservation Partnership Program (RCPP) projects, the Palouse River and the Spokane River funded by NRCS.

Finally, Ecology continues to participate on the NRCS State Technical Advisory Committee.

3.3.3 Strengthen Relationships with Tribes

Coordination between tribal, state, and local governments is important to the successful management of resources, including water quality. We have met with tribal natural resources staff at a meeting hosted by the NWIFC (Coordinated Tribal water quality program meetings) to discuss the Puget Sound Nutrient Strategy. Letters have been sent to tribes regarding the process, and inviting them to participate in the development of the Clean Water Guidance for Agriculture. An employee with the NWIFC is a member of the Voluntary Clean Water Guidance advisory group.

We have also worked to respond to the Swinomish Tribes request that we focus resources on implementing the Skagit River Temperature TMDL. We share an interest in achieving water quality improvements in the Skagit watershed that support healthy populations of salmon. To do

this we need to increase the pace of efforts to implement riparian restoration that would improve water temperatures.

We intend to develop and implement a nonpoint strategy to achieve the temperature standards. This strategy should be completed in by December 31, 2019, and should identify targeted near term actions to attain measurable progress as well as longer-term area-wide strategies. State agencies will look to use the full mix of tools at our disposal, including incentives, technical assistance, and development of local partnerships, as well as enforcement to achieve our mutual goals of meeting water quality standards in the Lower Skagit.

Ecology's regional WQ staff work with tribal governments through the many local salmon recovery forums and their technical committees as well as special workgroups designed to solve specific environmental challenges. One notable achievement in 2018 was our coordination and technical assistance to the Snoqualmie Tribe and Tulalip Tribes in the development of grant proposal to evaluate temperature problems and solutions in the Snohomish Watershed. A project originally designed for the Middle Fork Snoqualmie was expanded to examine the temperature-impaired lower Skykomish River and included the exploration of new tools and partners to achieve more effective and less costly thermal studies of local waters. The project is now on our draft offer list for FY 2020.

3.4 Monitor waters for nonpoint source impairments, and program effectiveness (Goal 4)

3.4.1 Continue Monitoring Efforts/ Effectiveness Monitoring

Water Quality Program staff continued to perform ambient stream monitoring to support several Watershed Evaluation projects. Routine monthly characterization sampling or targeted storm event sampling were key components of Ecology activities in the Whatcom Clean Water Program and the South Skagit Bay Watershed Evaluation to identify nonpoint sources of pollution. Working in tandem with our NPDES permitting program, eleven cities and two counties were required to do additional ambient sampling for fecal coliform bacteria. These monitoring efforts complimented the existing sampling networks performed by Snohomish, Island, King, and Skagit Counties, along with sampling done by the Stillaguamish Tribe of Indians.

In 2018 the first year of the Newaukum River long term effectiveness study was completed and the second year of the Kamaiche Creek study direct seed watershed study was completed. Both watersheds are regional focus areas for implementing TMDLs and agricultural and salmon recovery efforts to restore or improve water quality and habitat.

The Newaukum River effectiveness monitoring study was developed cooperatively with local stakeholder groups. The study compares water quality results with implementation actions over time in three HUC12 watersheds. A project web site (https://ecology.wa.gov/Research-Data/Monitoring-assessment/Water-quality-improvement-effectiveness-monitoring) was developed to support local stakeholders and provide a near real-time updates of activities.

The Kamaichie Creek effectiveness monitoring study (http://www.prlcd.org/) was developed cooperatively with the Palouse River Conservation district. This study compares sediment and nutrient loading from two watersheds with different tillage practices. The goal of the project was to determine the effectiveness of conservation tillage practices in reducing sediment and nutrient loading. The results from the first and second year of monitoring indicate sediment loading from the watershed with greater than 80% no-till farming practices (Kamaichie) was significantly less than the watershed with 20% no-till farming practices (Thorn Creek).

EAP also worked with the King Conservation District to develop a QAPP to conduct a water temperature survey within size buffers size classes implemented in King County over the last 20 years. The QAPP is meant to set the stage for more detailed site specific buffer studies which will assess buffer efficiency in maintaining water quality standards including sediment, nutrient removal and supporting aquatic life uses. This work will be developed to support WA State Discovery Farm Program.

Currently EAP has several active effectiveness monitoring projects across the state. These include studies in Bertrand Creek in Whatcom County, Deschutes River in Thurston County, Railroad Creek in Chelan County, and the Yakima River in eastern Washington. All projects are long-term and are expected to continue until the waterbodies meet state water quality standards.

The Environmental Assessment Program (EAP) continues to develop a Quality Assurance Monitoring Plan (QAMP) for assessing effectiveness of pollution control plans in Washington State. The QAMP will include all standard operating procedures for collecting, analyzing, and reporting of data that will be collected for effectiveness monitoring studies. It will also outline the framework for both a statewide and watershed level study design for assessing both programmatic and regional effectiveness of actions and plans. The statewide design will assess programmatic effectiveness using a statistical survey design that is compatible with EAPs watershed health and EPA's national water quality survey. The target population for this design are all 303(d) category 4A and 4B listed streams in Washington State.

3.5 Administering the Nonpoint Source Program effectively and efficiently as possible (Goal 5)

3.5.1 Align the nonpoint program with other relevant programs

Critical Aquifer Recharge Areas

Ecology technical staff reviewed and commented on the Dept. of Commerce Critical Areas Guidance.

Ecology is in the process of revising the 2005 Critical Aquifer Recharge Area Guidance. In 2018, we interviewed various stakeholders as part of an informal assessment. We met with the Dept. of Commerce Growth Management Services Program, the Dept. of Health Office of Drinking Water, the Dept. of Ecology Hazardous Waste and Toxics Reduction Program and touched base with our Water Resources Program. We presented to the Eastern Washington Planners Forum and the Olympic Peninsula Planners Forum. We interviewed staff from

Redmond and Issaquah, who have robust programs to protect groundwater. The informal assessment allowed us to understand the issues and design an online survey. The comment period for the survey ended in December.

Ecology also provided review and technical consultation for the Voluntary Stewardship Program Work Plans. The Voluntary Stewardship Program was formed by the legislature to allow counties to use a voluntary approach to protecting critical areas on agricultural lands. Ecology technical staff summarized comments from previous VSP reviews of work plans with respect to Critical Aquifer Recharge Areas and provided those to Ecology's lead representative for the VSP program.

Ecology technical staff reviewed the Benton County Groundwater Action Plan, which is Benton County's VSP Work Plan for Critical Aquifer Recharge Areas. Ecology technical staff recommended a process for groundwater similar to the PIC program for addressing contamination of shellfish beds. For contaminated groundwater and impaired wells, this would include:

- Identify contaminated well locations.
- Estimate travel time to the well from up-gradient.
- Inventory for potential contamination sources around the well in the time of travel zone for the well – start with the 5-year time of travel.
- Fix it: Backflow prevention, nutrient & pesticide & irrigation plans, watch for manure piles, compost management, over-fertilization.
- Monitor groundwater quality at that well.

The Washington Nitrate Prioritization Project data, report, and Story Map was used by Ecology technical staff in support of the review of VSP work plans with respect to Critical Aquifer Recharge Areas.

3.5.2 Promote Accountability

Nonpoint & Implementation & TMDL Tracking System

In 2018, a decision was made to separate the nonpoint web and mobile applications from the TMDL database. It became clear the product goals for each focus of the database (nonpoint/TMDL) were different and that separating them facilitated streamlined database development with clear goals. Development work for the TMDL database has not yet begun. The primary goal is to utilize EPA's ATTAINS database to pull general TMDL tracking information that we will use to populate our internal database. The secondary goal is to add a geospatial component, the TMDL boundary layer, so that if nonpoint field work and tracked BMPs from the nonpoint mobile/desktop application fall within a TMDL boundary, the cleanup work can be linked.

In support of Ecology's efforts to address nonpoint sources of pollution and develop and implement TMDLs, field staff routinely conduct windshield surveys in priority watersheds to assess conditions that may be negatively affecting water quality. These staff also respond to water quality related environmental complaints from the public.

When field staff conduct windshield surveys and complaint responses, they typically collect a variety of site information such a field notes and photographs. These efforts also require staff to manage additional information such as communications with property owners and related documents such as letter or other correspondences. To meet both staff and programmatic needs to better collect, store and track nonpoint data in a consistent and streamlined manner and manage data in a way that can be integrated with other water quality efforts such as TMDLs, the Program invested in the development of a state-wide system to collect and store nonpoint data.

The state-wide system will include the following components:

1. Mobile applications to view, collect and submit data in the field via cloud-based services
2. Web application to view, manage, track and report data
3. Internal database to store all records/data

Key nonpoint data to be collected and managed includes:

- Field observations and notes
- Photographs (geo-located)
- Communications with property owners
- Best management practice implemented

Benefits of this system will be:

- Streamlined data collection in the field & reduction in equipment needed
- Increased data quality and consistency (across all regional offices)
- Simplified data management including data automation
- Field access to important information
- Ability to input, store and manage all nonpoint data in a single Ecology database
- Centralized location for pulling nonpoint data and information
- Improved ability to track efforts, produce reports and evaluate progress
- Increased ability to utilize, integrate and synthesize data e.g. spatial information
- Elimination of the need for long-term, cloud-based data storage

The Water Quality Program has completed and deployed the mobile application to collect field data and is currently working to finalize a web-application and corresponding database that will be used to view, edit, add and manage data in a desktop environment. All components of the system will be deployed in the coming year and effort will shift to product roll-out to regional offices and product use training.

3.5.3 Administer grants and loans

Chapter 2 of this report includes information on our program administration and identifies funded activities and BMPs related to our Section 319 Grant. Please review that chapter for more information on the progress we made on Goal 5. Additionally, information has been reported through the Grants Reporting and Tracking System (GRTS). There is also an interactive map that captures where we have SFY20 combined funding projects (for grant applications submitted in 2018):
https://public.tableau.com/profile/eliza.keeley.arnold#!/vizhome/WaterQualityCombinedFundingProgramSFY19FinalOfferList/2020FinalList?publish=yes

3.5.4 Coordinated Strategic Investment

The mission of the coordinated strategic investment effort is to create an interagency forum to increase coordination and collaboration among Washington State grant programs that benefit water quality and salmon recovery while recognizing the unique roles and authorities of each agency.

The goal is to enhance communication and collaboration among state agency water quality and salmon recovery grant program managers by:

- Sharing grant guidelines, policies and best practices where possible;
- Aligning grant program data, metrics, reporting, and timelines when possible;
- To search for ways that agencies can help grant recipients save time, conserve resources, and improve project management by improving coordination across elements and phases of a common project, or, projects in the same reach or bay (this includes state, federal and NGO grant sources).

Specific efforts or achievements over this past year include:

- Quarterly coordination meetings and we regularly report out to respective agency's executive leadership teams regarding our efforts.
- Identified, through an iterative process, those areas of our respective grant/loan programs for which we can coordinate our efforts to ensure our customers – recipients of state/federal funds – experience consistency among the funding programs.
- Sharing of annual funding lists from partner agencies and programs to review for overlap and ultimately coordinated use of resources.
- FundFunder.wa.gov. A compilation of all state/federal grant and loan programs that fund Water or Salmon Recovery. This past year the workgroup finalized Washington Water and Salmon Fund Finder (WWSFF), a single portal that is filterable and sortable, and is housed at fundfinder.wa.gov. The front page is hosted by Office of Chief Information Officer and provides entry to available Washington state water and salmon funding opportunities and a front splash page with a link to workgroup participants, and a workgroup library.
- Align Guidance Policies. We are currently engaged in reviewing the RCO Acquisition Manual for consistency. ECY-WQP is facilitating an internal acquisition workgroup that is using RCO acquisition manual as a starting point for ECY funding programs (for all ECY environmental programs that do land acquisition). We will eventually adopt portions of the RCO manual that pertains to each funding program.
- Mapping of Investments. Goal is to map annual project lists on a single ArcGIS map.

Chapter 4: Conclusions

In 2018, the State of Washington made considerable progress in protecting water quality from nonpoint source pollution. However, as EPA is well aware, water quality protection efforts inherently face significant ongoing social, financial and technical challenges. Fortunately, in Washington State one of our greatest strengths is that we have dedicated staff and partners who are committed to working collaboratively to reduce the scope and scale of NPS pollution. This cooperative, solution-oriented environment encourages innovation and adaptation in addressing both longstanding and emerging water quality challenges.

Throughout our NPS management strategy, there is a focus on implementation and clear standards. Moreover, there is an increased emphasis on greater regulatory clarity around what actions are necessary to prevent pollutants from reaching state waters and ensure compliance with the water quality standards.

We are continuing to better refine the right balance of technical assistance, financial assistance, and the use of enforcement tools. For example, watershed evaluations are becoming more standardized around the state and we are utilizing this proactive approach to not only eliminate pollution sources, but also educate the public about the role they play in protecting water quality to the benefit of their communities.

The enormity of the NPS pollution problem in Washington State requires that we continually strive to improve our programs, policies, and tools. The many advancements outlined in this report show that we are on the right track. The clean water guidance for agriculture is moving forward with a goal of producing guidance on the first set of practices to be completed in early 2019. This process has gained the support and participation of a diverse group of stakeholders. Moving forward, this guidance will serve as an important asset in efforts to reduce NPS pollution form agricultural sources. Our funding program continues to be successful, responsibly managed and a model for using public dollars to facilitate the most effective BMP implementations. Finally, we are taking key actions to protect water quality in the Puget Sound from nutrient and bacteria pollution. We made significant progress in establishing a no discharge zone in the Puget Sound. Additionally, we initiated the Puget Sound Nutrient Source Reduction Project as a strategy to control nutrient discharges to Puget Sound.

Nevertheless, we can and will do more to advance water quality protection in Washington State. We know that opportunities exist to build on our successes: we can better communicate our strategy and goals to the public; we can further refine the tools we use to document and track water quality problems in watersheds; we can improve the strategies we use to achieve clean water goals in priority watersheds; and we can better communicate the successes achieved by our NPS management program in order to facilitate further acceptance and adoption of effective NPS pollution controls throughout the state. In all these regards, the continued financial and technical support we receive from EPA has been and will remain critical to supporting both the staff and the actions needed to implement our Nonpoint Source Management Plan and achieve clean water goals throughout the State of Washington.

Appendix A

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47600 • Olympia, WA 98504-7600 • 360-407-6000
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

Memorandum

July 13, 2018

TO: Forest Practices Board

FROM: Mark Hicks, Ecology Forest Practices Lead

SUBJECT: Clean Water Act Milestone Update

The Washington State Department of Ecology (Ecology) committed to provide the Forest Practices Board (Board) with periodic updates on the progress being made to meet milestones established for retaining the Clean Water Act 303(d) Assurances (Assurances) for the forest practices rules and associated programs. The last update to the Board occurred at the February 2018 Board meeting. At that time Ecology noted that while work was being done on numerous milestones, none had been completed.

Under Washington state law (Chapter 90.48 RCW and 76.09.040 RCW) forest practices rules are to be developed so as to achieve compliance with the state water quality standards and the federal Clean Water Act (CWA). The Assurances establish that the state's forest practices rules and programs, as updated through a formal Adaptive Management Program (AMP), will be used as the primary mechanism for bringing and maintaining forested watersheds in compliance with the state water quality standards.

The Assurances were originally granted in 1999 as part of the Forests and Fish Report (FFR) and spell out the terms and conditions of how Section 303(d) will be applied to lands subject to the FFR. Those original Assurances were to last for only a ten year period. After conducting a review of the program and hearing from stakeholders that they were committed to making the program work, Ecology conditionally extended the assurances for another ten years. This extension was given in good faith to support the program in meeting a list of milestones that included process improvements and performance objectives.

The 2009 milestones were established to create a path of steady improvement in gathering information critical for assessing the effectiveness of the rules in protecting water quality as mandated by state law. Equally important, was the opportunity to create a more effective research program to test and adjust the rules long-term consistent with adaptive management which was inherent with the Assurances.

Updates to the Board have served as a way to track progress and identify challenges so the Board could make necessary changes to keep the milestones on schedule and/or protect the program integrity associated with the Assurances. The Board has continually been receptive of our concerns and the importance in keeping the program on track. Unfortunately, key milestones have languished because of limited cooperator resources and project funding, disagreement amongst stakeholders that need to achieve consensus in order to move projects forward, and the addition of new and competing priorities and assignments from the Board.

Delays in completing milestone projects have pushed timelines out such that many of the milestone projects cannot be completed unless Forest and Fish Support Account funding continues beyond its 2025 sunset date. In addition, these projects compete for limited funding and cooperator attention with the new priorities and projects set by the Board.

The Assurances are based on the premise that Ecology and the EPA can rely on the AMP to use sound scientific principles to test the effectiveness of the FFR rules in meeting water quality standards, and to expediently modify those rules if they are ineffective. It has been almost 20 years since the Assurances were first granted, but the effectiveness of the rules remains largely unknown. When the ten year conditional extension was granted, Ecology understood meeting the corrective milestones would be a challenge. However, the extent of delays for the highest Clean Water Act priority projects are what is most concerning now as the end of the ten year extension approaches.

Ecology appreciates the Board's efforts to reinvigorate the program through a meeting of the principals and through its efforts to obtain fiscal and performance audits of the program. These actions, along with establishing a subcommittee to help identify program improvements are positive steps. Ecology hopes that the Board and program cooperators will use the remaining 16 months of the ten year extended Assurances to move key CWA projects like the Type Np effectiveness research projects towards the finish line, and to make whatever process improvements it can to create an Adaptive Management Program that meets the high expectations originally envisioned.

Enclosed are two tables showing the milestones and their current status. Table 1 shows the non-CMER project milestones. These milestones are implemented outside of the Cooperative Monitoring, Evaluation, and Research (CMER) program and are largely within the control of the Forest Practices Operations Section of the Department of Natural Resources (DNR) or the Timber Fish and Wildlife Policy Committee (Policy). Table 2 shows the CMER Research Milestones. During this review period, a study design was approved for the long awaited Eastside Type N Riparian Effectiveness Monitoring Project. Changes in status since our last briefing and points of note are highlighted in red font.

Please contact me if you have any questions or concerns (360) 407-6477.
Enclosure October 24, 2017

Summary of CWA Assurances Milestones and current status:

Non-CMER Project Milestones		
	Summarized Description of Milestone	**Status as of July 2018 (updates in red)**
2009	July 2009: CMER budget and work plan will reflect CWA priorities.	**Completed** October 2010
	September 2009: Identify a strategy to secure stable, adequate, long-term funding for the AMP.	**Completed** October 2010
	October 2009: Complete Charter for the Compliance Monitoring Stakeholder Guidance Committee.	**Completed** December 2009
	December 2009: Initiate a process for flagging CMER projects that are having trouble with their design or implementation.	**Completed** November 2010 The product developed that met this milestone is complicated and not being used. The Adaptive Management Program Administrator has stated his intention to refine the process. Any remedy that ensures problems are identified and resolved efficiently would continue to satisfy this milestone.
	December 2009: Compliance Monitoring Program to develop plans and timelines for assessing compliance with rule elements such as water typing, shade, wetlands, haul roads and channel migration zones.	**Completed** March 2010
	December 2009: Evaluate the existing process for resolving field disputes and identify improvements that can be made within existing statutory authorities and review times.	**Completed** November 2010
	December 2009: Complete training sessions on the AMP protocols and standards for CMER, and Policy and offer to provide this training to the Board. Identify and implement changes to improve performance or clarity at the soonest practical time.	**Completed** May 2016
2010	January 2010: Ensure opportunities during regional RMAP annual reviews to obtain	**Completed** September 2011

Non-CMER Project Milestones		
	Summarized Description of Milestone	**Status as of July 2018 (updates in red)**
	input from Ecology, WDFW, and tribes on road work priorities.	
	February 2010: Develop a prioritization strategy for water type modification review.	**Completed** March 2013
	March 2010: Establish online guidance that clarifies existing policies and procedures pertaining to water typing.	**Completed** March 2013
	June 2010: Review existing procedures and recommended any improvements needed to effectively track compliance at the individual landowner level.	**Completed** November 2010
	June 2010: Establish a framework for certification and refresher courses for all participants responsible for regulatory or CMP assessments.	**Completed** September 2013
	July 2010: Assess primary issues associated with riparian noncompliance (using the CMP data) and formulate a program of training, guidance, and enforcement believed capable of substantially increasing the compliance rate.	**Completed** August 2012
	July 2010: Ecology in Partnership with DNR and in Consultation with the SFL advisory committee will develop a plan for evaluating the risk posed by SFL roads for the delivery of sediment to waters of the state.	**Underway** DNR, Ecology, and representatives of the small forest landowner caucus are working together to try and develop a solution that will inform the condition of SFL roads. Discussions are leading towards a combination of a self-directed survey with a field validation sample.
	July 2010: Develop a strategy to examine the effectiveness of the Type N rules in protecting water quality at the soonest possible time that includes: a) Rank and fund Type N studies as highest priorities for research, b) Resolve issue with identifying the uppermost point of perennial flow by July 2012, and c) Complete a comprehensive literature review examining effect of buffering headwater streams by September 2012.	**Underway** DNR has been directed by the Board to establish a technical work group to resume development of Board Manual 23. Policy has tentatively agreed to use the dry-season survey method year-round rather than having wet season default distances.
	October 2010: Conduct an initial assessment of trends in compliance and enforcement actions taken at the individual landowner level.	**Completed** November 2010

Non-CMER Project Milestones		
	Summarized Description of Milestone	**Status as of July 2018 (updates in red)**
	October 2010: Design a sampling plan to gather baseline information sufficient to reasonably assess the success of alternate plan process.	**Completed** December 2014 DNR satisfied this milestone by releasing an Alternate Plan Guidance memo (12-10-14) designed to strengthen the overall process for issuing alternate plans. Efforts remain pending for DNR to conduct a review to assess whether the guidance is being effectively used.
	December 2010: Initiate process of obtaining an independent review of the Adaptive Management Program.	**Underway** DNR is working with the state auditor's office about performing an audit.
2011	December 2011: Complete an evaluation of the relative success of the water type change review strategy.	**Completed** March 2013 DNR rechecked the current status of the review process used in the regional offices. They found differences in the extent the original processes had been maintained. No assessment was made of whether this affected cooperators ability to contribute to an effective review.
	December 2011: Provide more complete summary information on progress of industrial landowner RMAPs.	**Completed** September 2011
2012	October 2012: Reassess if the procedures being used to track enforcement actions at the individual land owner level provides sufficient information to potentially remove assurances or otherwise take corrective action.	**Completed** June 2012
	Initiate a program to assess compliance with the Unstable Slopes rules.	**Completed** October 2017
2013	November 2013: Prepare a summary report that assesses the progress of SFLs in bringing their roads into compliance with road best management practices, and any general risk to water quality posed by relying on the checklist RMAP process for SFLs.	**Off Track** Described above for July 2010 milestone.

Summary CMER Research Milestones and their current status

CMER Research Milestones		
Description of Milestone		**Status as of July 2018 (updates in red)**
2009	Complete: Hardwood Conversion – Temperature Case Study (Completed as data report)	**Completed** June 2010
	Study Design: Wetland Mitigation Effectiveness	**Completed** October 2010
2010	Study Design: Type N Experimental in Incompetent Lithology	**Completed** August 2011
	Complete: Mass Wasting Prescription-Scale Monitoring	**Completed** June 2012
	Scope: Mass Wasting Landscape-Scale Effectiveness	**Not Progressing** The ability to successfully carry out this research study is being discussed.
	Scope: Eastside Type N Effectiveness	**Completed** November 2013
2011	Complete: Solar Radiation/Effective Shade	**Completed** June 2012
	Complete: Bull Trout Overlay Temperature	**Completed** May 2014
	Implement: Type N Experimental in Incompetent Lithology	**On Track**
	Study Design: Mass Wasting Landscape-Scale Effectiveness	**Not Progressing** Discussed above for 2010 Scoping
2012	Complete: Buffer Integrity-Shade Effectiveness	**Underway** This study has been delayed since concerns were identified in 2013. Changes in response to the second round of ISPR review comments have been sent back to ISPR, but have not yet approved.
	Literature Synthesis: Forested Wetlands Literature Synthesis	**Completed** January 2015
	Scoping: Examine the effectiveness of the RILs in representing slopes at risk of mass wasting.	**Completed** April 2017
	Study Design: Eastside Type N Effectiveness	**Completed** March 2018
2013	Scoping: Forested Wetlands Effectiveness Study	**Completed** December 2016
	Wetlands Program Research Strategy	**Completed** January 2015
	Scope: Road Prescription-Scale Effectiveness Monitoring	**Completed** March 2016
	Study Design: Examine the effectiveness of the RILs in	**Underway** Draft study sent to ISPR in January 2018.

CMER Research Milestones		
Description of Milestone		**Status as of July 2018 (updates in red)**
	representing slopes at risk of mass wasting.	
	Implement: Eastside Type N Effectiveness	**Earlier Stage Underway** Discussed above for 2012 study design.
2014	Complete: Type N Experimental in Basalt Lithology	**Underway** Findings report drafted but not yet approved by CMER for delivery to Policy.
	Study Design: Road Prescription-Scale Effectiveness Monitoring	**Underway** No bidders on water-bar installation.
	Scope: Type F Experimental Buffer Treatment	**Complete** December 2015
	Implementation: Examine the effectiveness of the RILs in representing slopes at risk of mass wasting	**Earlier Stage Underway** Discussed above for 2013 study design.
	Study Design: Forested Wetlands Effectiveness Study	**Underway** Draft in CMER review June 2018.
2015	Complete: First Cycle of Extensive Temperature Monitoring	**Underway** Undergoing final post ISPR revision.
	Scope: Watershed Scale Assess. of Cumulative Effects	**Off Track** Project intended to follow other effectiveness monitoring studies which remain behind schedule.
	Scope: Amphibians in Intermittent Streams (Phase III)	**Not Progressing** Project milestone exists only if needed to fill research gaps left from Type Np Experimental in Basalt Lithology. The Type Np Basalt study is expected to be completed in 2018, so Policy established 2019 as a date to begin this study; if questions were not addressed. Maybe time for RFP for this and others that are off track.
2017	Study design: Watershed Scale Assess. of Cumulative Effects	**Off Track** Discussed above for 2016 Scoping.
	Study Design: Amphibians in Intermittent Streams (Phase III)	**Not Progressing** Discussed above for 2015 scoping.
2018	Complete: Roads Sub-basin Effectiveness	**Earlier Stage Underway** Will be re-scoped at end of Road Prescription-Scale study.
	Implement: Watershed Scale Assess. of Cumulative Effects	**Off Track** Discussed above for 2016 Scoping.
	Complete: Type N Experimental in Incompetent Lithology	**On Track** Post-harvest study report expected in CMER review in late 2018

CMER Research Milestones		
Description of Milestone		**Status as of July 2018 (updates in red)**
2019	Complete: Eastside Type N Effectiveness	**Earlier Stage Underway** Discussed above for 2012 study design.

Status terminology:

"Completed" - milestone has been satisfied (includes those both on schedule and late).

"On Track" - work is occurring that appears likely to satisfy milestone on schedule.

"Underway" - work towards milestone is actively proceeding, but likely off schedule.

"Earlier Stage Underway" – project initiated, but is at an earlier stage (off schedule) then the listed milestone.

"Not Progressing" - no work has begun, or work initiated has effectively stopped.

"Off Track" - 1) No work has begun and inadequate time remains, 2) key stakeholders are not interested in completing the milestone, or 3) attempt at solution was inadequate and no further effort at developing an acceptable solution is planned.

Appendix B

Statement of Maintenance of Effort (MOE) related to Section 319(h)

MOE Base Level: Based on available Ecology data from 1985 and 1986, the average level of annual pass through awards for nonpoint source control projects focused on improving water quality was $480,254. Projects were funded using state Referendum 39 funds.

MOE Maintenance: Ongoing pass through funding for nonpoint source projects focused on restoration and protection of water quality has far exceeded the MOE Base Level, mostly through resources provided through the Washington State Centennial Clean Water Fund and the Clean Water State Revolving Fund (CWSRF).

Between 1988 and 2017 Ecology has awarded an average of $4 million per year in state nonpoint source project funding. These funds were not used as Section 319 or other federal match.

In State Fiscal Year 2019 Ecology offered $856,759 in state funds not used as Section 319 or other federal match from our Centennial Grant Program and $21,202,047 from Clean Water State Revolving Fund non-federal funds.

Maintenance of Effort (MOE) List for State Fiscal Year 2019 per CWA Section 319(h)(9)						
Final Non Point and On-Site Projects Excluding 319 Matching Projects						
Applicant	**Project Title**	**Project Category**	**County**	**Centennial Grant**	**CWSRF Standard Loan**	**Short Description**
Lummi Indian Business Council	Fine Sediment Reduction by Flood-plain Connect-ivity in the	Non Point Source Activity	Skagit	$406,112	$0	Fine sediment is a major limiting factor to Puget Sound Chinook in the Nooksack watershed. To reduce fine sediment impacts, the project goals are to reconnect the South Fork Nooksack River mainstem to its left floodplain during 1-year or greater discharges, increase pool habitat with woody cover, reduce the input of fine sediment to

	SF Nook-sack River					the mainstem from the Elk Flats slide on the right bank river bend, and reduce the in-channel storage of fine sediment downstream from the Elk Flats slide.
Applicant	**Project Title**	**Project Category**	**County**	**Centennial Grant**	**CWSRF Standard Loan**	**Short Description**
Skagit County - Public Works Dept.	Maddox Creek Culvert Removal and Stream Enhancement	Non Point Source Activity	Skagit	$450,647	$0	Sediment is dumped into the Maddox Creek watershed through a perched culvert installed in preparation of development in the area, but development never occurred. The culvert is unused and is increasing the rate of fine sediment input while blocking documented salmonids from moving upstream in the system. Skagit County in partnership with the City of Mount Vernon proposes removing the culvert to provide water quality benefits and improve rearing habitat.
Nisqually Indian Tribe	Mashel River and Ohop Creek Water-Quality Protection	Non Point Source Activity	Pierce	$0	$14,243,752	This project will acquire for permanent ecosystem services based management and restoration 5,221 acres of timberlands and 42 miles of stream and tributary shoreline in the Nisqually Watershed's Mashel River sub-basin and 2,560 acres of timberlands and 26 miles of stream and tributary shoreline in the watershed's Ohop Creek sub-basin.
Clark County - Public Health Dept.	Regional Clean Water Loan Program expansion to improve	On-Site Sewage System	Statewide	$0	$6,000,000	Grow Regional Clean Water Loan Program (RLP) into 20+ county partnership with nonprofit lender to offer financial assistance via affordable loans for failing onsite septic systems. RLP reduces barriers to regulatory compliance and improves surface/groundwater quality benefitting public health, ecosystem health, shellfish harvesting. Proposal adds counties in Eastern WA/Columbia

	water quality.					River Basin, deepens support to Puget Sound/Coastal Counties, and increases lending capital for low-income households.
Applicant	**Project Title**	**Project Category**	**County**	**Centennial Grant**	**CWSRF Standard Loan**	**Short Description**
Skagit County - Health Dept.	Skagit County Non-point Septic Repair Fund	On-Site Sewage System	Skagit	$0	$750,000	The purpose of this project is to continue Skagit County's county-wide non-point local loan repair fund. This project provides loans to qualified property owners for the repair of failing individual on-site septic systems in the Shellfish Protection District, including Marine Recovery Areas (MRAs), Sensitive Areas (SAs), or contribute directly or indirectly to poor water quality in water ways that lead to shellfish beds in the Puget Sound as well as recreational waters in Skagit County.
Grant/Loan Total Offered SFY 2019				$856,759	$21,202,047	