Year 2017 Report
on
Activities to Implement

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

March 2018

Purpose of Document

This *Year 2017 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 below, 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 Toward Clean Water

Nonpoint source (NPS) pollution in our waterways is the greatest water quality challenge facing Washington today. Solving this challenge will require actions from all contributors. Ecology's NPS strategy focuses on many 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 we (Ecology) use to guide and promote implementation are:

- TMDLs;
- Straight to Implementation (STI); and
- Our Grant and Loan program and its funding guidelines.

Further, when an opportunity exists, Ecology will take advantage of other tools and advantageous watershed conditions. Taking advantage of favorable watershed conditions in particular can be an important driver for on-the-ground implementation. Current examples 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 spurred 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.

Additionally, 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 investments made in our pass through grant programs. Significantly, grants have leveraged the implementation of numerous BMPs, and the restoration of many riparian areas.

Chapter 2
How EPA's 2017 319 Grant to Washington State was Distributed

In SFY2018, the federal 319 allocation was again distributed among three major work plan elements within Ecology as in SFY2017.

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 $3,088,000 as the initial annual increment to this grant. Watershed projects were allocated $1,698,400 for pass through to nonpoint projects. Overall, Ecology awarded a total of 35 nonpoint projects, of those 8 received 319 funds during SFY2018 for a total obligation of $1,541,749. The remaining $156,651 and potential under-obligation will be used (liquidated) in support of three 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 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).

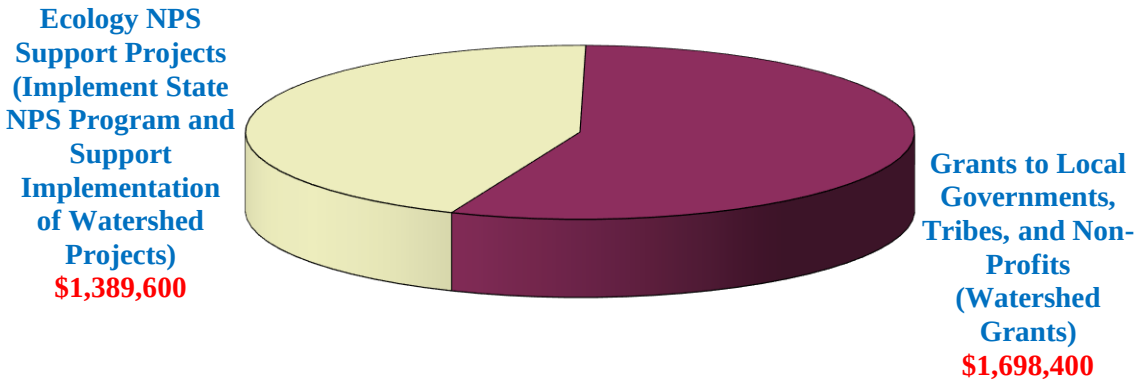
In SFY 2013 Ecology reviewed the status of the DIF program along with the reduction in 319 federal allocations and decided not continue the DIF funding as stated above. In SFY 2015 (FFY 2014) Ecology decided to no longer create a specific set aside allocation of watershed implementation funds for regional DIF projects. Instead, use unspent and/or de-obligated dollars from competitive projects with time remaining to initiate eligible DIF projects with 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 11.15 staff FTEs for projects in SFY2018 that directly support the nonpoint program.

Overall, federal allocations were:
SFY 18 Allocation: $3,088,000

Total EPA: $3,088,000

Figure 2.1 - 319 Federal Allocations SFY 2018



The above figure shows the federal allocation. Ecology applied 40 percent state matching funds using State Centennial Clean Water Fund dollars. **Eight** nonpoint projects were funded with 319 dollars, and **eleven** state funded nonpoint projects were selected as match, for a total of **nineteen** 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 SFY2018 funding cycle, a total of **twenty seven** projects were funded to control nonpoint sources of pollution, or to restore habitats affected by land uses that exacerbate nonpoint pollution problems. **Eleven** of these were selected to fulfill the state match to the federal 319 dollars, for a dollar amount of $3,648,045.

Section 319
Federal 319 grants provide funds to reduce nonpoint sources of water pollution. In the SFY2018 funding cycle, **eight** projects were funded with 319 funds for a total of $1,541,749 obligated from a total allocation of $1,698,400. The remaining $156,651 will be used for three projects selected to receive buffer incentive.

In summary, **nineteen** projects were funded with 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 SFY2018 funding cycle, **seven** projects were funded to control nonpoint pollution. The total obligation to date is $4,125,958

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 design standards. In the SFY 2018 funding cycle, **ninety six** projects were funded with SFAP funds for a total of $41,489,971. **Sixty-seven** projects that were put in "delayed status" in state fiscal years 2016 and 2017 due to a significant reduction in new and supplemental budget allocations from the state legislature were finally funded this round, in addition to new 2018 applications. If funds become available in the next budget appropriation, they may be awarded for these projects.

National Marine Fisheries Service (NMFS) Riparian Buffer Requirements

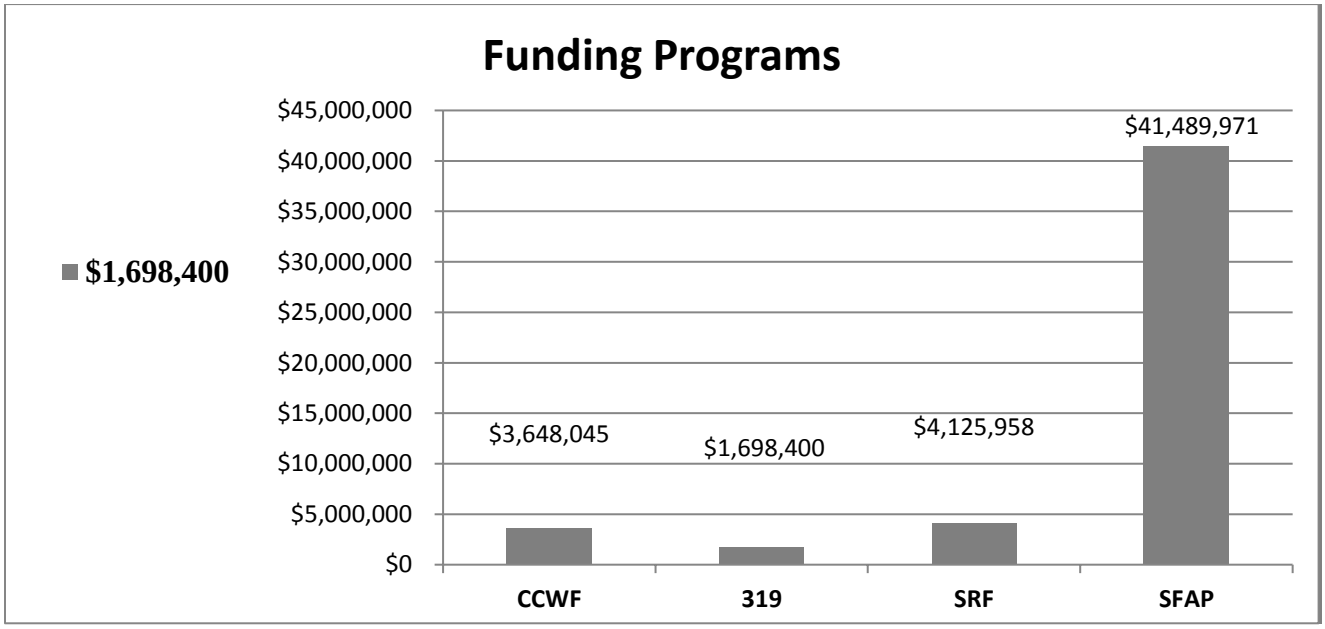
The new buffer requirements initially caused a negative reaction among applicants for 319 project funding in SFY15. As an incentive to apply, Ecology offered 100 percent grant funding to implement the wider NMFS riparian buffer requirements. The incentive provided funding to pay full costs for in the 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 2018, **three** 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 $156, 651 is planned to support this incentive.

Delayed Capital Budget

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. Therefore, project negotiations will ensue in the coming months and expenditures will be delayed beyond the year typically allowed for liquidating new 319 obligations.

Total Washington State SFY2018 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 Loans

SFY 2018 Nonpoint Activity Projects (Fourth Year of NMFS Buffer Width Condition)							
Application Number	**Centennial Grant**	**319 Grant**	**319 Buffer Incentive**	**SRF Loan**	**Organization Name**	**Project Title**	**Project Short Description**
WQC-2018-SoSaSo-00176		170,025	TBD		Sound Salmon Solutions	Stillwater Natural Area Restoration Phase II	The recipient will implement the second phase of restoration to Stillwater Natural Area to continue to address high water temperatures by removing invasive weeds and installing native plants within a 100-650ft wide riparian buffer along 1,300 linear feet of the right bank Snoqualmie River, totaling 12.53 acres. Increased shade will reduce water temperatures that exceed state standards. This project will also engage the community to provide opportunities in the restoration process and to learn the importance of water quality.
WQC-2018-TLC-00139		239,354	TBD		The Lands Council	Spokane River Watershed Riparian Restoration & Water Quality Education	The Lands Council will help reduce fecal coliform bacteria, temperature, PCBs, turbidity, and nutrients to improve water quality and public health in the Greater Spokane River watershed by planting riparian buffers, educating secondary school students, public officials, and landowners, and installing beaver dam analogs (BDAs).
WQC-2018-SFEG-00090		249,795			Skagit Fisheries Enhancement Group	Skagit River Rural Community Riparian Stewardship	Skagit Fisheries Enhancement Groups is seeking funds to plant 25 acres of riparian buffer and construct 4,000 feet of livestock exclusion fencing at five sites along 303(d) listed streams, and along Skagit River side channels that are impacted by livestock grazing and lack of shade. The project will educate citizens from small communities in the middle Skagit floodplain about the importance of water quality via a combination of school programs and community work parties.

2.1 Nonpoint Water Quality Grants and Loans

Application Number	Centennial Grant	319 Grant	319 Buffer Incentive	SRF Loan	Organization Name	Project Title	Project Short Description
WQC-2018-MCFEG-00126		250,000			Mid-Columbia Fisheries Enhancement Group	Environmental Analysis and Design of Changes to the Yakima Delta	Summer water temperatures in the Yakima River basin limit the salmonid habitat and primary contact recreation functions of the river and its tributaries. This project will decrease thermal loading by increasing streamside shade and floodplain function at four locations. It will also quantify temperature-related health concerns in the lower river, and educate citizens about the health concerns related to warm water. Ultimately, reducing upstream temperatures will reduce downstream health risks.
WQC-2018-LCEP-00122		167,670			Lower Columbia Estuary Partnership	Salmon Creek Stormwater OSPREY Project	The Salmon Creek Stormwater OSPREY Project will re-establish native riparian and wetland/scrub shrub vegetation within 4-acres of the Salmon Creek Greenway; provide comprehensive stormwater/clean water education to 36 teachers and 1,008 students from the Salmon Creek watershed; and engage students and parents in native plantings at the site. All project activities contribute to addressing high instream temperatures and fecal coliform bacteria and help implement Salmon Creek TMDLs.
WQC-2018-SoSaSo-00177		161,743			Sound Salmon Solutions	Griffin-Snoqualmie Riparian Restoration	Sound Salmon Solutions will restore a 100-700' riparian buffer along 2,325' of Griffin Creek plus 370' along the mainstem Snoqualmie River at approximately river mile 27, removing invasive weeds and replanting with native vegetation. Native vegetation will increase shade to help decrease water temperatures, which presently exceed state standards. SSS will engage the community in restoration processes through volunteer events, outreach events, and educational opportunities.

2.1 Nonpoint Water Quality Grants and Loans

Application Number	Centennial Grant	319 Grant	319 Buffer Incentive	SRF Loan	Organization Name	Project Title	Project Short Description
WQC-2018-PaCoAn-00081		112,500			Pacific County Anglers	Stringer Creek Riparian Restoration	This project will reconstruct the historic channel, plant native species in the riparian area, and maintain plantings over three years on Stringer Creek, in Pacific County, WA. Ecological benefits of this work include ground water protection, improve connectivity to groundwater and the floodplain, and also provide shade to improve in-stream temperatures, detritus for nutrients and biota, and long-term large wood inputs. This project address many of the issues in the two Willapa River WQI studies.
WQC-2018-SoSaSo-00221		190,662			Sound Salmon Solutions	Grant Creek Restoration Phase I	Sound Salmon Solutions will restore a 100-260 foot wide riparian buffer along 730 feet of the left bank and 1,850 linear feet of both banks of Grant Creek by removing invasive plants and replanting with native vegetation. This will increase habitat diversity, help attenuate instream temperatures, provide future woody inputs, and provide runoff filtration. Additionally, SSS will involve community volunteers and local school groups during the project to increase public awareness of the importance of water quality.
WQC-2018-PierCD-00165	247,500		TBD		Pierce Conservation District	South Prairie Creek TMDL Response	The Pierce Conservation District and partners will implement large-scale floodplain reforestation along South Prairie Creek, as detailed in the South Prairie Creek TMDL Detailed Implementation Plan (DOE, 2006) to address fecal coliform bacteria and water temperature. Project partners include the Pierce Conservation District, the Puyallup Tribe of Indians and Pierce County Surface Water Management.

2.1 Nonpoint Water Quality Grants and Loans

Application Number	Centennial Grant	319 Grant	319 Buffer Incentive	SRF Loan	Organization Name	Project Title	Project Short Description
WQC-2018-SnohCD-00162	133,887				Snohomish Conservation District	Filbert Creek Riparian Restoration Project	The Snohomish Conservation District will re-forest two streams and a connected wetland in the North Creek basin to address high water temperatures and low dissolved oxygen levels. A total of ten acres will be planted to improve water quality and habitat in the basin by increasing riparian forest cover and restoring healthy wetland hydrology. Workshops will educate landowners in the basin about responsible stewardship of streamside property and preventing pollution from failing septic systems.
WQC-2018-BellPW-00200	500,000			828,088	City of Bellingham Public Works Department	Squalicum Creek Reroute Water Quality and Biotic Improvements-Phase 4	Squalicum Creek Reroute Phase 4 builds on previous work to implement actions exceeding recommendations in the Squalicum Creek Temperature TMDL to improve water temperature, dissolved oxygen, salmon habitat, and beneficial uses in Squalicum Creek. This project maximizes the benefit of and expands on prior award-winning restoration phases within the watershed to prevent water pollution at its source by rerouting a degraded stream channel in an urban setting.
WQC-2018-PaloCD-00110	468,750				Palouse Conservation District	Palouse Direct Seed Partnership Implementation and Monitoring	The Palouse Conservation District will provide the lead to administer cost share for implementation of four miles of riparian buffers and 15,000 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. The Palouse-Rock Lake Conservation District will partner to assist with implementation and outreach for the project.

2.1 Nonpoint Water Quality Grants and Loans

Application Number	Centennial Grant	319 Grant	319 Buffer Incentive	SRF Loan	Organization Name	Project Title	Project Short Description
WQC-2018-PaloCD-00167	499,919				Palouse Conservation District	Palouse Basin Water Quality Improvements	The Palouse River Basin has been highly degraded over the past century and has TMDL's and Clean Water Act (CWA) 303(d) listings for multiple water quality impairments. This project will implement active riparian and wetland restoration on multiple sites on both the North and South Fork Palouse River in order to address and improve water quality issues, emphasizing function to maximize nonpoint source pollutant reduction, water temperature control, soil erosion and bank stability.
WQC-2018-SpoCoD-00127	500,000			3,297,870	Spokane Conservation District	Farmed Smart Certification and Direct Seed Loan Implementation Program	The Spokane CD, Pacific Northwest Direct Seed Association, and Palouse Rock Lake CD are partnering to reduce soil erosion from tillage practices, implement riparian buffers, and improve water quality through outreach and implementation of the Farmed Smart Sustainable Agriculture certification, created in partnership with the Department of Ecology, providing a low cost loan program for farmers to purchase direct seed equipment, and implementing direct seed cost share.
WQC-2018-JeCoPH-00097	260,353				Jefferson County Public Health	Oak Bay - Mats Mats PIC	Nonpoint sources of fecal bacteria will be identified in two priority shoreline and marine areas of the Hood Canal Action Area of Oak & Mats Mats Bays. Sanitary surveys of septic systems will be performed. Corrective actions will be taken to repair all high-risk onsite septic systems (OSS). Contaminates of emerging concern (CEC) for these two areas will be identified.

2.1 Nonpoint Water Quality Grants and Loans

Application Number	Centennial Grant	319 Grant	319 Buffer Incentive	SRF Loan	Organization Name	Project Title	Project Short Description
WQC-2018-BentCD-00065	250,000				Benton Conservation District	Lower Yakima River Water Quality, Nutrient and Aquatic Vegetation Dynamics	Stakeholders need to better understand the dynamics of water quality, nutrients and aquatic plant abundance in the Lower Yakima River in order to prioritize appropriate actions to restore and maintain water quality, flow, and salmon habitat. Excessive aquatic plant growth has degraded water quality, often into violation of multiple state water quality standards. These plants can negatively impact flow, suspended sediment dynamics, whole stream metabolism, pH, water temperature and irrigation.
WQC-2018-SkRiSC-00035	182,735				Skagit River System Cooperative	Lower Skagit Tributaries Riparian Restoration	The purpose of this project is to restore water quality along two degraded stream systems by actively restoring native riparian and floodplain vegetation on 22 acres. The aquatic habitat, degraded due to past land use practices, has limited complexity and is largely devoid of large woody debris. Restoration of riparian vegetation will address water quality impairments including dissolved oxygen, bacteria, fecal coliform, and temperature by shading the creek and filtering surface water runoff.
WQC-2018-JeCoPH-00096	364,055				Jefferson County Public Health	Northern Hood Canal PIC	Nonpoint sources of pollution will be identified in the northern Hood Canal area from Zelatched Point north to Mats Mats Bay. This is a high-priority area of Hood Canal. Fecal coliform and nutrient inputs will be monitored and shoreline septic systems will be assessed through sanitary surveys. Correction activities will be performed to repair all high-risk failing onsite septic systems.

2.1 Nonpoint Water Quality Grants and Loans

Application Number	Centennial Grant	319 Grant	319 Buffer Incentive	SRF Loan	Organization Name	Project Title	Project Short Description
WQC-2018-SnohCD-00218	240,846				Snohomish Conservation District	Jennings Park Phase One Riparian Restoration	The Snohomish Conservation District will restore 15 acres of riparian forest along Allen Creek at Jennings Park in Marysville. This project is the first phase of a two-phased restoration and community engagement initiative to improve water quality in Allen Creek, which is impaired for dissolved oxygen and fecal coliform bacteria. The District will re-vegetate 2,500 feet of Allen Creek and provide youth education, volunteer events, and one septic maintenance workshop for watershed landowners.
Totals	**3,648,045**	**1,541,749**	**$156,651**	**4,125,958**			

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 BMPs implementations 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
Nitrogen	G1400415	Matching: Alpowa Creek Straight to Implementation - Asotin County Public Utility District #1	18.20	LBS/YR
Nitrogen	G1400424	Matching: Little Klickitat TMDL Implementation Project 6 - Central Klickitat Conservation District	118.90	LBS/YR
Nitrogen	G1400452	Thornton Creek Streamkeepers - Adopt A Stream Foundation	8.70	LBS/YR
Nitrogen	G1400491	Matching: Re-Tree Woods Creek: A Riparian Re-Forestation Project - Snohomish Conservation District	25.60	LBS/YR
Nitrogen	G1400501	Matching: Wenatchee Basin Water Quality Restoration Project - Chelan County Natural Resources Department	18.40	LBS/YR
Nitrogen	G1400512	Matching: Cowiche Creek Water Quality Enhancement - North Yakima Conservation District	12.30	LBS/YR
Nitrogen	G1400564	Matching Project: Salmon Creek Watershed Restoration II -Clark Public Utilities	1.30	LBS/YR
Nitrogen	WQC-2015-Adopta-0011	Sorgenfrei Creek Riparian Restoration - Adopt A Stream Foundation	7.20	LBS/YR
Nitrogen	WQC-2015-Adopta-0011	Catherine Creek Riparian Buffer Enhancement - Adopt A Stream Foundation	12.00	LBS/YR
Nitrogen	WQC-2015-Adopta-0011	Northpointe Park Riparian Enhancement Project - Adopt A Stream Foundation	4.00	LBS/YR
Nitrogen	WQC-2015-KitPHD-0001	Matching: Directed PIC for Burley and Lofall Creek Watersheds - Kitsap Public Health District	165.10	LBS/YR
Nitrogen	WQC-2015-LCEP-00086	East Fork Lewis River La Center Bottoms Riparian Restoration Project - Lower Columbia Estuary Partnership	104.50	LBS/YR
Nitrogen	WQC-2015-LIBC-00098	Matching: Smuggler's Slough Restoration Project - Lummi Indian Business Council	0.00	LBS/YR
Nitrogen	WQC-2015-MCFEG-00072	Ellensburg Area Riparian Enhancement - Mid-Columbia Fisheries Enhancement Group	3.70	LBS/YR
Nitrogen	WQC-2015-MSRF-00104	Methow Water Quality Restoration and Monitoring Project - Methow Salmon Recovery Foundation	1.20	LBS/YR
Nitrogen	WQC-2015-NisqIT-0005	Matching: Ohop Phase III Riparian Revegetation Project - Nisqually Indian Tribe	88.70	LBS/YR
Nitrogen	WQC-2015-OkanCD-0000	Matching: Okanogan Water Quality BMPs Project - Okanogan Conservation District	19.91	LBS/YR
Nitrogen	WQC-2015-SkCoPW-0003	Matching: Trumpeter Creek Riparian and Channel Restoration - Skagit County Public Works	60.20	LBS/YR
Nitrogen	WQC-2016-Adopta-0036	Hayho Creek Riparian Enhancement Project	12.00	LBS/YR
Nitrogen	WQC-2016-ChCoNR-0029	Wenatchee Watershed Riparian Enhancement	61.20	LBS/YR
Nitrogen	WQC-2016-ClaPUD-0037	East Fork Lewis - Zimmerly Restoration Project	1.52	LBS/YR
Nitrogen	WQC-2016-FerrCD-0006	Water Quality Improvement in Ferry County	32.00	LBS/YR
Nitrogen	WQC-2016-KooCom-0008	Improving Water Quality: Riparian Restoration on Lower Yellowhawk Creek	0.11	LBS/YR

2.2 WA Load Reduction Estimates by Project

Pollutant Type	State Project Number	Project Title	SUM(Load Reduction Estimate)	Unit of Measure
Nitrogen	WQC-2016-PaloCD-0014	Riparian Restoration for NPS and Temp. Control, South Fork Palouse River	21.90	LBS/YR
Nitrogen	WQC-2016-SnohCD-0009	Monroe Wetland Park Restoration Project	277.40	LBS/YR
Nitrogen	WQC-2016-SpoCoD-0022	Spokane NPS Reduction Implementation and BMP Database Project	6.73	LBS/YR
Nitrogen	WQC-2016-StCoCD-0017	Lake Spokane Phosphorus Input II	3.90	LBS/YR
Nitrogen	WQC-2016-TLC-00278	Riparian Restoration and Stormwater Education in the Hangman Creek Watershed	0.20	LBS/YR
Nitrogen	WQC-2016-WilFiC-0028	Langlois Creek Restoration Project	7.90	LBS/YR
Nitrogen	WQC-2017-Adopta-0013	Upper Catherine Creek Riparian Restoration	1.50	LBS/YR
Nitrogen	WQC-2017-Adopta-0022	Strawberry Fields Buffer Enhancement	22.70	LBS/YR
Nitrogen	WQC-2017-FoCrCD-0006	Douglas County Regional Direct Seed Program	25,953.20	LBS/YR
Nitrogen	WQC-2017-LCEP-00115	East Fork Lewis River Side Channel Restoration Project	1,395.00	LBS/YR
Phosphorus	G1400415	Matching: Alpowa Creek Straight to Implementation - Asotin County Public Utility District #1	17.90	LBS/YR
Phosphorus	G1400424	Matching: Little Klickitat TMDL Implementation Project 6 - Central Klickitat Conservation District	45.80	LBS/YR
Phosphorus	G1400452	Thornton Creek Streamkeepers - Adopt A Stream Foundation	1.80	LBS/YR
Phosphorus	G1400491	Matching: Re-Tree Woods Creek: A Riparian Re-Forestation Project - Snohomish Conservation District	9.20	LBS/YR
Phosphorus	G1400501	Matching: Wenatchee Basin Water Quality Restoration Project - Chelan County Natural Resources Department	9.20	LBS/YR
Phosphorus	G1400512	Matching: Cowiche Creek Water Quality Enhancement - North Yakima Conservation District	3.80	LBS/YR
Phosphorus	G1400564	Matching Project: Salmon Creek Watershed Restoration II -Clark Public Utilities	0.88	LBS/YR
Phosphorus	WQC-2015-Adopta-0011	Sorgenfrei Creek Riparian Restoration - Adopt A Stream Foundation	2.80	LBS/YR
Phosphorus	WQC-2015-Adopta-0011	Catherine Creek Riparian Buffer Enhancement - Adopt A Stream Foundation	1.00	LBS/YR
Phosphorus	WQC-2015-Adopta-0011	Northpointe Park Riparian Enhancement Project - Adopt A Stream Foundation	0.04	LBS/YR
Phosphorus	WQC-2015-KitPHD-0001	Matching: Directed PIC for Burley and Lofall Creek Watersheds - Kitsap Public Health District	32.20	LBS/YR
Phosphorus	WQC-2015-LCEP-00086	East Fork Lewis River La Center Bottoms Riparian Restoration Project - Lower Columbia Estuary Partnership	7.60	LBS/YR
Phosphorus	WQC-2015-LIBC-00098	Matching: Smuggler's Slough Restoration Project - Lummi Indian Business Council	0.00	LBS/YR
Phosphorus	WQC-2015-MCFEG-00072	Ellensburg Area Riparian Enhancement - Mid-Columbia Fisheries Enhancement Group	0.50	LBS/YR
Phosphorus	WQC-2015-MSRF-00104	Methow Water Quality Restoration and Monitoring Project - Methow Salmon Recovery Foundation	0.20	LBS/YR
Phosphorus	WQC-2015-NisqIT-0005	Matching: Ohop Phase III Riparian Revegetation Project - Nisqually Indian Tribe	17.60	LBS/YR
Phosphorus	WQC-2015-OkanCD-0000	Matching: Okanogan Water Quality BMPs Project - Okanogan Conservation District	7.70	LBS/YR
Phosphorus	WQC-2015-SkCoPW-0003	Matching: Trumpeter Creek Riparian and Channel Restoration - Skagit County Public Works	4.30	LBS/YR
Phosphorus	WQC-2016-Adopta-0036	Hayho Creek Riparian Enhancement Project	1.00	LBS/YR
Phosphorus	WQC-2016-ChCoNR-0029	Wenatchee Watershed Riparian Enhancement	30.60	LBS/YR
Phosphorus	WQC-2016-ClaPUD-0037	East Fork Lewis - Zimmerly Restoration Project	0.52	LBS/YR
Phosphorus	WQC-2016-FerrCD-0006	Water Quality Improvement in Ferry County	12.30	LBS/YR
Phosphorus	WQC-2016-KooCom-0008	Improving Water Quality: Riparian Restoration on Lower Yellowhawk Creek	0.04	LBS/YR
Phosphorus	WQC-2016-NoYaCD-0019	Naches River Basin Water Quality Restoration Project	20.00	LBS/YR
Phosphorus	WQC-2016-PaloCD-0014	Riparian Restoration for NPS and Temp. Control, South Fork Palouse River	4.70	LBS/YR
Phosphorus	WQC-2016-SnohCD-0009	Monroe Wetland Park Restoration Project	19.10	LBS/YR
Phosphorus	WQC-2016-SpoCoD-0022	Spokane NPS Reduction Implementation and BMP Database Project	2.21	LBS/YR

2.2 WA Load Reduction Estimates by Project

Pollutant Type	State Project Number	Project Title	SUM(Load Reduction Estimate)	Unit of Measure
Phosphorus	WQC-2016-TLC-00278	Riparian Restoration and Stormwater Education in the Hangman Creek Watershed	0.10	LBS/YR
Phosphorus	WQC-2016-WilFiC-0028	Langlois Creek Restoration Project	0.70	LBS/YR
Phosphorus	WQC-2017-Adopta-0013	Upper Catherine Creek Riparian Restoration	0.10	LBS/YR
Phosphorus	WQC-2017-Adopta-0022	Strawberry Fields Buffer Enhancement	1.90	LBS/YR
Phosphorus	WQC-2017-FoCrCD-0006	Douglas County Regional Direct Seed Program	610.20	LBS/YR
Phosphorus	WQC-2017-LCEP-00115	East Fork Lewis River Side Channel Restoration Project	525.00	LBS/YR
Sedimentation-Siltation	G1400415	Matching: Alpowa Creek Straight to Implementation - Asotin County Public Utility District #1	136.00	TONS/YR
Sedimentation-Siltation	G1400424	Matching: Little Klickitat TMDL Implementation Project 6 - Central Klickitat Conservation District	74.30	TONS/YR
Sedimentation-Siltation	G1400452	Thornton Creek Streamkeepers - Adopt A Stream Foundation	0.40	TONS/YR
Sedimentation-Siltation	G1400491	Matching: Re-Tree Woods Creek: A Riparian Re-Forestation Project - Snohomish Conservation District	14.10	TONS/YR
Sedimentation-Siltation	G1400501	Matching: Wenatchee Basin Water Quality Restoration Project - Chelan County Natural Resources Department	10.80	TONS/YR
Sedimentation-Siltation	G1400512	Matching: Cowiche Creek Water Quality Enhancement - North Yakima Conservation District	2.50	TONS/YR
Sedimentation-Siltation	G1400564	Matching Project: Salmon Creek Watershed Restoration II -Clark Public Utilities	1.20	TONS/YR
Sedimentation-Siltation	WQC-2015-Adopta-0011	Sorgenfrei Creek Riparian Restoration - Adopt A Stream Foundation	3.90	TONS/YR
Sedimentation-Siltation	WQC-2015-Adopta-0011	Catherine Creek Riparian Buffer Enhancement - Adopt A Stream Foundation	0.20	TONS/YR
Sedimentation-Siltation	WQC-2015-Adopta-0011	Northpointe Park Riparian Enhancement Project - Adopt A Stream Foundation	0.00	TONS/YR
Sedimentation-Siltation	WQC-2015-LCEP-00086	East Fork Lewis River La Center Bottoms Riparian Restoration Project - Lower Columbia Estuary Partnership	0.60	TONS/YR
Sedimentation-Siltation	WQC-2015-MCFEG-00072	Ellensburg Area Riparian Enhancement - Mid-Columbia Fisheries Enhancement Group	0.10	TONS/YR
Sedimentation-Siltation	WQC-2015-MSRF-00104	Methow Water Quality Restoration and Monitoring Project - Methow Salmon Recovery Foundation	0.20	TONS/YR
Sedimentation-Siltation	WQC-2015-NisqIT-0005	Matching: Ohop Phase III Riparian Revegetation Project - Nisqually Indian Tribe	22.00	TONS/YR
Sedimentation-Siltation	WQC-2015-OkanCD-0000	Matching: Okanogan Water Quality BMPs Project - Okanogan Conservation District	10.80	TONS/YR
Sedimentation-Siltation	WQC-2016-Adopta-0036	Hayho Creek Riparian Enhancement Project	0.20	TONS/YR
Sedimentation-Siltation	WQC-2016-ChCoNR-0029	Wenatchee Watershed Riparian Enhancement	30.60	TONS/YR
Sedimentation-Siltation	WQC-2016-ClaPUD-0037	East Fork Lewis - Zimmerly Restoration Project	0.01	TONS/YR
Sedimentation-Siltation	WQC-2016-FerrCD-0006	Water Quality Improvement in Ferry County	23.40	TONS/YR
Sedimentation-Siltation	WQC-2016-KooCom-0008	Improving Water Quality: Riparian Restoration on Lower Yellowhawk Creek	0.01	TONS/YR
Sedimentation-Siltation	WQC-2016-NoYaCD-0019	Naches River Basin Water Quality Restoration Project	12.10	TONS/YR
Sedimentation-Siltation	WQC-2016-PaloCD-0014	Riparian Restoration for NPS and Temp. Control, South Fork Palouse River	3.10	TONS/YR
Sedimentation-Siltation	WQC-2016-SnohCD-0009	Monroe Wetland Park Restoration Project	0.70	TONS/YR
Sedimentation-Siltation	WQC-2016-SpoCoD-0022	Spokane NPS Reduction Implementation and BMP Database Project	1.58	TONS/YR
Sedimentation-Siltation	WQC-2016-StCoCD-0017	Lake Spokane Phosphorus Input II	0.30	TONS/YR
Sedimentation-Siltation	WQC-2016-TLC-00278	Riparian Restoration and Stormwater Education in the Hangman Creek Watershed	0.00	TONS/YR

2.2 WA Load Reduction Estimates by Project

Pollutant Type	State Project Number	Project Title	SUM(Load Reduction Estimate)	Unit of Measure
Sedimentation-Siltation	WQC-2017-Adopta-0013	Upper Catherine Creek Riparian Restoration	0.00	TONS/YR
Sedimentation-Siltation	WQC-2017-Adopta-0022	Strawberry Fields Buffer Enhancement	0.40	TONS/YR
Sedimentation-Siltation	WQC-2017-FoCrCD-0006	Douglas County Regional Direct Seed Program	436.90	TONS/YR
Sedimentation-Siltation	WQC-2017-LCEP-00115	East Fork Lewis River Side Channel Restoration Project	998.00	TONS/YR

Pollutant Type is equal to **Nitrogen** , **Phosphorus** , **Sedimentation-Siltation**

2. 3 Water Quality Program Support Projects - (11.15 FTE @ $1,389,600)

1. Nonpoint Policy and Plan Coordination (2.60 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 – $ 346,767.

2. Financial Administration (.95 FTE)

Staff of the Water Quality Program's Financial Management Section administer and manage all Section 319 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 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 – $ 108,526.

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 process makes TMDL implementation more likely and more effective.

Estimated cost of this work plan component – $ 58,378.

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 – $ 142,857

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 – $ 323,140

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 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 – $ 409,932.

2.4 Washington's 2017 Best Management Practices Implemented

BMP Type	State Project Number	Project Title	SUM(Number Installed)	Unit of Measure
Channel Bank Vegetation	G1400415	Matching: Alpowa Creek Straight to Implementation - Asotin County Public Utility District #1	4,450	LINEAR FEET
	WQC-2016-KooCom-0008	Improving Water Quality: Riparian Restoration on Lower Yellowhawk Creek	2,288	LINEAR FEET
Conservation Easements	C1500067	Illabot Creek Acquisition	100	AC
Fence	G1400415	Matching: Alpowa Creek Straight to Implementation - Asotin County Public Utility District #1	350	FT
	G1400501	Matching: Wenatchee Basin Water Quality Restoration Project - Chelan County Natural Resources Department	200	LINEAR FEET
	WQC-2015-OkanCD-0000	Matching: Okanogan Water Quality BMPs Project - Okanogan Conservation District	2,500	LINEAR FEET
	WQC-2015-SkCoPW-0003	Matching: Trumpeter Creek Riparian and Channel Restoration - Skagit County Public Works	2,150	LINEAR FEET
Filter Strip	WQC-2015-MCFEG-00072	Ellensburg Area Riparian Enhancement - Mid-Columbia Fisheries Enhancement Group	1,600	LINEAR FEET
Invasive Species/Noxious Weed Control	WQC-2017-ClaPUD-0012	East Fork Lewis Knotweed Control Project	150	ACRES TREATED
	WQC-2015-LCEP-00086	East Fork Lewis River La Center Bottoms Riparian Restoration Project - Lower Columbia Estuary Partnership	3,800	LINEAR FEET
	WQC-2015-SoSaSo-0004	Stillwater Natural Restoration - Sound Salmon Solutions	2,200	LINEAR FEET
	WQC-2015-SoSaSo-0004	Lower Mainstem Stillaguamish Restoration - Sound Salmon Solutions	2,540	LINEAR FEET
	WQC-2016-Adopta-0036	Hayho Creek Riparian Enhancement Project	1,968	LINEAR FEET
	WQC-2016-NoYaCD-0019	Naches River Basin Water Quality Restoration Project	2,000	LINEAR FEET
	WQC-2016-OkHiAl-0012	Triple Creek Water Quality Restoration Project	1,800	LINEAR FEET
	WQC-2016-SoSaSo-0007	Blue Heron Golf Course Riparian Restoration I	5,100	LINEAR FEET
	WQC-2017-LCEP-00115	East Fork Lewis River Side Channel Restoration Project	5,400	LINEAR FEET
	WQC-2017-ClaPUD-0012	East Fork Lewis Knotweed Control Project	132,000	SQUARE FEET
Residue Management, No-till & Strip Till	WQC-2017-FoCrCD-0006	Douglas County Regional Direct Seed Program	6,650	AC
Riparian Buffers - Vegetative	WQC-2017-FoCrCD-0006	Douglas County Regional Direct Seed Program	23	AC
	WQC-2015-Adopta-0011	Sorgenfrei Creek Riparian Restoration - Adopt A Stream Foundation	1,300	LINEAR FEET
	WQC-2015-Adopta-0011	Catherine Creek Riparian Buffer Enhancement - Adopt A Stream Foundation	1,335	LINEAR FEET
	WQC-2015-Adopta-0011	Northpointe Park Riparian Enhancement Project - Adopt A Stream Foundation	680	LINEAR FEET
	WQC-2015-MSRF-00104	Methow Water Quality Restoration and Monitoring Project - Methow Salmon Recovery Foundation	500	LINEAR FEET
	WQC-2015-SoSaSo-0004	Stillwater Natural Restoration - Sound Salmon Solutions	1,500	LINEAR FEET
	WQC-2015-SoSaSo-0004	Lower Mainstem Stillaguamish Restoration - Sound Salmon Solutions	1,140	LINEAR FEET
	WQC-2016-ClaPUD-0037	East Fork Lewis - Zimmerly Restoration Project	825	LINEAR FEET
	WQC-2016-FerrCD-0006	Water Quality Improvement in Ferry County	688	LINEAR FEET
	WQC-2016-OkHiAl-0012	Triple Creek Water Quality Restoration Project	1,800	LINEAR FEET

2.4 Washington's 2017 Best Management Practices Implemented

BMP Type	State Project Number	Project Title	SUM(Number Installed	Unit of Measure
Riparian Forest Buffer	G1400415	Matching: Alpowa Creek Straight to Implementation - Asotin County Public Utility District #1		AC
	WQC-2017-Adopta-0013	Upper Catherine Creek Riparian Restoration	8	AC
	WQC-2017-Adopta-0022	Strawberry Fields Buffer Enhancement	9	AC
	G1400452	Thornton Creek Streamkeepers - Adopt A Stream Foundation	1,965	LINEAR FEET
	G1400491	Matching: Re-Tree Woods Creek: A Riparian Re-Forestation Project - Snohomish Conservation District	9,555	LINEAR FEET
	G1400501	Matching: Wenatchee Basin Water Quality Restoration Project - Chelan County Natural Resources Department	150	LINEAR FEET
	G1400564	Matching Project: Salmon Creek Watershed Restoration II -Clark Public Utilities	3,300	LINEAR FEET
	WQC-2015-LCEP-00086	East Fork Lewis River La Center Bottoms Riparian Restoration Project - Lower Columbia Estuary Partnership	3,800	LINEAR FEET
	WQC-2015-NisqIT-0005	Matching: Ohop Phase III Riparian Revegetation Project - Nisqually Indian Tribe	4,517	LINEAR FEET
	WQC-2015-OkanCD-0000	Matching: Okanogan Water Quality BMPs Project - Okanogan Conservation District	300	LINEAR FEET
	WQC-2015-SkCoPW-0003	Matching: Trumpeter Creek Riparian and Channel Restoration - Skagit County Public Works	1,800	LINEAR FEET
	WQC-2016-Adopta-0036	Hayho Creek Riparian Enhancement Project	1,335	LINEAR FEET
	WQC-2016-NoYaCD-0019	Naches River Basin Water Quality Restoration Project	1,000	LINEAR FEET
	WQC-2016-PaloCD-0014	Riparian Restoration for NPS and Temp. Control, South Fork Palouse River	7,100	LINEAR FEET
	WQC-2016-SnohCD-0009	Monroe Wetland Park Restoration Project	3,750	LINEAR FEET
	WQC-2016-SpoCoD-0022	Spokane NPS Reduction Implementation and BMP Database Project	2,750	LINEAR FEET
	WQC-2016-StCoCD-0017	Lake Spokane Phosphorus Input II	75	LINEAR FEET
	WQC-2016-TLC-00278	Riparian Restoration and Stormwater Education in the Hangman Creek Watershed	3,200	LINEAR FEET
	WQC-2016-WilFiC-0028	Langlois Creek Restoration Project	500	LINEAR FEET
	WQC-2017-Adopta-0013	Upper Catherine Creek Riparian Restoration	1,202	LINEAR FEET
	WQC-2017-Adopta-0022	Strawberry Fields Buffer Enhancement	2,486	LINEAR FEET
	WQC-2017-LCEP-00115	East Fork Lewis River Side Channel Restoration Project	5,400	LINEAR FEET
Stream Habitat Improvement and Management	WQC-2015-SkCoPW-0003	Matching: Trumpeter Creek Riparian and Channel Restoration - Skagit County Public Works	2,000	LINEAR FEET
	WQC-2016-OkHiAl-0012	Triple Creek Water Quality Restoration Project	1,800	LINEAR FEET
Streambank & Shoreline Protection	G1400415	Matching: Alpowa Creek Straight to Implementation - Asotin County Public Utility District #1	150	FT
	G1400415	Matching: Alpowa Creek Straight to Implementation - Asotin County Public Utility District #1	900	LINEAR FEET
	WQC-2016-FerrCD-0006	Water Quality Improvement in Ferry County	688	LINEAR FEET
Tree/Shrub Establishment	WQC-2015-LIBC-00098	Matching: Smuggler's Slough Restoration Project - Lummi Indian Business Council	11,475	INDIVIDUAL UNITS
	WQC-2015-MCFEG-00072	Ellensburg Area Riparian Enhancement - Mid-Columbia Fisheries Enhancement Group	5,955	LINEAR FEET
	WQC-2016-MCFEG-00215	Yakima River Side Channels, WRIA 37	1,375	LINEAR FEET
	WQC-2016-NoYaCD-0019	Naches River Basin Water Quality Restoration Project	2,000	LINEAR FEET

CWA 319 Grant Balance (Unliquidated Obligations) 3/2018						
Project	**Grant #**	**FY**	**Project Period**	**Grant Award Amount (Fed)**	**Balance (ULO)**	**% ULO**
WA-FA09	C9-00044908	13	7/1/2013 – 6/30/2018	$5,770,000	$249,636	4.33%
WA-FA10	C9-00044909	15	7/1/2015 6/30/2020	$5,872,900	$1,961,296	33.40%
WA-FA11	C9-00044910	17	7/1/2017 06/30/2022	3,088,000	$2,204,504	71.39%

CWA 319 Grant Balance (Unliquidated Obligations)- Match 3/2018						
Project	**Grant #**	**FY**	**Project Period**	**Grant Award Amount (Fed)**	**Balance (ULO)**	**% ULO**
WA-FA09	C9-00044908	13	7/1/2013 – 6/30/2018	$3,846,666	$0.0	0.00%
WA-FA10	C9-00044909	15	7/1/2015 6/30/2020	$3,915,267	($234,154)	-5.98%
WA-FA11	C9-00044910	17	7/1/2017 06/30/2022	$2,058,667	$1,312,938	63.78%

*FA10 is over matched. Surplus will be moved.

Chapter 3:
Implementation in Action

In 2017 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.

Ecology has taken important steps toward focusing our limited resources on the implementation of BMPs which protect water quality. We have continued to align the TMDL and nonpoint programs to better leverage an array of staff skills, and to orient programmatic efforts toward cleaning up watersheds impaired by nonpoint sources of pollution. As detailed below our regional offices are evaluating what tools (nonpoint/TMDL/combination of both) are most effective at getting to clean water, and pursuing strategies that make better use of our TMDL and nonpoint resources.

Additionally, in 2017 there was significant progress made on our Puget Sound Nutrient Source Reduction Project. Puget Sound water quality is changing due to excessive levels of nutrients from human sources. Monitoring data has identified many places throughout Puget Sound that are impaired for dissolved oxygen. This project will allow us to better understand the sources of nutrients and work with stakeholders to find ways to reduce nutrient discharges to meet the DO standard.

There continues to be a need to finalize BMP guidance for agriculture to provide regulatory clarity/certainty, ensure compliance with state and federal laws, and promote achievement of the water quality standards. The updated NPS Plan highlighted this gap in our program. In 2017 we made significant progress. Ecology finalized our approach to developing the guidance (we are calling it Voluntary Clean Water Guidance for Agriculture) and have selected an advisory group to provide feedback and help guide the guidance development process. The first meeting of the advisory group was held in 2017. This work will continue into 2018 and subsequent years.

At the policy level, we continue to engage in multiple efforts to clarify how processes outside of Ecology will ensure water quality protection. Ecology continues to coordinate with the Washington State Department of Agriculture to implement our Memorandum of Agreement; we are continuing to monitor enactment of forest practices adaptive management program; and continue engagement with agriculture producers and stakeholders to improve how we address agricultural pollution.

Furthermore, significant progress was made in 2017 on designating the Puget Sound a no-discharge zone. The majority of the year was dedicated to rulemaking to adopt a new rule "Vessel sewage no discharge zones" (Chapter 173-228 WAC), to establish a Puget Sound No Discharge Zone.

Throughout 2017, Ecology continued to put into practice the NMFS guidelines for Riparian Buffers Along Agricultural Water Courses in Washington.[1] Our funding programs carry some of the most protective standards in the country and have led to the implementation of protective practices throughout the state.

Finally, at the watershed scale, regional staff continued to develop implementation systems using innovative approaches to better target resources, identify pollution sources, and spur the application of BMPs. In 2017, Ecology staff continued to work closely with local conservation districts, county governments, and nonprofits, to provide focused and innovative outreach, as well as, develop attractive incentives to increase the participation in stream restoration/protection and BMP implementation programs which specifically address nonpoint sources of pollution.

This chapter details these efforts.

3.1 Clean-up Impaired Waters and Meet Water Quality Standards (Goal 1)

3.1.1 Ecology Led Watershed Clean-up Work (Goal 1-Clean-up impaired Waters and meet Water Quality Standards-Develop and Implement Watershed Clean-Up Plans (TMDLs and STI projects))

TMDL/STI development (Goal 1: Complete TMDLs and STI individual work plans that include all elements of a watershed based plan/implement TMDLs and STIs)
During 2017, Ecology continued to develop watershed clean-up plans (TMDLs and STI projects). We completed the Steptoe Creek STI which covers seven listings.

Southwest Regional Office
We have continued to focus on implementation of existing TMDLs and high priority water quality improvement efforts in our southwest regional office. We have supported on-the-ground efforts in Henderson Inlet, North Ocean Beaches, Puyallup River Tributaries, and Chehalis River Tributaries. These implementation efforts are focused on reducing bacteria problems, and BMPs that benefit multiple parameters.

We also are working on completing long-standing efforts to provide technical information to stakeholders in the East Fork Lewis River, Burnt Bridge Creek, and Cranberry, Johns, and Mills Creeks. Additionally, in 2017 we made progress on two multi-decade complex TMDLs: Budd Inlet and Lower White River. Finally, we are encouraging EPA to approve the Deschutes TMDL that we submitted in 2015.

[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.

Eastern Regional Office
At our eastern regional office, in addition to completing the Steptoe Creek STI, we continued to focus on the application of existing TMDLs and high priority water quality improvement efforts. We are actively engaging with partners with our existing TMDLs in the Palouse, Spokane, Hangman, Little Spokane, Tucannon-Pataha, and Snake River watersheds. These implementation efforts are focused on preventing pollution by addressing bacteria problems, in-stream temperature impairments, toxics, and nutrients.

The Hangman Creek watershed is one of the priority watersheds. We focused resources on implementing the bacteria, temperature, and turbidity TMDL approved in 2009 by addressing nonpoint sources of pollution. As part of this effort and as a preliminary TMDL study for dissolved oxygen and pH, we have initiated a watershed wide assessment of phosphorus and sediment. This will help direct implementation in areas which will have the most effect reducing sediment and phosphorus delivery to the Spokane River.

Additionally, we continued to work on TMDL related studies and modeling for the Little Spokane River watershed and the South Fork Palouse River watershed. The Little Spokane River TMDL will focus on improving dissolved oxygen and pH in the watershed and meeting phosphorus allocation at the mouth of the river set by the Spokane River dissolved oxygen TMDL. Work in the South Fork Palouse River watershed is to address temperature, dissolved oxygen and pH.

Central Regional Office
In our central regional office there were no new TMDL projects were initiated in 2017. We continued to focus on developing TMDL projects previously started and focusing on implementation of existing TMDLs. As a result, progress was made on the Upper Yakima Suspended Sediment TMDL, and reserve capacity was identified and accepted by the EPA. TMDL development activities continue on the Cowiche Creek, Upper Naches-Tieton, and Wide Hollow Creeks. We also worked on potential STI projects for Myron Lake, Giffen Lake, and Moxee Drain. These should be submitted for review in 2018.

Northwest Regional Office
In thenorthwest regional office and Bellingham field office, we continued improving impaired waters using TMDLs, TMDL Alternatives, and Watershed Evaluations. Our water cleanup efforts in development include: the Pilchuck River, French Creek, and Sammamish River Temp/DO TMDLs; the Padilla Bay Fecal Coliform TMDL, Soos Creek Temp/DO/Bioassessment TMDL; the Duwamish River Pollutant Loading Analysis, and the South Skagit Bay. We hope to complete the Padilla Bay and Pilchuck River TMDLs in 2018 and have started outreach and monitoring for the South Skagit Bay Watershed Evaluation. The South Fork Temperature TMDL should be out for public comment in the spring of 2018. Lastly we are developing TMDLs for Whatcom Creek and Drayton Harbor.

Puget Sound
Ecology has initiated the Puget Sound Nutrient Source Reduction Project. Through this project we are working collaboratively with communities, stakeholders, and those already working to manage Puget Sound to address human sources of nutrients. This work will focuse regional investments to control nutrients from point and non-point sources to help Puget Sound meet dissolved oxygen (DO) water quality criteria.

Specific activities in 2017 include:

- Organized and hosted a 1-day Puget Sound Nutrient Dialogue that was well attended by over 100 regional stakeholders and scientists. The Dialogue included presentations from water quality scientists and engineers, as well as, fish biologists and nearshore habitat specialists. These specialist spoke about the connection of nutrient over-enrichment on the multiple eutrophication effects in Puget Sound including: low dissolved oxygen, degradation of nearshore eelgrass habitats due to excessive epiphytes and reduced water clarity, increased corrosivity that exacerbates the effects of ocean acidification, changing benthic invertebrate communities that are more indicative of low oxygen conditions rather than toxic exposure, algae blooms, and changes to primary levels of the marine food web that has implications for long-term salmonid and forage fish survivability. Videos of the presentations, a summary of the day's proceedings, and copies of each presenter's slide decks are available on our Reducing Nutrients in Puget Sound web page.
- Began a public outreach strategy that includes an Ecology-blog series called the Puget Sound Nutrient Watch that we cross-promoted using our agency's social media tools and a project listserv. Our effort to continue publishing new blogs that describe different aspects of the nutrient problem in Puget Sound continues in 2018.
- Conducted an extensive stakeholder engagement process from September to December 2017. Altogether we gave presentations about our science describing the nutrient problem and what we are doing about it at 21 meetings in this 4-month period.
- We made a commitment with the Puget Sound Partnership to lead the development of the Marine Water Quality Implementation Strategy (MWQ IS) which supports the Puget Sound Action Agenda and is funded in large part by the National Estuary Program. We drafted an initial work plan for this effort that defines how the project will move forward under a schedule that extends from 2018-2021. The MWQ IS is a collaborative process, using the open-standards for conservation biology methodology, used by the Puget Sound Partnership for the development of multiple implementation strategies to improve and protect Puget Sound using the Action Agenda and Vital Signs.

3.1.2 Implementation (Goal 1: Implement TMDLs and STIs/Completing Watershed evaluations/If working in agricultural areas, implement key changes to Ecology's Watershed evaluation process as recommended by the Agriculture Water Quality Advisory Committee)

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

1. Samish River
2. Nooksack River
3. Upper Chehalis (Newaukum River)
4. Puyallup River (Boise, Pussyfoot and 2nd creeks)
5. Hangman Creek
6. North Fork and South Fork Palouse River
7. Deadman/Meadow Creeks
8. South Skagit Bay

Clean Samish Initiative and South Skagit Bay:
During 2016, Ecology staff continued to work in the Samish watershed to identify and correct pollution problems. We also expanded our efforts to support work in the South Skagit bay watershed. We continued to improve our partnerships in both watersheds and refine our coordination with county inspectors and the Skagit CD. Significant progress is being made in the Samish as we work with partners to reopen shellfish beds.

Ecology Inspectors-Contact Summary	Contacts with Property Owners	Warning Letter	NOV
Samish	10		1

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.
- Coordinated with WSDA and Skagit County on aerial surveys to identify high-risk site conditions that are not visible from public roads.
- Provided updates to the Clean Samish Initiative executive committee on April 5th, and July 5th.

In the South Skagit Bay we focused on developing partnerships during 2017 and developing a strategy for starting the watershed evaluation work. Staff drove the watershed to start identifying possible sources and get a better idea of the land uses present in the watershed.

Whatcom Clean Water Program:
Ecology staff surveyed portions of the Nooksack watershed including Bertrand Creek, Scott Ditch, Anderson Creek, Kamm Creek, Silver Creek, and Ten Mile sub basins. They surveyed portions of Drayton Harbor watershed (Dakota Creek and California Creek). As a result of these surveys, Ecology staff contacted priority sites to address identified nonpoint sources of pollution from livestock.

Ecology Inspectors-Contact Summary	Contact with Property Owners	Waring Letter	NOV
Nooksack River/Portage Bay/Drayton Harbor	38	4	

In addition, inspectors responded to complaints throughout Whatcom County. Several sites covered under the Dairy Nutrient Management Program were referred to the Washington State Department of Agriculture (WSDA) by Ecology Inspectors.

Ecology inspectors continued to coordinate their work with the Whatcom County led - Pollution Identification and Correction (PIC) program.
The County continues to build staffing capacity and expand efforts to new geographic areas. Ecology staff increased efforts to engage with the County staff to support their developing program, and ensure a coordinated field presence.

Finally, Ecology inspectors worked closely with several staff and management from different agencies including, the Whatcom Conservation District, Whatcom County Departments of Health and Natural Resources, Washington State Department of Agriculture, and Washington State Department of Health. The items below highlight efforts to improve that coordination.

- Informally, efforts have been made to improve communication and coordination with Whatcom Conservation District (WCD) farm planners. Ecology continued to make referrals to WCD during 2017.

- Inspectors coordinated their work with Whatcom County led PIC program efforts. The County continues to build staffing capacity and expand efforts to new geographic areas. Ecology staff continued to engage County staff to support their developing program, and ensure a coordinated field presence.

- Inspectors continued to participate in conversations about emerging issues related to the use of manure products on berry farms. These conversations include; Whatcom County, WSDA, WDOH, WCD, and others. Inspectors coordinated with these other agencies in trying to better document cases where manure was used on berry farms. The goal is to better understand the scale of the issue, and how to inform berry farmers of the risks so that they can make decisions that do not result in pollution discharges.

- We have engaged in discussions around transboundary pollution issues.

Eastern Washington Watershed Evaluations:
In 2017, Ecology staff focused the evaluations on the ~ 50 sites contacted in 2013, 2015 and 2016. These sites were identified as having livestock grazing impacts to streams and within the riparian corridor. Sites with pollution from tillage practices were documented but not contacted. A particular emphasis was placed on the Hangman watershed which was evaluated for 3 days.

New Contacts
Staff contacted 10 sites for the first time in 2017, 4 of which were in the Hangman watershed. These producers were first contacted by phone. If no number was available, producers were sent TA letters including, conservation district contact information and a flyer for NRCS water quality protection programs (i.e. CCRP). Five of the 10 were sent letters. Of the remaining sites, 3 scheduled site visits during the initial call, 2 held discussions over the phone but did not need a site visit (i.e. one was not the operator the other planned on moving animals to another location). One of the 10 new sites is in the process of planning a project with Ecology.

Not-Fixed
Of the previously (52) contacted sites, 38 continued to have significant nonpoint pollution problems. Of these 38, 19 have met with Ecology staff face to face on site or at a different location and 12 have spoken with staff over the phone.

There are several sites that have started to make some small changes to their operation but have not taken actions that fully protect water quality (e.g. fence installed with no wire strung, moved feeding but still have severe bank erosion and manure issues from direct access). Eight of these sites (located in the Tucannon, Chamonkane watersheds) were not evaluated in 2017.

At several sites, while we did not see any significant livestock related pollution issues in the riparian areas, and we did not see any structural BMPs implemented. We do not know whether there was a change in their operation or other permanent management changes implemented.. We will monitor these sites further before deeming "Fixed."

Partially-Fixed
There are approximately eight sites that we considered "Partially Fixed" and are currently in the planning stages with Ecology and their Conservation Districts to address their pollution problems and we believe these sites will ultimately be fixed. Of these eight sites, six are seeking financial assistance with Ecology funding and two have implemented BMPs on their own. These sites have made progress but have not yet completed all measures necessary to adequately protect water quality. There is one site currently implementing a project using Ecology funding which was not previously contacted.

For the producers which were contacted, we again offered information on available financial and technical assistance to correct identified problems, as well as, offered to sit down and talk about the pollution issues we identified and the potential fixes.

Fixed
Seven sites have been classified as "Fixed". More sites will move into this category once a Partially-Fixed project becomes permanent and complete.

Based on these 2017 watershed evaluations, the following actions were taken:

- Sent out 7 warning letters
- Sent 6 first contact TA letters
- Called all producers when applicable prior to sending any letter.
- Follow-up and worked with 6 sites that were in planning stages with Ecology/CD.
- Completed ten site visits.

.
During this process, we also checked into several on-going agriculture related complaints, (33) as well as, visited sites where there were previously issued orders (3). Unfortunately, almost all of those sites had significant pollution issues:

- Not Fixed—38
- Partially Fixed—6
- Fixed – 7
- Unknown – 2

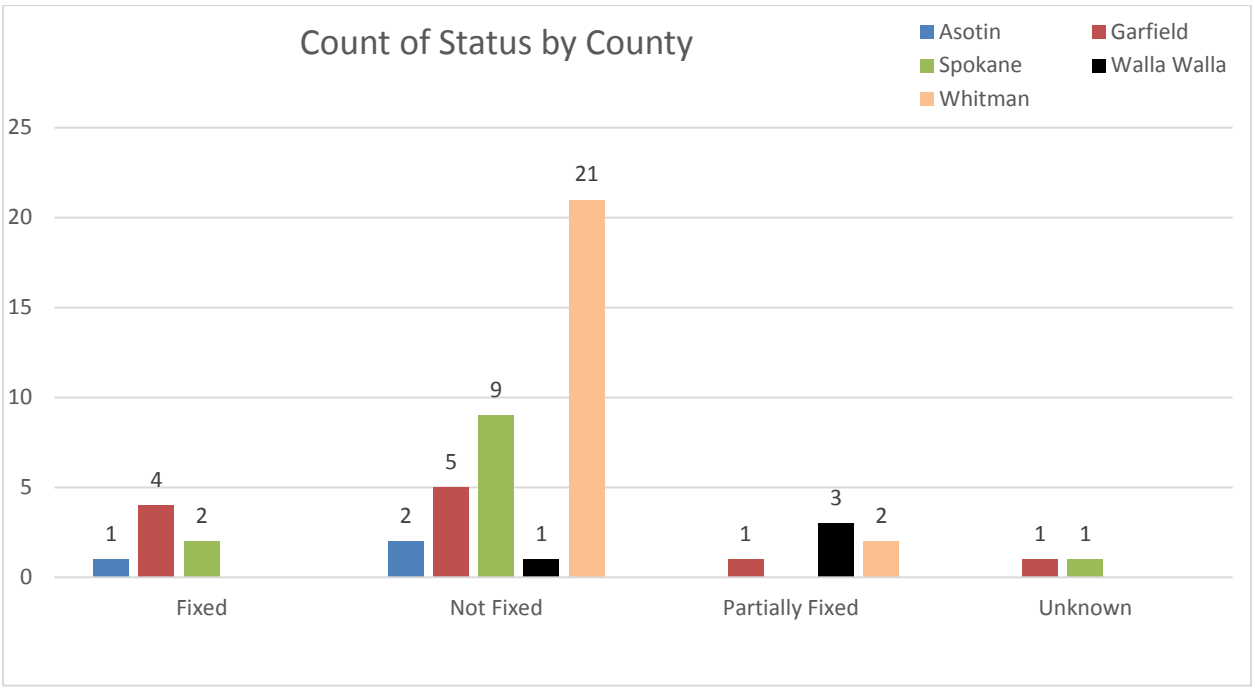


Figure 1. Number of sites for each category evaluated in 2017 colored by county. Tucannon & Chamonkane watersheds were excluded as they were not evaluated.

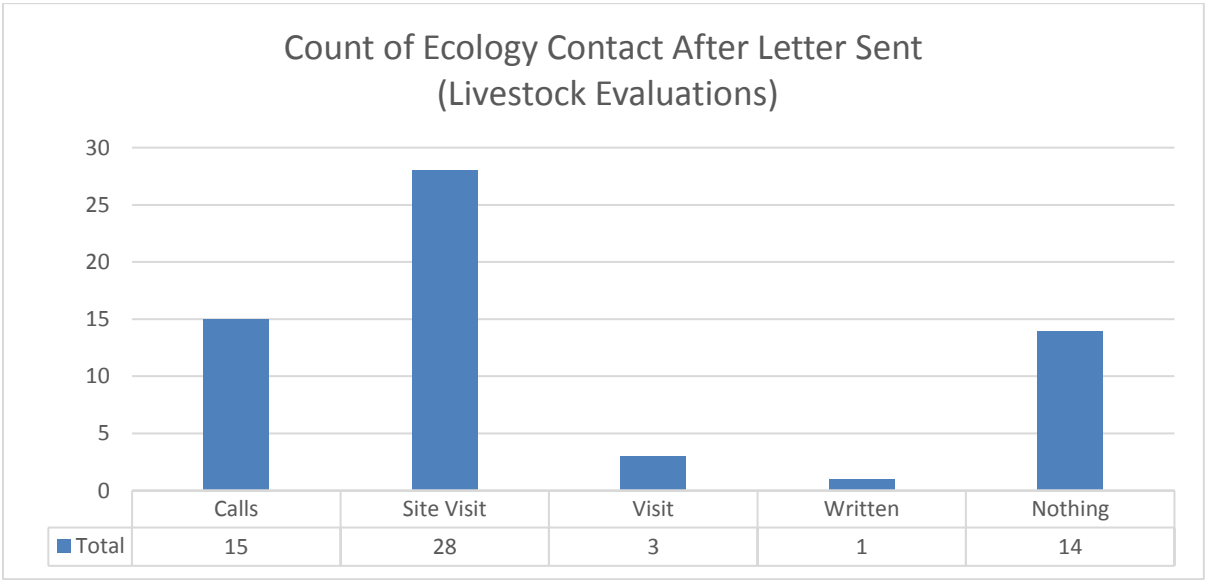


Figure 2.
Ecology correspondence with producers in addition to sending certified letters for sites that were prioritized beginning in 2013. Visits are meetings that occur face to face not on site. Voicemails and phone messages count as "Nothing" if a direct conversation did not occur. This does not include site visits or correspondence for producers that have never been sent a certified letter from evaluations or complaints. Multiple site visits to the same producer is counted here as 1 site visit.

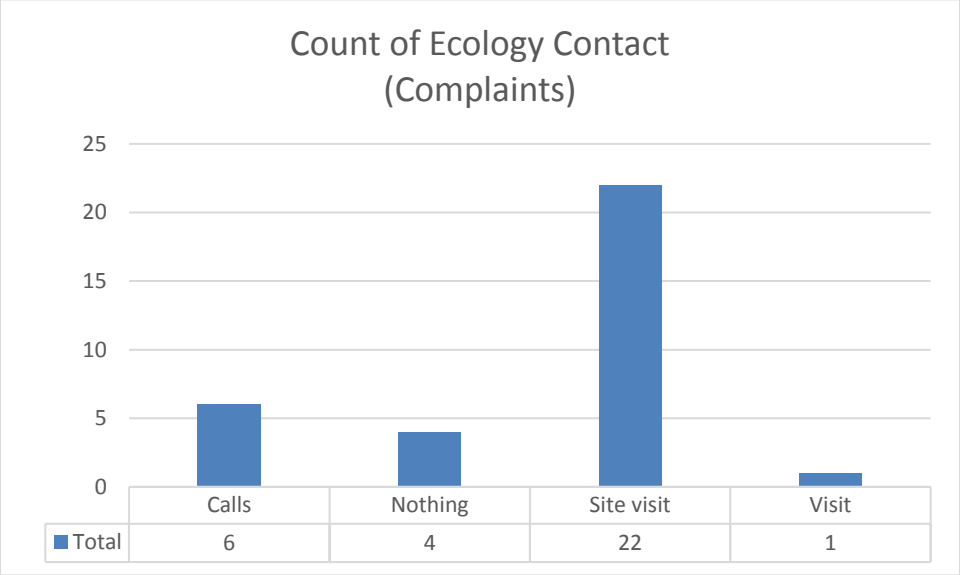


Figure 3.
Ecology correspondence with producers identified from complaints. Visits are meetings that occur face to face not on site. Voicemails and phone messages count as "Nothing" if a direct conversation did not occur. This does not include site visits producers that have never been contacted from watershed evaluations. Multiple site visits to the same producer is counted here as 1 site visit.

Upper Chehalis (Newaukum River) and Puyallup River (Boise, Pussyfoot and Second creeks):
In 2017 staff identified parcels and ranked properties based on level of concern. Technical assistance letters were sent to property owners identified by the watershed evaluations. Owners were requested to either contact nonpoint staff to arrange a site visit or reach out to the local conservation district. 24 property owners were identified and 12 owners contacted the district regarding technical assistance. In 2018 staff plans to continue to focus their work in the Puyallup River watershed by re-assessing parcels and strengthen its working relationship with city, county and tribal staff.

3.1.3 Complaint Response (Goal 1-Clean-up impaired Waters and meet Water Quality Standards-Respond to complaints)

During 2017, 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
- Herbicide application
- Fertilizer
- Manure

There were approximately 80 agriculture related complaints.

3.1.4 PIC Programs and Regulatory Backstop for PIC Programs (Goal 1-Clean-up impaired Waters and meet Water Quality Standards-Support local PIC Programs that help meet WQ Standards and promote compliance with state law)

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. As needed, Ecology provides a regulatory enforcement backstop for counties to help implement the agriculture-related components of their programs.

During 2017, Ecology inspectors have continued to coordinate with PIC programs in the following counties:

- Mason
- Pierce
- Snohomish
- Island
- San Juan
- Clallam
- Thurston

Additionally, Ecology has worked to better coordinate with PIC programs in Skagit and Whatcom counties through the Clean Samish Initiative and Whatcom Clean Water Program.

3.1.5 Market Based Programs (Goal 1-Clean-up impaired Waters and meet Water Quality Standards-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, and 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.

The Pacific Northwest Direct Seed Association worked closely with Ecology staff to ensure the certification process addressed water quality issues in a way which would enable Ecology to provide regulatory certainty, or a *safe harbor* for producers that achieve and maintain certification. Safe harbor means that the Washington State Department of Ecology would not take or pursue formal water quality enforcement actions as authorized by the state Water Pollution Control Act RCW 90.48.

As detailed in last year's report, the Farmed Smart Certification Program's certification criteria was finalized, and Ecology entered into a MOU with PNDSA in 2016.

In 2017 we continued to work with PNDSA to support the Farmed Smart Certification. This program has been very successful in giving credit to farmers who implement protective BMPs, encouraging farmers to implement suites of BMPs, and improving our relationship with the wheat industry. Ecology staff attended meetings of the technical team and answered questions from PNDSA as they arose. Thirty farms were certified in 2017 with approximately 41 miles of streams protected and 82,000 acres of cropland covered by the certification.

3.1.5 Support No Discharge Zone Designation for Puget Sound (Goal 1: Clean-up impaired waters and meet water quality standards- Support no Discharge zone designation for the Puget Sound- Complete final petition to EPA; Marine waters with no discharge zone designation; Submit final petition to EPA by 2020 or earlier)

In 2017 Ecology continued work on establishing a No Discharge Zone (NDZ) ban on vessel sewage in Puget Sound area waters. In response to our petition to establish a NDZ (issued on July 21, 2016), EPA made a final affirmative determination that adequate pumpout facilities for the safe and sanitary removal and treatment of sewage from vessels are reasonably available for the waters of Puget Sound on February 21, 2017. We then initiated a rulemaking to adopt a new rule "Vessel sewage no discharge zones" (Chapter 173-228 WAC), to establish a Puget Sound No Discharge Zone.

The Proposed rule was filed on October 4, 2017. Comments were received through November 30, 2017. We received comments online, during public hearings and by mail. In December we started our review of the comments. Chapter 173-228 WAC was adopted on April 9, 2018. The rule is effective as of May 10, 2018.

More information on the NDZ and rulemaking can be found at:
https://ecology.wa.gov/Water-Shorelines/Puget-Sound/No-discharge-zone 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.

3.1.6 Department of Ecology and State Department of Agriculture Memorandum of Understanding (Goal 1: Clean-up impaired waters and meet water quality standards Support implementation of other state authorities and promote consistency with the WQ Standards-Support the implementation of the Dairy Nutrient Management Program-MOU between Ecology and WSDA is followed and updated as necessary)

The Department of Ecology (Ecology) and Washington State Department of Agriculture (WSDA) continue to operation 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 continues 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).

3.1.6.1 Dairy Nutrient Advisory Committee (DNAC) (Goal 1: Clean-up impaired waters and meet water quality standards Support implementation of other state authorities and promote consistency with the WQ Standards- Ecology and WSDA continue to work on the gaps identified in the Dairy Nutrient Management Act)

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. According to the proviso "The department in consultation with interested stakeholders shall identify gaps in the manure management program, including existing rules and statutory language, and report on a strategy to address those gaps." ESSB 6052 Senate Bill, Chapter 4, Laws of 2015, Section 309(3).

Members included WSU, conservation commission, Department of Ecology, conservation district staff, representatives from agricultural, livestock, and crop organizations, environmental organizations, tribal government representatives, and certified crop advisers.

The DNAC met with Director Sandison six times between September 2016 and March 2017. DNAC will continue meeting to provide ongoing input to and as a sounding board for Director Sandison on dairy nutrient management.

A final report to the Legislature was issued in June 2017. Gaps identified in the report include:

- Manure from dairies does not have to be managed to the same standard when exported off the dairy farm as it does when managed on the dairy farm.
- Existing dairy penalties are not consistent and are not necessarily meaningful or a deterrent to violation.
- There is no penalty for failure to follow or update an NMP.
- NMPs are not easy to use or apply.
- Lack of adequate resources for preparing and certifying NMPs.
- Lack of adequate tools for on-site decision making about manure applications.
- Lack of adequate resources for training and technical assistance.

The report provides strategies to consider for each gap identified. A copy of the report can be found here: https://agr.wa.gov/FP/Pubs/docs/634-DNMP2017LegReport.pdf

3.1.7 Forest Practices (Goal 1: Clean-up impaired waters and meet water quality standards-Support implementation of other state authorities and promote consistency with the WQ Standards-Support the 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:

- 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 2017 we had six regional staff act as filed inspectors. Inspectors engaged in the following activities to support the implementation and enforcement of the forest practice rules:

- Participate 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.
- Participated in meetings and work sessions to implement, and refine as needed, a stream typing prioritization plan and procedures for coordinating between landowners and reviewers prior to stream protocol surveys.
- Performed field inspections of selected streams, complete and submit water type modification forms when appropriate based on field observations.
- Assisted DNR and WDFW in performing timely inspections of selected streams for which water typing concerns have been raised during the FPA review process.
- Provided staff to assist DNR and WDFW to develop guidance and training of policy and procedures pertaining to water typing to state agency staff and cooperators.

[2] Covered below in section 3.2.2.

- 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.

3.2 Ensure Clear Standards (Goal 2: Ensure Clean Standards)

3.2.1 Agriculture BMP Process (Goal 2: Identify BMPs and measures that are 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- Continue work to provide information about what BMPs or suites of BMPs Ecology considers provide presumed compliance with state water quality laws –Completed BMP guidance in the form of manuals, compendiums or other guidance documents for each category of nonpoint pollution)

The development of clear, standalone, clean water BMP guidance for agricultural sources is a key enhancement for our nonpoint source (NPS) pollution program. EPA conditioned the approval of our NPS plan on developing this guidance. 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. Instead of jumping directly into the work of assembling BMP guidance, we decided it was important to engage with stakeholders and tribes to receive input on how to approach this work in a way that has valuable buy-in from all parties.

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 2017 we completed the process design (including a response to comments on the draft design), recruited people to participate on the Advisory Group called for in the process design and kicked off the work of developing the guidance.

For more information on the process design and our response to comments can be found at: https://ecology.wa.gov/About-us/Our-role-in-the-community/Partnerships-committees/Voluntary-Clean-Water-Guidance-for-Agriculture-Adv

Key to our approach to developing the guidance was the formation of an advisory group (the Voluntary Clean Water Guidance for Agriculture Advisory Group). The group was established to advise us on the identification and implementation of practices that can help farmers meet clean water standards. Advisory Group members will guide the development of the guidance, provide review and feedback, and have an opportunity to contribute to the guidance's ultimate success.

We reached out to a wide range of stakeholders to find qualified candidates to be a part of the advisory group.

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.

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 Vargas-WDFW

The first advisory group meeting was held on December 18, 2017. Stakeholder response has been overall positive to this effort, and as a result we are making significant progress in creating science based guidance.

3.2.2. Forest Practices (Goal 2: Ensure clear standards-Identify BMPs and measures that are 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-Support updates to the forest practices rules based on adaptive management process; and Goal 1: Clean-up impaired waters and meet water quality standards-Support implementation of other state authorities and promote consistency with the WQ Standards-Support the implementation of forest practices rules statewide-periodic reviews of the Forest Practices Rules adaptive management program and the Clean Water Act Assurances)

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 preferred 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).

Led by a commitment from the Forest Practices Board, however, work on examining the effectiveness of the rules and programs protecting water quality continue to progress even if slower than planned.

The Board is further committing direct effort to create an even more reliable adaptive management program, with the purpose to test and revise the state forestry rules where necessary to meet the CWA and the other resource goals established through the 1999 Forests and Fish Report.

The following table shows the corrective milestones and their status as communicated to the Washington Forest Practices Board at their February 2018 meeting:

Summary of CWA Assurances Milestones and current status:

Non-CMER Project Milestones		
	Summarized Description of Milestone	**Status as of January 2018**[3]
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 input from Ecology, WDFW, and tribes on road work priorities.	**Completed** September 2011
	February 2010: Develop a prioritization strategy for water type modification review.	**Completed** March 2013

Non-CMER Project Milestones		
	Summarized Description of Milestone	**Status as of January 2018**[3]
	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** TFW Policy has reactivated work to complete this milestone. After reaching a tentative agreement on how to handle identification of the Upper Most Point of Perennial Flow during the wet season, Policy agreed to recommend the Board direct DNR to establish a technical work group to resume development of Board Manual 23.
	October 2010: Conduct an initial assessment of trends in compliance and enforcement actions taken at the individual landowner level.	**Completed** November 2010
	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.

Non-CMER Project Milestones		
	Summarized Description of Milestone	**Status as of January 2018**[3]
	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.

CMER Research Milestones		
Description of Milestone		**Status as of January 2018**[1]
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	**Underway**
	Scope: Eastside Type N Effectiveness	**Completed** November 2013

CMER Research Milestones		
Description of Milestone		**Status as of January 2018[1]**
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	**Earlier Stage Underway**
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 still need to completed and transmitted back to ISPR for approval.
	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	**Underway** ISPR approved study design awaiting CMER concurrence.
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 representing slopes at risk of mass wasting.	**Underway** Draft study approved to send to ISPR in January 2018.
	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**
	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 ready for submittal to CMER.

CMER Research Milestones		
Description of Milestone		**Status as of January 2018[1]**
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.
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**
	Implement: Watershed Scale Assess. of Cumulative Effects	**Off Track** Discussed above for 2016 Scoping.
	Complete: Type N Experimental in Incompetent Lithology	**On Track**
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.

3.3 Develop and Strengthen Partnerships (Goal 3)

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:

3.3.1 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 2017, the committee met on March 30th, June 1st and September 28th. 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

3.3.2 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. We presented information on Voluntary Clean Water Guidance for Agriculture to both groups in 2017.

FAC meetings were held on July 19th, and November 15th, 2017. 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 June 15th, and September 14th, 2017. For more information on the WQP meetings please visit: https://ecology.wa.gov/About-us/Our-role-in-the-community/Partnerships-committees/Water-Quality-Partnership

3.3.3 Strengthen Relationships with Federal and State Agencies and Local Governments and Special Purpose Districts (Goal 3-Develop and strengthen partnerships-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.

Additionally, in 2017 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 2017, Ecology continued to work toward strengthening our partnership with the USDA Natural Resources Conservation Service (NRCS). We held meetings with NRCS staff on June 22nd, and September 20th. The primary focus of these meetings was to coordinate on the National Water Quality Initiative (NWQI). During this time, NRCS elected to remain in the same watersheds (Nooksack River watershed) and not expand to new watersheds. These meetings have improved our coordination with NRCS and information sharing regarding the NWQI.

Ecology recommended that if NRCS should elect to add watersheds to the NWQI, that they consider the Stillaguamish and Hangman Creek as well as the Newaukum River, Yakima River, Walla Walla River and the Tucannon River. They will consider adding watersheds in subsequent years (2018 or later). Throughout 2017, we also continued our previous offers to coordinate on effectiveness monitoring in the Nooksack watershed, as well as, provide current information on our monitoring activities in the NWQI watersheds.

During these meetings, we provided NRCS with information on our Clean Water Guidance for Agriculture process. NRCS has two employees who will participate in the advisory group for that project.

Furthermore, we are a partner on two Regional Conservation Partnership Program (RCPP) projects, the Palouse River and the Spokane River funded by NRCS. The Palouse River RCPP led to a successful monitoring collaboration (see below in the effectiveness monitoring section for more information on this effort).

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

4.3.4 Tribal Coordination (Goal 3-Develop and strengthen partnerships-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 meetings hosted by the NWIFC (Coordinated Tribal water quality program meetings). During these meetings we have presented information on the Clean Water Guidance for Agricultural guidance process and 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.

3.4 Monitoring Efforts (Goal 4: Monitor waters for nonpoint source impairments, and program effectiveness-Continue monitoring efforts/ Effectiveness Monitoring)

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.

In 2017 the Newaukum River long term effectiveness study was implemented and the first 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.

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 year of monitoring indicate sediment loading from the watershed with greater than 80% no-till farming practices (Kamachie) was significantly less than the watershed with 20% no-till farming practices (Thorn Creek).

EAP is also working with the King Conservation District to develop a QAPP to assess the effectiveness of different size buffers at maintaining temperature standards 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.

3.5 Administering the Nonpoint Source Program (Goal 5 Ecology will administer its Nonpoint Source Program as effectively and efficiently as possible-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 SFY18 combined funding projects: https://public.tableau.com/views/WaterQualityCombinedFundingProgramFinalSFY18OfferList/2018FinalList?:embed=y&:display_count=yes&:showVizHome=no

3.5.1 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.

Goals:
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:

- Monthly coordination meetings and we regularly report out to the Governor's Goal Council 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.
- One Portal. 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 Results WA and provides not only entry to available Washington state water and salmon funding opportunities, but also a front splash page with regular funding news updates, 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.

3.6 Nonpoint TMDL Implementation Tracking System (Goal 5 Ecology will administer its Nonpoint Source Program as effectively and efficiently as possible-Promote accountability-Develop TMDL and nonpoint implementation database)

Ecology staff are currently using a prototype mobile application and database to track nonpoint site evaluations and inspections. The system uses ESRI software to collect site condition data which is currently uploaded to ESRI's cloud server. Data collected using the mobile application includes information such as geo-located photographs, site conditions, pollution sources, field notes, land use and BMP implementation data.

The prototype database and mobile application originated out of the need to better collect and track field information gathered during watershed evaluations and complaint responses. Nonpoint staff needed a tool to efficiently collect field data and manage and analyze field observation information spatially. Outcomes from the use of the prototype mobile application and database were increased efficiency and improved data management.

Use of the system greatly improved record keeping and data consistency and provided the ability to use mapping technology to create and display geospatial data.

The Water Quality Program is currently working to finalize a custom configured mobile application using ESRI's Collector and Survey 123 programs specifically designed for Ecology's field data collection workflow and data storage needs. Additionally, Ecology is developing an internal database to storage and management field collected data currently stored in ESRI's cloud server.

While the mobile application will be a key step forward, the ultimate goal is to have a Nonpoint and TMDL Implementation tracking system to store both nonpoint field data and important TMDL information in an integrated way. In 2015, Ecology secured a National Environmental Information Exchange Network Grant to develop a web-based tool for that purpose. The TMDL/Nonpoint Implementation database and web map application will be based on the prototype mobile application and is meant to integrate data in a way that is useful to both nonpoint and TMDL staff. The database user interface will be designed as a desktop application so it can be accessed both in the field and in the office, and will be available to a wide variety of users.

The database will meet the Water Quality Program's key nonpoint and TMDL business needs and will contain a variety of information including, but not limited to:

- Nonpoint site inspection data e.g.:
  - geo-tagged photographs,
  - field notes,
  - site condition,
  - BMPs implemented,
  - records of contacts with landowners

- TMDL Project information e.g. :
  - project boundary,
  - water quality allocations,
  - implementation needs and activities implemented,
  - associated permits,
  - pollutants addressed by project

The database design for the nonpoint and TMDL implementation database are complete, and efforts have transitioned to finalization of the mobile application for field data collection and design of a desktop interface to view and enter data TMDL Implementation and additional nonpoint field. We expect to complete the mobile application and begin field testing and staff training in 2018. The database and desktop interface development will begin in 2018 with the goal of completing the project in 2019.

Chapter 4:
Conclusions

The implementation path to clean water has provided the opportunity for continual learning. As Ecology begins to take more steps past the plan and development stage, and toward the goals, we are afforded the opportunity to engage in a processes which will strengthen our efforts and better elucidate our roles.

Throughout our 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.

Reflecting on this year's successes and difficulties, we have made progress in better addressing pollution sources, as well as, implementing practices to impact those sources. 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.. The clean water guidance is moving forward with a goal of producing guidance on the first set of practices to be completed by the end of 2018. This process has gained the support and participation of a diverse group of stakeholders. 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 improve water quality in the Puget Sound. We made significant progress in establishing a no discharge zone in the Puget Sound. As well as, initiated the Puget Sound Nutrient Source Reduction Project as a strategy to control nutrient discharges to Puget Sound.

However, work remains. We have to further refine the strategies in our priority watersheds, better track and document what we find, and better communicate our strategy and goals to the public. Additionally, we continue to strengthen local partnerships while implementing nonpoint source pollutant reductions through both traditional and innovative methods. Although these efforts are undoubtedly time consuming, they are integral to developing a nonpoint framework, setting the stage to address one of the most difficult water quality problems in the nation.

While much has been accomplished thus far, Ecology remains cognizant of the enormity of the problem and the additional work needed. Specifically, we understand the need to complete the clean water guidance (BMP guidance) for agriculture as expeditiously as possible.

In addition to this planned and strategic nonpoint approach, we maintain that our end goals are effective to on-the-ground change, consistent unified messages, and ultimately, accomplishing clean water. To that end, Ecology will require continued support and financial security to support both the staff and the actions to implement our clean water initiatives.

Appendix A

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
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Memorandum

October 24, 2017

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. Our last update to the Board occurred at your August 2016 Board meeting.

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 based on the expectation that the program meet a list of process improvements and performance objectives. These are the milestones reported on in this update.

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 intent to encourage process changes that would lead to cooperators working more productively together to create a more effective research program to test and adjust the rules long-term.

Enclosed are two tables showing the milestones and summarizing their current status. The first table 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). Changes in status since our last briefing and points of note are highlighted in red font.

Since the Board's August 2016 meeting, the TFW Policy Committee has restarted work to develop guidance for identifying the uppermost point of perennial flows in Type Np (perennial non-fish-bearing) waters, and DNR is taking steps to arrange independent fiscal and performance audits for the AMP and has established a biennial sampling program to assess compliance with the unstable slopes rules. Within the CMER research program, work has begun to scope a landscape scale mass wasting study, scoping completed and a study design sent to Independent Scientific Peer Review (ISPR) for a study examining the effectiveness of the (Rule Identified Landforms (RILs) in identifying slopes at risk of mass wasting, scoping completed and a draft study design underway on a forested wetlands effectiveness monitoring study. Ecology is particularly pleased to see the Type N Hard Rock study through ISPR and approved by CMER, and its companion study in soft rock lithology expected to be completed in 2018. These milestones were high priorities for our agency.

While progress is being made on other projects important to the Assurances, some such as the eastside Type Np effectiveness monitoring study continue to be delayed and off schedule. The CWA research milestones were initially set to distribute the effort and costs across Science Advisory Groups (SAGs) and across time in order to make attainment of the milestones feasible. This initial schedule was reflected in the approved CMER budget and work plan. The continued and often long-term delay in advancing the milestone projects has contributed to a situation where remaining milestones need to be completed during a period of time when projected expenditures exceed revenues. Policy has assembled two budget subcommittees to suggest options to reduce future budget deficits and prioritize the projects on the Master Project Schedule (MPS). Ecology has and will continue to work with its TFW partners to consider changes to the CWA milestones based on new understandings of the relative ability of a specific research project to effectively inform rules set to protect water quality. However, a budget shortfall, which is in part due to not being able to prioritize and complete the planned projects on schedule, will not be viewed by Ecology as a sound basis alone for changing or removing milestones.

Please contact me if you have any questions or concerns (360) 407-6477.

Enclosure

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.

Between 1988 and 2017 Ecology has awarded and 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 2018 Ecology offered $6,032,933 in state funds not used as Section 319 or other federal match from our Centennial Grant Program and $9,603,733 from Clean Water State Revolving Fund non-federal funds.

Maintenance of Effort (MOE) List for State Fiscal Year 2018 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	CWSRF Forgivable Loan	Short Description
Tacoma - Pierce County Health Department	Expansion of regional septic loan program for water quality improvement	On-Site Sewage System	Statewide	$1,500,000	$5,000,031	$1,500,000	The Regional Loan Program (RLP) is a 16 county partnership with nonprofit lender Craft3 offering assistance via inclusive, affordable “Clean Water” loans to repair failing onsite septic systems. RLP loans reduce barriers to compliance and contribute to improved marine, saltwater estuary and groundwater quality benefitting public health, water quality and shellfish harvesting areas. This project expands locations served by RLP and increases lending capital particularly for low income households.

San Juan Islands Conservation District	Developing and Implementing a Direct Seed Program in the San Juan Islands	Non Point Source Activity	SAN JUAN	$86,370	$0	$0	The San Juan Islands Conservation District (SJICD) seeks to implement a Direct Seed Program in San Juan County that will provide county-wide access to direct seed equipment, on-site technical assistance for best management practices, and outreach and education to agricultural producers. SJICD will purchase a single pass, low disturbance direct seed drill that will be available for rent. Farmers will implement methods to restore pastures and plant cropsusing low tillage direct seed methods.
Bellingham city of - Public Works Department	Little Squalicum Creek Estuary Restoration	Non Point Source Activity	WHATCOM	$500,000	$0	$0	The project improves water quality through restoring an estuary in Little Squalicum Park on the western 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 additional riparian plantings will provide thermal protection and surface water filtration for freshwater and marine inputs.
Cowlitz County - Health and Human Services Department	Silver Lake Sediment and Water Quality Testing plus Engagement Project	Non Point Source Activity	COWLITZ	$130,101	$0	$0	Building on the high phosphorus results confirmed by grant WQC-2015-CwCoHH-00129, this project will identify current phosphorus and E. coli contributors. Sampling will be performed in the two major inlet creeks. Lake sediment will be evaluated for phosphorus accumulation and chemical composition. Community education and lake water quality sampling will continue. These efforts will assist community groups and agencies in planning strategies for lake management and restoration.
Chelan County - Natural Resource Department	Addressing the Temperature TMDL in Nason Creek	Non Point Source Activity	CHELAN	$180,770	$0	$0	This project proposes a comprehensive approach to addressing the temperature TMDL in Nason Creek. Actions include development of planning documents, data collection and monitoring, and implementation to improve water temperature in Nason Creek. Project implementation includes riparian planting and a culvert removal. Data collection includes sediment, shade, and

							temperature monitoring. Project planning includes development of an erosion control plan and a thermal refugia management strategy.
Foster Creek Conservation District	Douglas County Agricultural BMPs	Non Point Source Activity	DOUGLAS	$250,000	$0	$0	The Douglas County Agricultural BMPs project is designed to improve water quality in and around Douglas County streams and tributaries through the continuation of a direct seed program that provides assistance to local producers to convert from conventional tillage to direct seed systems. The program will result in at least ten additional direct seed participants, continued water quality monitoring, soil testing and monitoring, cost-benefit analyses and education efforts.
Lummi Indian Business Council	Creating Cool Water Temperature Refuges in the SF Nooksack River	Non Point Source Activity	WHATCOM	$252,812	$0	$0	To provide temperature refugia and help restore salmon habitat that will aid salmon recovery in WRIA1, this project will construct 13 engineered logjams in the mainstem SF Nooksack River (Fig 1 & 2). These ELJ-formed scour pools will provide a cool water refuge during elevated water temperatures in the summer for migrating adults as they move upstream to spawning grounds.
Lynden city of - Public Works Department	Pepin Creek/Double Ditch Creek Realignment - Bank Stabilization	Non Point Source Activity	WHATCOM	$500,000	$2,402,593	$0	This phase of the Pepin Creek Project will stabilize the already fragile shoreline from Main Street downstream to the confluence of Double Ditch and Fishtrap Creeks - about 0.75 miles. This work is essential and must be completed before water from Pepin Creek can be directed into this section. Lynden is working to address a significant water problem caused by over-topping roadside ditches along Benson and Double Ditch Roads by realigning flows into a new Pepin Creek riparian corridor.

Snohomish Conservation District	Targeted Big Buffer Restoration: Stillaguamish River	Non Point Source Activity	SNOHOMISH	$249,169	$0	$0	The Snohomish Conservation District will develop an outreach program targeting big riparian buffers on high priority reaches in the Stillaguamish River watershed. Over eleven acres of riparian forest will be planted to protect and enhance habitat at cold water anomalies identified in a TMDL Assessment project completed by Snohomish County, thus providing temperature refuge for threatened salmonids.
Palouse Conservation District	Watershed planning for optimal BMP placement and NPS pollution reduction.	Non Point Source Activity	WHITMAN	$250,000	$0	$0	Conservation programs addressing nonpoint source pollution in the Palouse River watershed need the most optimal selection and placement of best management practices (BMPs). We will use a tested BMP effectiveness tool in collaboration with district planners to identify critical source areas and the greatest pollution reduction. District planners and landowners will be educated on advanced BMP implementation strategies. Water quality monitoring will be used to assess watershed scale effectiveness.
Asotin Conservation District	Asotin County Water Quality & Riparian Enhancement Project	Non Point Source Activity	ASOTIN	$250,000	$0	$0	This project will assist landowners with addressing potential and recently identified water quality concerns along streams in Asotin County by implementing Best Management Practices including stream bank stabilization, livestock exclusion fencing, off-steam watering, livestock feeding practices including manure management, stream crossings and riparian planting.
Lincoln County Conservation District	Lincoln County, Palouse Rock Lake, & Pine Creek CD BMP Partnership	Non Point Source Activity	Statewide	$371,250	$0	$0	The Lincoln County, Palouse-Rock Lake, and Pine Creek Conservation Districts will implement a project that will greatly improve the water quality, public health, soil health, and erosion concerns throughout Lincoln, Palouse Rock Lake, and Pine Creek District service areas. Through a direct seed cost share program, the districts will increase the use of direct seed systems and reduce soil erosion by 63,000 tons.

Okanogan Conservation District	After the Fire and Flood: Restoration of Benson Creek Watershed	Non Point Source Activity	OKANOGAN	$250,000	$0	$0	The Okanogan Conservation District is proposing to implement nonpoint source pollution measures to mitigate increases in sediment delivery along the upper Benson Creek waterway. These measures include: two restoration projects (Davis and Betty), a hydrologic assessment, and plans to develop two additional water quality projects within the Benson Creek watershed. The Okanogan CD will also provide water quality education and outreach to Okanogan County landowners, adults, and children.
Port Orchard city of - Public Works Department	Johnson Creek Daylighting Project	Non Point Source Activity	KITSAP	$211,920	$70,640	$0	The City of Port Orchard proposes to daylight Johnson Creek and create a estuary along Sinclair Inlet. The project removes 19,100 sf of buildings and pavement to allow for re-grading and site restoration on 0.8 acre. In addition to creating an estuary with native plants, the project removes a fish barrier, improves the quality of water flowing into Sinclair Inlet, provides public education about the importance of aquatic health, and removes buildings from an area prone to chronic flooding.
Spokane Conservation District	Spokane County On Site Septic Program: Phase II	On-Site Sewage System	SPOKANE	$500,000	$500,000	$0	The Spokane Conservation District will continue their successful On-Site Septic Program by providing small grants and low interest loans for replacing, repairing and connecting septic systems to existing sewer mains. In addition, our program will conduct a Septic Feasibility Study in Newman Lake to resolve targeted septic and cesspool issues causing nutrient (non-point source) issues. Lastly, the program will assist the USGS in its' current groundwater study of septic issues in Lake Spokane.
Pierce Conservation District	Promoting Direct Seed and Cover Crop Practices in the Puyallup	Non Point Source Activity	PIERCE	$81,649	$0	$0	Chinook salmon, Bull Trout, and Steelhead Trout are all listed as Threatened species under the ESA, with runoff from farmlands being one of the contributing factors. This runoff means water is not infiltrating the soil properly, increasing flashiness and helping create low flow conditions detrimental to salmon. This project will diminish

							those impacts by incentivizing the use by local farmers of direct seeding and cover crop practices in the Puyallup Watershed, a high priority salmon stream.
Thurston Conservation District	Community Centered Restoration of the Middle Deschutes Watershed	Non Point Source Activity	THURSTON	$244,401	$0	$0	Thurston Conservation District has put together a Tribal, public, private, and non-profit partnership to restore degraded conditions in the Middle Deschutes River watershed. The collaboration will lead to immediate water quality improvements while engaging the community in the long-term stewardship, restoration and protection of the watershed.
Palouse Rock Lake Conservation District	Eastern Washington Low Disturbance Direct Seed Demonstration Project	Non Point Source Activity	WHITMAN	$224,491	$130,509	$0	This successful application will provide landowners with a low disturbance direct seed equipment to demonstrate high residue seeding. The demand for this type of equipment is on the horizon due to lack to the available equipment.
Grant/Loan Total Offered SFY2018				$6,032,933	$8,103,773	$1,500,000	