

Quality Assurance Project Plan Addendum

Hood Canal Regional Pollution Identification and Correction Phase 4 - Implementation



NTA 2018-0639

June 2020

Prepared for:

Hood Canal Coordinating Council and
Washington State Department of Health

Prepared by:

Leslie Banigan, R.S., Kitsap Public Health District
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Publication Information

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HCRPIC Phase 4 work will be guided by the approved HCRPIC Phase 3 Quality Assurance Project Plan (August 2017) ([linked here](#)) as amended by this QAPP Addendum. HCRPIC Phase 4 QAPP documents, monitoring results, and the final project report will be available on the Hood Canal Coordinating Council's website at: <http://hccc.wa.gov/PIC>

Data for this project will also be available on EPA's Water Quality Exchange (WQX) website at <https://www.waterqualitydata.us/>

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Cover photo: Hood Canal, Washington; taken by Leslie Banigan.

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Hood Canal Regional PIC Program

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2.0 Abstract

The Hood Canal Coordinating Council (HCCC) is a watershed-based council of governments that works with partners and communities to advance a shared regional vision to protect and recover Hood Canal's environmental, economic, and cultural wellbeing. The HCCC includes representatives from Jefferson County, Kitsap County, Mason County, Port Gamble S'Klallam Tribe, and Skokomish Tribe. The HCCC is the Local Integrating Organization (LIO) for the Hood Canal area under the Puget Sound Action Agenda, the Lead Entity for salmon recovery in Hood Canal (RCW 77.85.050-70), the Regional Recovery Organization for Hood Canal summer chum salmon (RCW 90.88.030(1)(a)), and the management board for the aquatic rehabilitation in Hood Canal (RCW 90.88.030(1)).

The Hood Canal Regional Pollution Identification and Correction (HCRPIC) program goal is to identify and correct fecal pollution sources impacting Hood Canal shorelines to achieve water quality improvements that will result in safer, cleaner beaches and an increase in harvestable shellfish growing areas.

Phase 4 is an extension of work that was conducted under the HCRPIC Phase 3 Quality Assurance Project Plan (QAPP) ([linked here](#)) that was approved August 2017 (funded by the U.S. Environmental Protection Agency National Estuary Program under assistance agreement PC-01J18001).

The approved Phase 3 QAPP describes how HCRPIC partners work in coordination with Washington State Department of Health Office of Environmental Health and Safety (WSDOH) programs to implement a directed and coordinated shoreline monitoring and investigation program in high priority Hood Canal Action Area shorelines. It describes how shoreline areas are selected and prioritized for shoreline surveys, the process of shoreline "hotspot" confirmation, investigation, documentation, and closure. Please refer to the Phase 3 QAPP ([linked here](#)) for detailed project information.

3.0 Background

3.1 Introduction and problem statement

The HCRPIC Program maximizes the region's available water quality protection funding by directing work into Hood Canal priority areas that are identified in coordination with WSDOH. The HCRPIC Guidance Group developed the Phase 4 Priority Areas on May 1, 2020 including remaining Phase 3 work areas and new water quality problem areas (Appendix A). Water sampling will be conducted in Mason County, where many of the sites are located. Sample sites will be established within the work areas specified in the Work Plan and may include other problem areas referred by WSDOH or found through public complaints or septic system maintenance deficiencies.

HCRPIC Phase 4 will direct PIC monitoring and investigation efforts into priority areas, facilitate source corrections, update GIS maps, continue to support regional PIC efforts in Hood Canal and pursue effective ways of sustainably funding those efforts, and explore effective ways to communicate program effectiveness to Hood Canal property owners and decision makers.

This Phase 4 funding will allow program members to continue regional PIC work to identify and correct fecal pollution sources in underfunded areas. We continue to build a collective spotlight on the need for sustainable funding throughout the Hood Canal action area.

3.2 Study area and surroundings

There are eighteen shellfish growing areas in the Hood Canal Action Area. As of 2019, the Hood Canal Action Area had 29,766 acres of approved growing areas, 1,515 acres with conditional approval, and about 3,144 acres of prohibited or restricted growing area. WSDOH has identified several emergency closure zones, threatened areas, and areas of concern based on marine water quality data. There are close to 32,000 onsite sewage systems (OSS) in the project area, many near waterbodies and approximately 40% of the systems are over 30 years old. PIC programs have been essential to maintain and improve water quality and will continue to be vital for the health of Hood Canal and its communities.

3.2.2 Summary of previous studies and existing data

NEP funding incubated and grew the HCRPIC program. We continue to benefit from the planning phase that allowed us to develop our strong guidance group and establish common procedures.

Between 2017 and 2019 HCRPIC Phase 3 was able to accomplish the following results through collaboration:

- Inspected 66.6 shoreline miles
- Conducted 380 parcel surveys
- Identified 55 OSS failures - 28 repaired (unrepaired failures will be resolved in Phase 4)

The HCRPIC partners, led by the Skokomish Tribe, Mason County, and WSDOH, have been working diligently in the Hoodsport area to prevent and correct pollution sources and open the rich shellfish resource to harvest. This cooperative work has resulted in water quality improvements in six of nine Hoodsport shoreline pollution hotspots. When the remaining corrections are complete, our goal is that post-corrective monitoring will show water quality improvements that will allow WSDOH to evaluate opening Hoodsport to shellfish harvest for the first time since initial classification.

3.2.3 Parameters of interest and potential sources

HCRPIC Phase 4 will continue to use laboratory analysis of surface water samples for fecal coliform (FC) or E. coli (EC) to investigate and identify fecal pollution sources. HCRPIC's volunteer ambient freshwater monitoring component also measures field parameters: pH, Dissolved Oxygen, and Temperature.

The HCRPIC Phase 4 project work plan does not include nutrient investigations. Nutrient parameters nitrate, nitrite, ammonium, orthophosphate, and the associated chloride and sulfate parameters specified in the approved HCRPIC Phase 3 QAPP will not be collected for this project phase and the UW Analytical Services Center Lab will not be utilized.

3.2.4 Regulatory criteria or standards

In 2019, the State of Washington adopted new Water Quality Standards for Surface Waters of the State of Washington, as codified in Chapter 173-201A of the Washington Administrative Code. The old, more stringent extraordinary primary contact standard for fresh waters was removed and the primary standard remains. The revised freshwater and marine water standards for fecal coliform bacteria are shown in **Table 2** below.

Table 2: Washington State Surface Water Quality Standards and Related Criteria

Parameter	Freshwater Standard	Marine Water Standard
	Primary Contact Recreation	Primary Contact Recreation
Fecal Coliform Bacteria (FC)	<u>Part 1</u> : ≤100 FC/100 mL (geomean). <u>Part 2</u> : Not more than 10% of all samples obtained for calculating a geomean >200 FC/100 mL.	<u>Part 1</u> : ≤14 FC/100 mL (geomean). <u>Part 2</u> : Not more than 10% of all samples obtained for calculating a geomean >43 FC/100 mL.
E. Coli Bacteria (EC)	<u>Part 1</u> : <100 EC/100mL (geomean). <u>Part 2</u> : Not more than 10: of all Samples obtained for calculating a Geomean >320 EC/100mL.	None
Dissolved Oxygen	> 8.0 mg/L	> 6.0 mg/L
pH	6.5 – 8.5 units	7.0 – 8.5 units
Temperature	18.0° C ²	16.0° C ²
Turbidity	Not >5 NTU over background when background turbidity <50 NTU, or not >10% increase in turbidity when background turbidity >50 NTU	Not >5 NTU over background when background turbidity <50 NTU, or not >10% increase in turbidity when background turbidity >50 NTU

1 U.S. EPA criterion (U.S. EPA 1986A).

2 Shall not exceed standard due to *human activities*. When natural conditions exceed these standards, no human caused temperature increases are allowed which will raise the receiving water temperature by greater than 0.3° C.

The HCRPIC team conducts work pursuant to the HCRPIC Guidance Document (March 10, 2014), available on the HCCC website at hccc.wa.gov.

4.0 Project Description

4.2 Project objectives

HCRPIC will utilize GIS regional maps to illustrate Phase 4 shoreline surveys, shoreline hotspot locations and status, parcel surveys, and OSS failures and corrections. We will also map cumulative PIC work in the highest priority areas like Hoodspout to highlight corrective actions and water quality improvements.

4.3 Information needed and sources

Project field work is ready to start following the approval of this Phase 4 QAPP addendum. The Guidance Group developed the HCRPIC Phase 4 Priority Areas (Appendix A) at their Phase 4 kick-off meeting May 1, 2020. Partner staff are trained and preparing for implementation.

4.4 Tasks required

Task 1: Project Development

Task 1.2 QAPP Development: Washington State Department of Ecology's (Ecology) NEP Quality Coordinator approved pursuing a QAPP addendum for HCRPIC Phase 4 based on the previously approved Phase 3 QAPP. This task funds developing the HCRPIC Phase 4 QAPP addendum, submitting within 30 days of agreement start date, and facilitating approval. The addendum must be approved before initiating any work related to collecting or using environmental data under this grant.

Ecology's Quality Coordinator requires the following information for this addendum:

- HCRPIC Phase 4 project timeline
- Sampling parameters and laboratories (Section 3.2.3)
- Phase 4 GIS mapping (Section 4.2)
- List of priority work areas (Phase 4 Work Plan)
- Detail any changes from the approved Phase 3 QAPP

Task 2: Project Management and Reporting

Data collection and reporting requirements.

Task 2.5 Water Quality Exchange (WQX) Data Reporting: All HCRPIC Phase 4 data will be downloaded from Kitsap Health's database by December 31 of 2020 and 2021. All data meeting the approved QAPP and QAPP addendum criteria will be prepared and uploaded to the WQX database by 1/31/2021 and 1/31/2022.

Task 2.7 Broader Communications: Presenting project outcomes, including: submitting project photos and videos, and developing a plan to present HCRPIC highlights, successes, and lessons learned at a regional conference, depending on travel and meeting restrictions.

Task 3: Phase 4 HCRPIC: Hood Canal Regional PIC Program

Phase 4 continues implementation work and builds on the results of Phase 3. The task includes: Program coordination, Pollution Identification and Correction, Ambient Stream monitoring, Onsite Septic System Maintenance Rebates, Strategic Planning and Sustainable Funding, PIC training, and GIS Mapping.

Task 3.1 HCRPIC Program coordination: Guidance group meetings provide the structure for consistent procedures, oversight, and strategic planning for the HCRPIC Program. The quarterly meetings advance collaborative work as partners develop strategies and share best practices.

Task 3.2 Pollution Identification and Correction and Ambient Stream Monitoring

HCRPIC Phase 4 continues PIC implementation and ambient freshwater monitoring. The Guidance Group developed the HCRPIC Phase 4 Priority Areas (Appendix A) at their May 1, 2020 meeting. It includes priority areas for Jefferson, Kitsap, and Mason Counties and updated ambient freshwater monitoring stations.

Many of the priority areas are in Mason County and Mason Health will investigate priority shorelines and drainages and conduct parcel surveys to identify fecal pollution sources. They will provide free technical assistance, facilitate source corrections, and conduct post-corrective monitoring. They will primarily use Thurston Water Lab for fecal coliform (FC) and E.coli (EC) analysis but may use Spectra Laboratory – Kitsap if needed. Spectra Laboratory – Kitsap’s Poulsbo and Port Orchard locations are branches of Spectra Laboratory that coordinate and utilize the same methods. These three labs are all accredited for the FC (SM 9222D) and EC (SM 9223) methods used in this project.

Ambient Stream Monitoring is a partnership with the Hood Canal Salmon Enhancement Group (HCSEG), piloted in HCRPIC Phase 3, that exceeded project goals. HCSEG utilizes citizen science volunteers to conduct ambient monitoring of priority Hood Canal fresh waters for fecal coliform bacteria to supplement available water quality information. HCRPIC provides classroom and field training and HCSEG coordinates and facilitates the monitoring program. HCSEG’s laboratory is accredited by WA Department of Ecology and conducts work pursuant to the approved HCRPIC Phase 3 QAPP and this HCRPIC Phase 4 QAPP addendum. The HCSEG lab is accredited under the name Pacific Northwest Salmon Center Lab for SM 9222D (FC). The Guidance Group updated the freshwater monitoring station list in the HCRPIC Phase 4 Priority Areas list (Appendix A). Hood Canal Salmon Enhancement Group will continue to coordinate volunteer training and implement freshwater monitoring and data management.

Task 3.3 Onsite Septic System Maintenance Rebates

HCRPIC will continue the Septic tank Service Rebate program piloted in Phase 3 to offer rebate vouchers to priority properties to reimburse up to \$250 per septic system for tank inspection, pumping, replacing baffles and making tanks watertight. Phase 4 reporting forms were updated to collect information to help evaluate and demonstrate program effectiveness. The Guidance Group will work in partnership with WSDOH to develop Phase 4 rebate criteria and a consistent format.

Task 3.5 PIC Training and Workshops

HCRPIC coordinators will facilitate a regional training for HCRPIC Phase 4 field partners. The Phase 4 training materials will include updated PIC and Ambient Monitoring Field Guides. The training will review field work (water sample collection, hotspot investigation techniques) and data reporting requirements and protocols and will take place in classroom and field settings. The HCRPIC Guidance Group is exploring modified field work protocols in response to COVID-19 physical distancing requirements and best practices to ensure staff safety.

Task 3.6 Mapping

HCCC will hire a consultant to update HCRPIC implementation maps to illustrate Phase 4 field work results (shoreline surveys, pollution hotspots and status, parcel surveys and status, and failures identified and corrected). Maps of cumulative work will be produced for the highest priority areas like Hoodspout and Annas Bay.

5.0 Organization and Schedule

5.1 Key individuals and their responsibilities

Table 3: Organization of Project Staff and Responsibilities

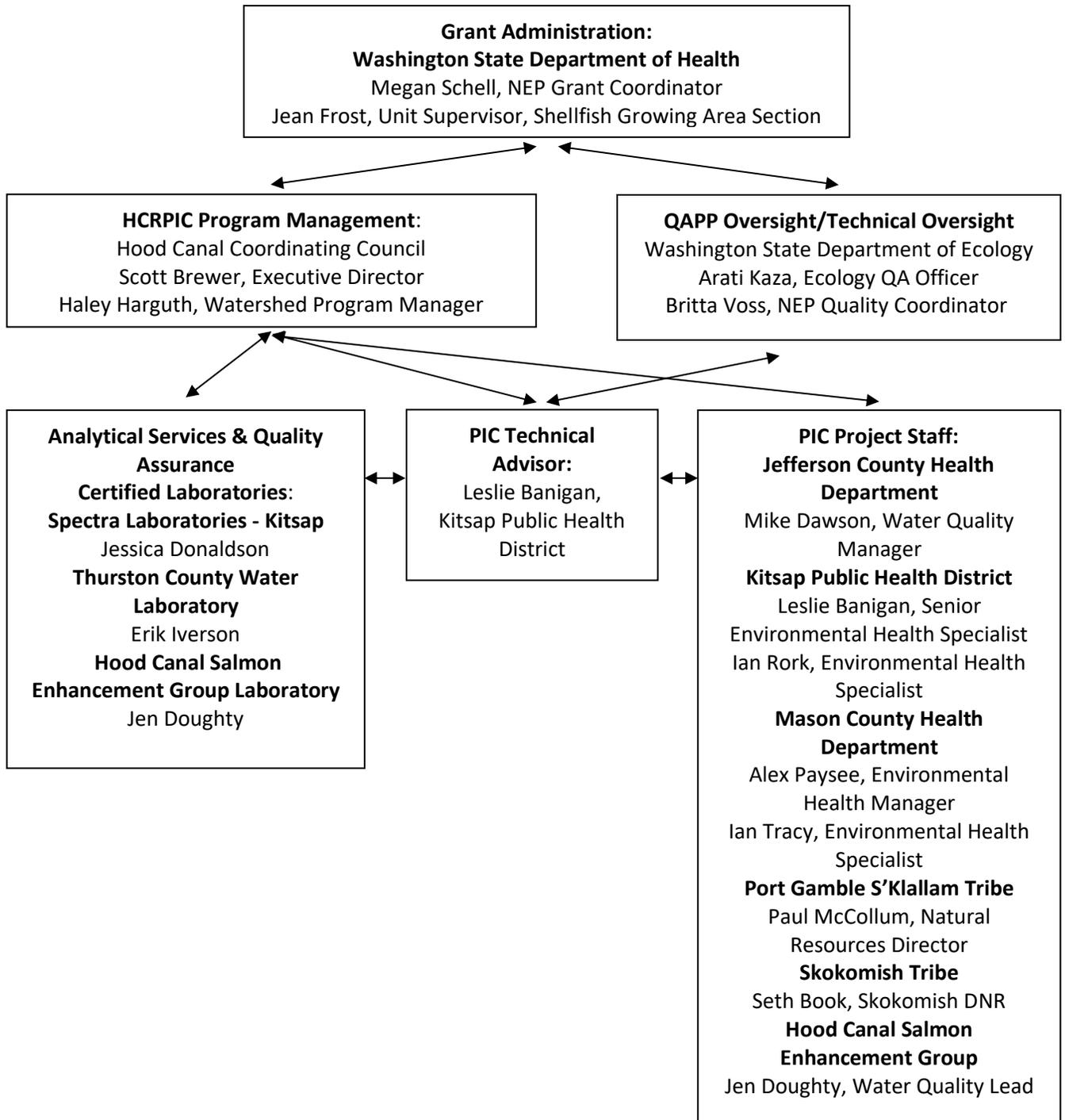
Staff	Title	Responsibilities
Megan Schell Washington State Department of Health Phone: 360-236-3307	National Estuary Program Grant Coordinator	Manages NEP grant. Ensures compliance with contract and QAPP. Reviews reports and billing.
Britta Voss Washington State Department of Ecology Phone: 360-280-4305	National Estuary Program Quality Coordinator	Reviews draft QAPP and recommends final QAPP for approval.
Arati Kaza Washington State Department of Ecology Phone: 360-407-6964	Ecology Quality Assurance Officer	Reviews and approves final QAPP.
Scott Brewer Hood Canal Coordinating Council Phone: 360-531-0575	Executive Director	PIC Program oversight. Reviews reports and project products. Ensures grant compliance.
Haley Harguth Hood Canal Coordinating Council Phone: 360-328-4625	Watershed Program Manager	HCRPIC Project Lead and Guidance Group coordinator. Facilitates work plan and project development, oversees implementation, manages sub-recipient and sub-contractor

Staff	Title	Responsibilities
		agreements, prepares and submits quarterly/final reports, ensures grant compliance.
Jean Frost Washington State Department of Health Phone: 360-236-3349 Cell: 360-489-2384	Unit Supervisor, Shellfish Growing Area Section	Guidance Group member. WSDOH liaison; provides technical assistance, marine water data, Hood Canal shellfish classification
Leslie Banigan Kitsap Public Health District Phone: 360-728-2243 Cell: 360-633-9019	HCRPIC Technical Advisor; Senior Environmental Health Specialist	Guidance Group technical advisor and Sustainable Funding Task Force member. Draft QAPP addendum and facilitate approval. Provide technical assistance, field training, data quality review (water quality, parcel survey, and voucher), and reporting.
Grant Holdcroft Kitsap Public Health District Phone: 360-728-2228 Cell: 360-633-9023	Manager, Water Pollution Identification and Correction	Oversees Kitsap Health's PIC work
Ian Rork Kitsap Public Health District Phone: 360-728-2244 Cell: 360-633-9021	Environmental Health Specialist	Downloads HCRPIC Phase 4 water quality data from Kitsap's database at the end of each calendar year, prepares and uploads to USEPA's WQX water quality database.
Alex Paysse Mason County Health Department Phase: 360-427-9670 ext.279	Environmental Health Manager	Guidance Group member and Sustainable Funding Task Force member. Oversees Mason Health's PIC work.
Ian Tracy Mason County Health Department Phone: 360-427-9670 ext.544	Water Quality	Guidance group member. Implements Phase 4 Workplan: water sampling; hotspot confirmation and investigation; document sources, corrections, and post-corrective monitoring; data quality review/reporting.
Michael Dawson Jefferson County Health Department Phone: 360-385-9444 ext.301 Cell: 360-531-2862	Water Quality Manager	Guidance group member and Sustainable Funding Task Force member. Coordinates and oversees Jefferson County's PIC work and Phase 4 Work Plan implementation, data quality review, and reporting.
Paul McCollum Port Gamble S'Klallam Tribe Phone: 360-297-4792 ext. 237	Natural Resources Director	Guidance group member. Oversees Port Gamble S'Klallam Tribe's water quality work, advises guidance group regarding potential new PIC tools.

Staff	Title	Responsibilities
Seth Book Skokomish Tribe Phone: 360-877-5213 ext. 2070 Cell: 360-463-1889	Skokomish DNR	Guidance group member. Advises guidance group of potential new PIC tools. Manages Skokomish Tribe's water quality work. Coordinates with WSDOH and Mason County on Hoodspout harvest request and Annas Bay response.
Jessica Donaldson Spectra Laboratories - Kitsap Phone: 360-443-7845 Emergency Cell: 360-633-6466	Laboratory Manager	Manages analytical contract. Oversees quality assurance/quality control (QA/QC) compliance, and reporting.
Angela Kaelin Spectra Laboratories - Kitsap Phone: 360-779-5141 Emergency Cell: 360-633-6466	Laboratory Quality Assurance Manager	Oversees quality assurance/quality control (QA/QC) compliance.
Erik Iverson Thurston County Water Laboratory (360) 867-2631 (360) 867-2673 Main	Laboratory Manager	Manages analytical contract. Oversees QA/QC compliance and reporting.
Jennifer Doughty Hood Canal Salmon Enhancement Group 360-275-3575 ext. 15 (360) 688-0516	Water Quality Lead, Laboratory Manager	Guidance group member. Leads ambient stream monitoring: water sampling; data QA/QC, data entry and analysis; and reporting. Manages laboratory analysis. Oversees QA/QC compliance and reporting.

5.3 Organization chart

Figure 7: Project Organization Chart



5.4 Proposed project schedule

Table 4: Proposed Project Schedule and Timeline

Project Development	Start date	End date	Objective	Deadline*
Task 1.2 Quality Assurance Project Plan Addendum	4/27/2020	7/30/2020	Provide strong quality assurance/control framework meeting Ecology and WSDOH requirements. QAPP Addendum submitted for review 6/16/2020. Ecology comments received 7/9/2020. WSDOH comments received 7/15/2020	30 days
Project Management and Reporting	Start date	End date	Objective	Deadline
Task 2.5 Water Quality Data upload to WQX database	12/31/2020	12/31/2022	Download all water quality data in Kitsap Health's database by December 31, 2020 and 2021. Upload all data meeting approved QAPP and QAPP addendum to WQX by January 30 of the following year.	1/31/2021 1/31/2022 And upon Contract Completion.
Task 2.7 Broader Communication	5/1/2020	12/31/2022	Submit project photos and videos and develop a plan to present HCRPIC highlights, successes, and lessons learned at a regional conference, depending on travel and meeting restrictions.	12/31/2022
HCRPIC Program Phase 4 Implementation	Start date	End date	Objective	Deadline
Task 3.1 Project coordination	4/27/2020	12/31/2022	Report progress per contract. Guidance group provides oversight and consistent procedures for the HCRPIC Program. The quarterly meetings advance collaborative work as partners develop strategies and share best practices.	12/31/2022

HCRPIC Phase 4 Implementation (continued)	Start date	End date	Objective	Deadline
Task 3.2 Pollution Identification and Correction and Ambient Stream Monitoring	7/30/2020, and after QAPP approval	12/31/2022	Conduct PIC work and Ambient Stream Monitoring work pursuant to Phase 4 Workplan, and approved QAPP Addendum	12/31/2022
Task 3.3: Onsite Septic System Maintenance Rebates	6/30/2020	12/31/2022	Guidance Group will develop Phase 4 Rebate guidance to provide Septic Tank Service Rebates to priority properties	12/31/2022
Task 3.4 Strategic Planning Sustainable Funding	5/1/2020	12/31/2022	Conduct strategic planning to recommend approaches to ensure program success and ongoing funding.	12/31/2022
Task 3.5 PIC Training	6/1/2020	Initial field Training by 7/30/2020	HCRPIC technical advisor provides technical assistance as needed and coordinates partner training for reporting and field work pursuant to sub-contracts, the approved QAPP and QAPP addendum, and the HCRPIC Guidance Document.	10/1/2022
Task 3.6 Mapping	12/1/2020	12/1/2022	Map Phase 4 shoreline surveys, hotspots, parcel surveys, failures identified and corrected. Map cumulative work in highest priority areas like Hoodsport and Annas Bay	12/1/2022

*deadlines may be extended by mutual agreement

5.5 Budget and funding

The HCRPIC Program is funded through the Puget Sound Partnership’s Action Agenda by the United States Environmental Protection Agency ‘s National Estuary Program and administered by WSDOH.

Table 5: Budget

HCRPIC Program Phase III Grant - Overall Budget	
Salary	\$21,823
Benefits	\$11,437
Travel	\$500
Equipment (federal definition)	0
Supplies	0
Contracts	
Mapping Consultant	\$8,000
Outreach Consultant	\$15,000
Sub-Awards	
Transcription Services	\$250
KPHD	\$35,042
Jefferson County	\$18,000
Mason County	\$174,500
HCSEG	\$20,000
Jefferson CD	\$1,500
Mason CD	\$1,500
Total Direct	\$307,552
Indirect Charges (federally approved rate)	\$14,801
Total	\$322,353

7.0 Study Design

Please refer to **Table 1 in Appendix A: HCRPIC Phase 4 Priority Areas** for the list of Phase 4 shoreline survey locations.

7.5 Possible challenges and contingencies

This project may require modification based on circumstances beyond the control of HCCC and HCRPIC partners. PIC projects rely on field work (parcel surveys and investigations) to identify OSS failures. The field work portion of this project is subject to the uncertainty of current and

potential COVID-19 constraints. As of the date of the QAPP addendum, Washington's Governor has executed an emergency stay-home stay-safe order, closed in-person schools for the remainder of the school year, and restricted work in Washington State. Washington's Governor may extend such work restrictions impacting our ability to perform required work.

During this project, coordinators will work closely with field partners and follow Washington state guidance to determine how and when PIC field work can be safely conducted.

Coordinators have discussed Phase 4 sampling needs with Thurston, Spectra, and HCSEG laboratory staff. The laboratory managers indicated that they are ready to proceed and have instituted back door procedures with field staff should COVID-19 disrupt normal procedures. The coordinators will continue to facilitate sampling needs as needed throughout Phase 4.

16.0 Appendices

Appendix A. HCRPIC Phase 4 Priority Areas

Table 1: HCRPIC Phase 4 Priority Areas for Shoreline Surveys and PIC Investigations

Priority Area	Site Locations	Current Conditions
Jefferson County		
Shoreline & stream monitoring Sites:		
Duckabush River	Hotspot DU099	Candidate for closing
Pierce Creek	Hotspot PIE0.3	Failed part 2 of fecal coliform (FC) standard
Oak Bay	Little Goose Creek closed parcels	Low during past wet season; major repair completed; candidate for closing
Paradise Bay	Hotspot PB042	
Mats Mats Bay	Hotspot MM121	
Kitsap County		
Lofall Creek		Shellfish closure at mouth
Gamble Creek		Problem area identified by DOH in recent sanitary survey
Port Gamble Bay		Recommendation from DOH Sanitary Survey Report to collect at a minimum one wet season and one dry season follow-up sample from each of the KPHD and PGST sites with elevated bacteria concentrations.
Deficient pump reports & complaints		
HC 1	UH163	Confirmed shoreline hotspot
	UH171	
	UH208	
Kinman Creek		If time (DOH could do shoreline sampling if needed)
Vinland Creek		
Mason County		
Mikes beach resort	Closed parcel	
Summertide Resort & Marina	Closed parcel	

Hoodspout	Closed Growing Area	No discharge currently, most failures corrected, one outstanding (At Port: reduced flow, pumping frequently; working on drainfield relocation property acquisition (from County))
H-007	Hotspot	
I042	Hotspot	
I055	Hotspot	
8821 E SR 106		Repair ongoing (maybe fixed)
Northshore	Closed parcels	Need investigation
T089	Hotspot	
T113	Hotspot	
T114	Hotspot	
U075	Hotspot	
Annas Bay SPD	Shellfish Protection District	Some shoreline sampling planned for Potlatch, Union, then up Skok valley (working w/tribe to find parcels for surveys); want to assess all parcels in valley
Port Gamble S'Klallam Tribe		
Skokomish Tribe		
Annas Bay & Skokomish River Valley		High hits in marine waters. Site 197 close to being closed. Shoreline surveys ongoing, focus on east shoreline of Annas Bay (known sites from previous surveys); Will work with Mason Co to coordinate.
HCSEG Freshwater Monitoring		
Continue to use Phase 3 sites focused on 303(d) list to provide consistent data for delisting. Re-assess with new Dept. of Ecology water quality assessment report (Fall 2020). May add additional sites as new priorities arise.		
Sites will be monitored throughout the project duration at approximately three-week intervals.		
Finch Creek	Move site downstream (below housing development)	
Liliwaup Creek	Access difficult due to tides; Reconsider site location:	Correction completed. Marine station not on DOH

	Access above public shellfish beach?	threatened list this year. Try entero. sampling instead?
Big Bend Creek		
Alderbrook Creek		
Mulburg Creek		
Trails End Creek		
Deveraux Creek		Wet season only; Failed FC standard – part 2 in Ph. 3
Union River		Failed FC standard - part 2 in Ph. 3
Big Mission Creek		
Little Mission Creek		
Tahuya River		
Dewatto River		