



IAA No. C180009

INTERAGENCY AGREEMENT (IAA)

BETWEEN

THE STATE OF WASHINGTON, DEPARTMENT OF ECOLOGY

AND

THE STATE OF WASHINGTON, DEPARTMENT OF FISH AND WILDLIFE

THIS INTERAGENCY AGREEMENT (“Agreement” or “IAA”) is made and entered into by and between the state of Washington, Department of Ecology, hereinafter referred to as "ECOLOGY," and the state of Washington Department of Fish and Wildlife hereinafter referred to as the "WDFW," pursuant to the authority granted by Chapter 39.34 RCW.

THE PURPOSE OF THIS AGREEMENT is for WDFW to implement a second round status assessment of mussel chemical contamination in 40 marine nearshore sites that are adjacent to Puget Sound’s Urban Growth Areas (UGAs) in the winter of 2017/18. This study provides National Pollutant Discharge Elimination System (NPDES) permittees with regional information as part of the Stormwater Action Monitoring (SAM) program to help improve their understanding of impacts to biota in the urban nearshore environment. Contaminants to be assessed include polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyl (PCBs), polybrominated diphenyl ethers (PBDEs), a range of chlorinated pesticides and metals. In addition, WDFW will compare the magnitude of contamination in mussels from the same 40 sites findings from 2015/16, and provide recommendations for future status and trends monitoring with mussels to answer questions about stormwater management.

WHEREAS, ECOLOGY has legal authority (RCW 90.48 and WAC 173-220) and Washington Department of Fish and Wildlife has legal authority (RCW 90.48) that allows each party to undertake the actions in this agreement.

WHEREAS, protocols developed by WDFW as part of earlier mussel monitoring survey work in 2015/2016 will be revised and followed (C1500124).

THEREFORE, IT IS MUTUALLY AGREED THAT:

1) SCOPE OF WORK

WDFW shall furnish the necessary personnel, equipment, material and/or service(s) and otherwise do all things necessary for or incidental to the performance of the work set forth in Appendix A, Statement of Work and Budget, attached hereto and incorporated herein.

2) PERIOD OF PERFORMANCE

The period of performance of this IAA shall commence on **July 1, 2017** and be completed by **June 30, 2019**, unless terminated sooner as provided herein. Amendments extending the period of performance, if any, shall be at the sole discretion of ECOLOGY.

3) COMPENSATION

Compensation for the work provided in accordance with this IAA has been established under the terms of RCW 39.34.130 and RCW 39.26.180(3). This is a performance-based agreement, in which payment is based on the successful completion of expected deliverables.

The source of funds for this IAA is **General Fund/ Private-Local account for Stormwater Action Monitoring**.

The parties have determined that the cost of accomplishing the work identified herein will not exceed \$285,693, including any indirect charges. Payment for satisfactory performance of the work shall not exceed this amount unless the parties mutually agree via an amendment to a higher amount. Compensation for services shall be based on the terms and tasks set forth in Appendix A, Statement of Work and Budget. ECOLOGY will not make payment until it has reviewed and accepted the completed work.

4) BILLING AND PAYMENT PROCEDURE

Payment requests shall be submitted on state form, Invoice Voucher A19-1A. Invoices shall describe and document to ECOLOGY's satisfaction a description of the work performed, the progress of the work, and related costs. Each invoice voucher shall reference the Agreement (IAA) number and clearly identify those items that relate to performance under this Agreement. Payment will be made within thirty (30) days of submission of a properly completed invoice (form A19-1A) with supportive documentation. All expenses invoiced shall be supported with copies of invoices paid.

Send invoices to:

State of Washington Department of Ecology Attn: Keunyea Song P.O. Box 47600 Olympia, WA 98504-7600
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Payment requests may be submitted at the completion and acceptance of deliverables listed in Appendix A. Upon expiration of this Agreement, any claim for payment not already made shall be submitted to ECOLOGY within 30 days after the expiration date or the end of the fiscal year, whichever is earlier.

Payment will be issued through Washington State's Department of Enterprise Services Statewide Payee Desk. To receive payment you must be registered as a state-wide vendor. To register submit a state-wide vendor registration form and an IRS W-9 form at website, <http://www.des.wa.gov/services/ContractingPurchasing/Business/VendorPay/Pages/default.aspx>. If you have questions about the vendor registration process you can contact DES at the Payee Help Desk at (360) 407-8180 or email payeehelpdesk@watech.wa.gov.

5) ALTERATIONS AND AMENDMENTS

This Agreement may be amended by mutual agreement of the parties. Such amendments shall not be binding unless they are in writing and signed by personnel authorized to bind each of the parties.

6) ASSIGNMENT

The work to be provided under this Agreement, and any claim arising thereunder, is not assignable or delegable by either party in whole or in part, without the express prior written consent of the other party, which consent shall not be unreasonably withheld.

7) ASSURANCES

Parties to this Agreement agree that all activity pursuant to this agreement will be in accordance with all the applicable current federal, state, and local laws, rules, and regulations.

8) CONFORMANCE

If any provision of this Agreement violates any statute or rule of law of the state of Washington, it is considered modified to conform to that statute or rule of law.

9) DISPUTES

Parties to this Agreement shall employ every effort to resolve a dispute themselves without resorting to litigation. In the event that a dispute arises under this Agreement that cannot be resolved among the parties, it shall be determined by a Dispute Board in the following manner. Each party to this Agreement shall appoint one member to the Dispute Board. The members so appointed shall jointly appoint an additional member to the Dispute Board. The Dispute Board shall review the facts, agreement terms, and applicable statutes and rules, and then make a determination of the dispute. The determination of the Dispute Board shall be final and binding on the parties hereto, unless restricted by law. The cost of resolution will be borne by each party paying its own cost. As an alternative to this process, if state agencies, either of the parties may request intervention by the Governor, as provided by RCW 43.17.330, in which event the Governor's process will control. The parties may mutually agree to a different dispute resolution process.

10) FUNDING AVAILABILITY

ECOLOGYS ability to make payments is contingent on availability of funding. In the event funding from state, federal, or other sources is withdrawn, reduced, or limited in any way after the effective date and prior to completion or expiration date of this Agreement, ECOLOGY, at its sole discretion, may elect to terminate the Agreement, in whole or part, for convenience or to renegotiate the Agreement subject to new funding limitations and conditions. ECOLOGY may also elect to suspend performance of the Agreement until ECOLOGY determines the funding insufficiency is resolved. ECOLOGY may exercise any of these options with no notification restrictions, although ECOLOGY will make a reasonable attempt to provide notice.

In the event of termination or suspension, ECOLOGY will reimburse eligible costs incurred by the CONTRACTOR through the effective date of termination or suspension. Reimbursed costs must be agreed to by ECOLOGY and the CONTRACTOR. In no event shall ECOLOGY's reimbursement exceed ECOLOGY's total responsibility under the agreement and any amendments.

11) GOVERNING LAW AND VENUE

This Agreement is entered into pursuant to and under the authority granted by the laws of the state of Washington and any applicable federal laws. The provisions of this Agreement shall be construed to conform to those laws. This Agreement shall be construed and interpreted in accordance with the laws of the state of Washington, and the venue of any action brought hereunder shall be in the Superior Court for Thurston County.

12) INDEPENDENT CAPACITY

The employees or agents of each party who are engaged in the performance of this Agreement shall continue to be employees or agents of that party and shall not be considered for any purpose to be employees or agents of the other party.

13) ORDER OF PRECEDENCE

In the event of an inconsistency in the terms of this Agreement, or between its terms and any applicable statute or rule, the inconsistency shall be resolved by giving precedence in the following order:

- a. Applicable federal and state of Washington statutes, regulations, and rules.
- b. Mutually agreed upon written amendments to this Agreement.
- c. This Agreement, number C1800009.
- d. Appendix A, Statement of Work and Budget.
 - Any other provisions or term of this Agreement, including materials incorporated by reference or otherwise incorporated.

14) RECORDS MAINTENANCE

The parties to this Agreement shall each maintain books, records, documents and other evidence that sufficiently and properly reflect all direct and indirect costs expended by either party in the performance of the service(s) described herein. These records shall be subject to inspection, review or audit by personnel of both parties, other personnel duly authorized by either party, the Office of the State Auditor, and federal officials so authorized by law. All books, records, documents, and other material relevant to this Agreement will be retained for six years after expiration of this Agreement and the Office of the State Auditor, federal auditors, and any persons duly authorized by the parties shall have full access and the right to examine any of these materials during this period.

Records and other documents, in any medium, furnished by one party to this Agreement to the other party, will remain the property of the furnishing party, unless otherwise agreed. The receiving party will not disclose or make available this material to any third parties without first giving notice to the furnishing party and giving it a reasonable opportunity to respond. Each party will utilize reasonable security procedures and protections to assure that records and documents provided by the other party are not erroneously disclosed to third parties subject to state public disclosure laws.

15) RESPONSIBILITIES OF THE PARTIES

Each party of this Agreement hereby assumes responsibility for claims and/or damages to persons and/or property resulting from any act or omissions on the part of itself, its employees, its officers, and its agents. Neither party will be considered the agent of the other party to this Agreement.

16) RIGHTS IN DATA

Unless otherwise provided, data which originates from this Agreement shall be "work made for hire" as defined by the United States Copyright Act, Title 17 U.S.C. section 101 and shall be owned by state of Washington, ECOLOGY. Data shall include, but not be limited to, reports, documents, pamphlets, advertisements, books magazines, surveys, studies, computer programs, films, tapes, and/or sound reproductions. Ownership includes the right to copyright, patent, register, and the ability to transfer these rights.

17) SEVERABILITY

If any provision of this Agreement or any provision of any document incorporated by reference shall be held invalid, such invalidity shall not affect the other provisions of this Agreement which can be given effect without the invalid provision, if such remainder conforms to the requirements of applicable law and the fundamental purpose of this Agreement, and to this end the provisions of this Agreement are declared to be severable.

18) SUBCONTRACTORS

WDFW agrees to take complete responsibility for all actions of any Subcontractor used under this Agreement for the performance. When federal funding is involved there will be additional subcontractor requirements and reporting.

Prior to performance, all subcontractor who will be performing services under this Agreement must be identified, including their name, the nature of services to be performed, address, telephone, WA State Department of Revenue Registration Tax number (UBI), federal tax identification number (TIN), and anticipated dollar value of each subcontract. Provide such information to ECOLOGY's agreement manager.

19) TERMINATION FOR CAUSE

If for any cause, either party does not fulfill in a timely and proper manner its obligations under this Agreement, or if either party violates any of these terms and conditions, the aggrieved party will give the other party written notice of such failure or violation. The responsible party will be given the opportunity to correct the violation or failure within fifteen (15) business days. If failure or violation is not corrected, this Agreement may be terminated immediately by written notice of the aggrieved party to the other.

20) TERMINATION FOR CONVENIENCE

Either party may terminate this Agreement without cause upon thirty (30) calendar day prior written notification to the other party. If this Agreement is so terminated, the parties shall be liable only for performance rendered or costs incurred in accordance with the terms of this Agreement prior to the effective date of termination.

21) WAIVER

A failure by either party to exercise its rights under this Agreement shall not preclude that party from subsequent exercise of such rights and shall not constitute a waiver of any other rights under this Agreement unless stated to be such in a written amendment to this Agreement signed by an authorized representative of the parties.

22) AGREEMENT MANAGEMENT

The representative for each of the parties shall be responsible for and shall be the contact person for all communications, notifications, and billings questions regarding the performance of this Agreement. The parties agree that if there is a change in representatives that they will promptly notify the other party in writing of such change, such changes do not need an amendment.

The ECOLOGY Representative is:	The WDFW Representative is:
Name: Keunyea Song Address: 300 Desmond Dr. SE (USPS) P.O.Box 47600 (FedEx) Olympia, WA 98504-7600 Phone: 360-407-6158 Email: Keunyea.Song@ecy.wa.gov	Name: Jennifer Lanksbury Address: PO Box 43200 Olympia, WA 98504-3200 Phone: 360-902-2820 Email: Jennifer.Lanksbury@dfw.wa.gov Fax: 360-902-2183

23) ALL WRITINGS CONTAINED HEREIN

This Agreement contains all the terms and conditions agreed upon by the parties. No other understandings, oral or otherwise, regarding the subject matter of this Agreement shall be deemed to exist or to bind any of the parties hereto.

The signatories to this Agreement represent that they have the authority to bind their respective organizations to this Agreement.

IN WITNESS WHEREOF, the parties below, having read this Agreement in its entirety, including all attachments, do agree in each and every particular as indicated by their below signatures.

**State of Washington
Department of Ecology**

**State of Washington
Department of Fish and Wildlife**

By: _____

Signature _____ Date _____

Print Name: Polly Zehm

Title: Deputy Director

By: _____

Signature _____ Date _____

Print Name: Jeffrey R. Hugdahl

Title: Contracts and Purchasing Manager

Approved as to form only:
Office of Attorney General

APPENDIX A STATEMENT OF WORK AND BUDGET

Project Background: Puget Sound Marine Mussel Contaminant Monitoring in the Urban Nearshore Environment.

Blue mussels (*Mytilus* spp.) and other sessile, filter-feeding bivalves have been used to monitor contaminant conditions in nearshore biota worldwide. National Oceanic and Atmospheric Administration's national [Mussel Watch](#) program collected mussels in the Puget Sound from 1986 to 2012, to broadly characterize ambient contaminant conditions in Puget Sound's nearshore biota. More recently, based on [recommendations from the Stormwater Work Group](#), Washington State's [Stormwater Action Monitoring \(SAM\)](#) includes a component to monitor the status and trends of contaminants in mussels in the marine nearshore of Puget Sound. SAM is the new name for the program previously known as the regional stormwater monitoring program (RSMP).

SAM status and trends monitoring follows a probabilistic sample design such that data gathered can be summarized across the Puget Sound ecoregion. In the winter of 2015/16, Washington Department of Fish and Wildlife's (WDFW) monitored forty (40) marine nearshore sites that are adjacent to Puget Sound's Urban Growth Areas (UGAs), as part of the SAM first round of mussel contaminant status assessment. These same sites, with a few exceptions (see Task 3 below), will be monitored in the winter of 2017/18 by WDFW's Puget Sound Ecosystem Monitoring Program (PSEMP) team. Contaminants to be assessed include polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyl (PCBs), polybrominated diphenyl ethers (PBDEs), a range of chlorinated pesticides and metals.

The objectives of this project are to:

- Evaluate the range of chemical contamination in UGA shoreline biota, using blue mussels (*Mytilus* spp.) as the primary indicator organism, from 40 sites.
- Measure the magnitude of contamination in mussels from the 40 sites and compare them to previous findings in 2015/16.
- Provide recommendations for future status and trends monitoring with mussels to answer questions about stormwater management.

This statement of work (SOW) describes the second round of mussel monitoring that will be conducted by WDFW from the initiation of this contract through June 30, 2019 and defines the activities and products that will be delivered to the SAM Coordinator at the Washington State Department of Ecology. This SOW describes the work to be completed for each task, the deliverables to be submitted upon completion of each task, and the total estimated cost and schedule per task. Deliverables will need to be made ADA accessible following guidance from the SAM coordinator.

Task 1: Amendment to Quality Assurance Project Plan (QAPP)

WDFW will develop an amendment to the [QAPP for Status and Trends Monitoring of Marine Nearshore Mussels for the Regional Stormwater Monitoring Program and Pierce County](#). The amendment will include the schedule for the 2017/18 SAM Mussel Monitoring effort and will include any changes in procedures for site confirmation, field and laboratory activities, and analytical procedures gleaned from lessons learned from the 2015/16 RSMP/SAM Mussel Monitoring effort.

Deliverable 1.1. Draft QAPP amendment.

- Target Completion Date: July 31, 2017
- Percent of Estimated Cost: 80%

Deliverable 1.2. Final QAPP amendment for SAM mussel monitoring.

- Target Completion Date: August 31, 2017
- Percent of Estimate Cost: 20%

Task 1 Estimated Cost: \$2,899

Task 2 - Recruit and Organize Volunteers

WDFW will contact regional groups that have worked with WDFW in the past in an attempt to recruit them to assist with the 2017/18 SAM Mussel Monitoring effort. WDFW will offer reimbursements to volunteers for costs associated with participation in the SAM survey (e.g. ferry tickets, parking fees, gas mileage, etc.). Volunteers will visit potential nearshore monitoring sites to verify their safety and feasibility for use in the SAM (see Task 3) and will assist with mussel preparation in advance of deployment (see Task 6). WDFW anticipates there will be enough volunteers to deploy and retrieve mussel cages at approximately 90% of the confirmed SAM mussel sites (see Tasks 7 and 8). WDFW will maintain contact with the volunteer groups throughout the study period to answer questions, verify their commitment to participate, provide feedback, register them in the WDFW volunteer tracking system, and manage efforts at every step of the 2017/18 SAM Mussel Monitoring effort.

Deliverable 2.1. List of volunteer groups that plan to participate in mussel monitoring and the sites for which each group will be responsible.

- Target Completion Date: September 30, 2017
- Percent of Estimated Cost: 90%

Deliverable 2.2. Account of reimbursements made to WDFW volunteers for mussel monitoring.

- Target Completion Date: March 1, 2018
- Percent of Estimated Cost: 10%

Task 2 Estimated Cost: \$21,717

Task 3 – Site Confirmations and Permissions

Marine sampling sites for the SAM come from the [Puget Sound Shoreline Master Sample Site list](#). WDFW staff and volunteers will reconfirm the suitability nearshore sites successfully monitored during the 2015/16 RSMP/SAM Mussel Monitoring effort. WDFW staff and volunteers will also evaluate and confirm the suitability of potential replacement sites for those sites that were not successfully monitored during the 2015/16 RSMP/SAM Mussel Monitoring effort; replacement sites will be evaluated in numerical order (from lowest to highest in the ORDER column of the list) until 45 sites are accepted for the 2017/18 SAM Mussel Monitoring effort. Evaluation of a candidate site will be based largely on a field visit to the site during daylight low tides, in the summer of 2017. Sites will be evaluated on their accessibility and safety, whether the property owner and/or tenants give permission to access to the site, and the suitability of the intertidal substrate for anchoring/securing a mussel cage. If a site is determined to be unacceptable WDFW will then evaluate the next qualifying site and continue evaluating sites, moving numerically through the list, until 45 sites are confirmed for the 2017/18 SAM Mussel Monitoring effort. Locations of the final 45 mussel monitoring sites will be submitted to Ecology’s EIM database.

Deliverable 3.1. Map of confirmed 2017/18 SAM Mussel Monitoring effort sites.

Deliverable 3.2. List of names and coordinates for confirmed and rejected monitoring sites.

Deliverable 3.3. Spreadsheet of “Location Data” submitted to EIM.

- Target Completion Date: September 30, 2017

Task 3 Estimated Cost: \$17,306

Task 4 – Obtain Permits and Memorandum of Understanding (MOU)

WDFW will obtain a Hydraulic Project Approval (HPA) and a Shellfish Transfer Permit for the SAM mussel monitoring. WDFW will attempt to obtain a MOU with the Washington Department of Natural Resources to access State-Owned Aquatic Lands for all SAM mussel monitoring activities.

Deliverable 4. PDF of all permits and MOUs necessary to gain access to and place a mussel cage on confirmed RSMP mussel monitoring sites.

- Target Completion Date: August 31, 2017

Task 4 Estimated Cost: \$7,151

Task 5 – Equipment and Supplies Procurement and Assembly

WDFW will procure and own all the equipment for mussel deployment (e.g. mussel cages, anchors, fastening devices, etc.) and supplies for the laboratory processing (e.g. solvents, scalpels, weighing pans, gloves, etc.) necessary to complete mussel monitoring at 40 SAM sites. WDFW will also obtain the mussels to be transplanted for the monitoring. WDFW will

assemble and distribute all the equipment and supplies necessary for the deployment and retrieval phases of the monitoring.

Deliverable 5. List of equipment/supplies ordered and procured by WDFW in support of the 2017/18 SAM Mussel Monitoring effort.

- Target Completion Date: September 30, 2017

Task 5 Estimated Cost: \$24,326

Task 6 – Preparation of Mussels

WDFW will obtain mussels (*Mytilus* spp.) from a local shellfish aquaculture facility in the Puget Sound. WDFW and volunteers will measure and sort enough mussels to accommodate 64 mussels per cage at the 40 SAM monitoring sites, and for six baseline (i.e. starting condition) samples. Mussels used for the 2017/18 SAM Mussel Monitoring effort will be measured and selected to fall within a uniform size range, and they will be placed into aquaculture bags in groups in preparation for deployment. Bagged mussels will rest for a brief period, likely at the aquaculture source, before they are deployed to cages at the monitoring sites.

Deliverable 6. Email confirmation that all mussels necessary for deployment are prepared and resting.

- Target Completion Date: September 30, 2017

Task 6 Estimated Cost: \$13,970

Task 7 – Deployment of Cages

WDFW staff and volunteers will deploy bagged mussels (see Task 6) in anti-predator, wire mesh cages to the 40 confirmed (see Task 3) SAM mussel monitoring sites during evening low tides following the approved QAPP and QAPP amendment. Mussel cages will be anchored into the substrate and/or secured to fixed objects in the intertidal environment at each site at approximately zero to -1.5 feet mean lower low water (MLLW). As part of this effort WDFW staff will spend several evenings at the aquaculture facility handing out bagged mussels, cages, and deployment kits to all volunteers participating in the SAM mussel monitoring. In addition, environmental data specific to each SAM mussel monitoring site will be recorded at the time of deployment on a Deployment Datasheet and photos of each deployed cage and its surroundings will be collected.

Deliverable 7. PDF of completed Deployment Datasheets from all SAM mussel monitoring sites.

- Target Completion Date: December 31, 2017

Task 7 Estimated Cost: \$10,139

Task 8 – Retrieval of Cages

During a series of evening low tides in 2018 approximately 90 days after deployment, WDFW staff and volunteers will revisit the 40 SAM mussel monitoring sites and retrieve all remaining mussel cages. Mussel cages and all anchoring devices will be removed from the substrate so that nothing is left behind. Mussel bags will be removed from each cage and transported in coolers on ice overnight to the WDFW Marine Resources Lab in Olympia, WA. As part of this effort WDFW staff will send out retrieval kits in advance to all the participating volunteers and will make several trips to collection points across the north and central Puget Sound to facilitate delivery from volunteers. In addition, environmental data specific to each SAM mussel monitoring site will be recorded at the time of retrieval on a Retrieval Datasheet and photos of each retrieved cage and its surroundings will be collected.

Deliverable 8. PDF of completed Retrieval Datasheets from all SAM mussel monitoring sites.

- Target Completion Date: March 31, 2018

Task 8 Estimated Cost: \$10,139

Task 9 – Processing of Mussels

WDFW staff and volunteers will process retrieved mussels at the Marine Resources Lab in Olympia, WA. Laboratory mussel processing will include, 1) an assessment of mortality in each mussel cage, 2) determination of condition index for a subset of mussels, and 3) compositing of a subset of the mussels (i.e. soft tissue only) for chemical analysis.

Deliverable 9. PDFs of datasheets with biological metrics for all mussels processed for SAM mussel monitoring.

- Target Completion Date: April 30, 2018

Task 9 Estimated Cost: \$19,360

Task 10 – Chemical Analysis and Sample Tracking

Upon completion of mussel processing, WDFW staff will deliver mussel composite samples for chemical analyses to the contracted analytical laboratories and track progress on analysis. Chemical contaminants to be analyzed will include polychlorinated biphenyls (PCBs), polybrominated diphenylethers (PBDEs), polycyclic aromatic hydrocarbons (PAHs), a range of organochlorine pesticides including dichlorodiphenyltrichloroethane compounds (DDTs), and a suite of metals including mercury, lead, arsenic, copper, cadmium. Tissue lipid content and percent solids will also be measured or estimated.

Deliverable 10. Copies of invoices for chemical analysis of SAM mussel samples.

- Target Completion Date: August 31, 2018

Task 10 Estimated Cost: \$80,880

Task 11 – Data Quality Assurance and Quality Control (QA/QC) check

WDFW staff will evaluate quality assurance metrics and track quality control measures to ensure high quality data is received from the analytical laboratories. Error checking and data validation procedures will be performed on all chemistry data received from the labs.

Deliverable 11. Spreadsheet of QA/QC checked chemistry data.

- Target Completion Date: October 31, 2018

Task 11 Estimated Cost: \$10,050

Task 12 – Data Digitization and Entry into Ecology’s Environmental Information Management (EIM) Database

WDFW staff will ensure all data collected during the deployment and retrieval phases and all biological data from mussel processing are digitized and error-checked. In addition, WDFW staff will submit all relevant sample, biological, and chemistry data from the 2017/18 SAM Mussel Monitoring effort to Ecology’s EIM database.

Deliverable 12. Word document describing the SAM mussel monitoring study, and spreadsheets of sample, measurement, and results data submitted to EIM.

- Target Completion Date: December 31, 2018

Task 12 Estimated Cost: \$5,903

Task 13 – Data Analysis and Report Outline

WDFW staff will analyze chemical and biological data from the 2017/18 SAM Mussel Monitoring effort to determine the extent and magnitude of chemical contamination of mussels in UGAs of the Puget Sound. Summary statistics and maps will be produced for individual or groups of chemicals, depending on the analyte. WDFW staff will produce an outline of the planned report based on the analysis described above. In addition, WDFW staff will provide a progress report, in the form of an oral presentation, to the Stormwater Work Group (SWG) in the summer of 2017.

Deliverable 13.1. Progress report (oral presentation) to SWG.

- Target Completion Date: July 30, 2018
- Percent of Estimated Cost: 10%

Deliverable 13.2. Outline of WDFW agency report on 2017/18 SAM Mussel Monitoring effort.

- Target Completion Date: January 31, 2019
- Percent of Estimated Cost: 90%

Task 13 Estimated Cost: \$28,795

Task 14 – Report and Review

WDFW staff will provide a summary report on the chemical, biological and geographic data from the 2017/18 SAM Mussel Monitoring effort. This report will include an assessment of the extent and magnitude of chemical contamination of mussels in UGAs of the Puget Sound, tables and graphs with summary statistics, maps of contaminant distributions, and recommendations for refining future rounds of SAM mussel monitoring. In addition, SAM mussel monitoring results will be compared with results from the 2015/16 RSMP/SAM Mussel Monitoring effort, and with WDFW's "[Toxic Contaminants in Puget Sound's Nearshore Biota: A Large-Scale Synoptic Survey Using Transplanted Mussels \(Mytilus trossulus\)](#)" project, where appropriate. The format will be a WDFW agency report.

Deliverable 14.1. Draft WDFW agency report on 2017/18 SAM mussel monitoring survey for review by Ecology and/or SAM staff.

- Target Completion Date: April 30, 2019
- Percent of Estimated Cost: 65%

Deliverable 14.2. Final WDFW agency report and draft SAM fact sheet on 2017/18 SAM mussel monitoring survey.

- Target Completion Date: August 31, 2019
- Percent of Estimated Cost: 20%

Deliverable 14.3 Three Presentations. Communicate results of the combined effort 2015/16 and 2017/2018 to the public, in the form of an oral presentation, at conference or symposia, to Stormwater Work Group or Toxics Work Group, and to local volunteer groups as opportunity arises

- Target Completion Date: August 31, 2019
- Percent of Estimated Cost: 15%

Task 14 Estimated Cost: \$33,058

Total Project Budget

Total project costs are \$285,693. This includes salaries and benefits, travel, supplies, lab analysis, 10% contingency, and WDFW indirect (32.46%).

Item	Description	Amount
Task 1	QAPP Amendment	\$2,899
Task 2	Recruit & Organize Volunteers	\$21,717
Task 3	Site Confirmations and Permissions	\$17,306
Task 4	Obtain Permits & Permissions	\$7,151
Task 5	Equipment Procurement/Assembly	\$24,326
Task 6	Preparation of Mussels	\$13,970
Task 7	Deployment of Cages	\$10,139
Task 8	Retrieval of Cages	\$10,139
Task 9	Processing of Mussels	\$19,360
Task 10	Chemical Analysis/Sample Tracking	\$80,880
Task 11	Data QA/QC Check	\$10,050
Task 12	Data Keying & Entry (EIM)	\$5,903
Task 13	Data Analysis and Report Outline	\$28,795
Task 14	Report for Review	\$33,058
	Total Project Cost	\$285,693