



DEPARTMENT OF
ECOLOGY
State of Washington

IAA No. C1700015

INTERAGENCY AGREEMENT (IAA)

BETWEEN

THE STATE OF WASHINGTON, DEPARTMENT OF ECOLOGY

AND

KING COUNTY

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 King County hereinafter referred to as the "COUNTY," pursuant to the authority granted by state law and King County Charter Section 120.

THE PURPOSE OF THIS AGREEMENT is to implement an effectiveness study through the Regional Stormwater Monitoring Program (RSMP) to test the effectiveness of the default bioretention soil mix recommended by the Stormwater Management Manual for Western Washington to reduce polychlorinated biphenyls in stormwater runoff.

WHEREAS, ECOLOGY has legal authority (RCW 90.48 and WAC 173-220) and KING COUNTY has legal authority (King County Code Chapter 9) that allows each party to undertake the actions in this agreement.

THEREFORE, IT IS MUTUALLY AGREED THAT:

1) SCOPE OF WORK

The **COUNTY** 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 **August 1, 2016**, or date of final signature, whichever comes later, and be completed by **December 31, 2018**, 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 and RCW 39.26.180(3). This is a performance-based contract, in which payment is based on the successful completion of expected deliverables.

The source of funds for this IAA is **General Fund – Private/Local (RSMP)**. The parties have determined that the cost of accomplishing the work identified herein will not exceed **\$191,255.00**. 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 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: Brandi Lubliner, RSMP Coordinator P.O. Box 47600 Olympia, WA 98504-7600 Or by electronic mail brandi.lubliner@ecy.wa.gov
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Payment requests may be submitted on a quarterly basis or at the completion of the work. 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@des.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 contract 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

ECOLOGY's 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.

KING COUNTY's obligation to provide services under this Agreement is contingent on appropriation of funding by KING COUNTY's legislative body. If no such appropriation is made for any future year, this Agreement will terminate at the close of the appropriation year for which the last appropriation that funds these activities was made.

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 **C1700015**.
- d. Appendix A, Statement of Work and Budget.
- e. Any other provisions of this Agreement, including materials incorporated by reference.

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 "works for hire" as defined by the U.S. Copyright Act of 1976 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

The **COUNTY** 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 subcontractors 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 upon thirty (30) calendar days 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 and billings regarding the performance of this Agreement.

The ECOLOGY Representative is:	The KING COUNTY Representative is:
Name: Brandi Lubliner Address: PO Box 47600 Olympia, WA 98504-7600 Phone: 360.407.7140 Email: brandi.lubliner@ecy.wa.gov	Name: Richard Jack Address: 201 S. Jackson, Suite 600 Seattle, WA 98104 Phone: 206.477.4715 Email: richard.jack@kingcounty.gov

APPENDIX A STATEMENT OF WORK AND BUDGET

Effectiveness of the Bioretention Soil mix to Capture and Treat PCB Contaminants.

Background

The Stormwater Working Group (SWG) recently produced a white paper review of the scientific literature regarding the effectiveness of low impact development (LID) water quality treatment of stormwater (Taylor and CardnoTec 2013). However, no literature was available regarding the effectiveness of LID to address the treatment, cycling or removal of polychlorinated biphenyls (PCBs) from stormwater. Many jurisdictions in the Puget Sound basin are pursuing LID as a key stormwater management tool. Rain gardens (also called bioretention facilities) are the Best Management Practice (BMP) being promoted as a significant element of regional LID efforts (Hinman 2013). However, it is unknown if the current bioretention soil mix typically used in LID BMPs and recommended by the Washington State Department of Ecology (Ecology) removes and/or permanently sequesters PCBs. It is also unknown if PCB inputs to these facilities re-volatilize and atmospherically recycle to eventually reach downstream receiving waters.

This 36-month project will monitor new rain garden mesocosms, built (with and without plants) using Ecology's bioretention soil mix (60/40 - sand/compost), receiving roadway runoff under controlled conditions. The study will gather information that describes the potential for the soils and plants to sequester PCBs from stormwater. This project is being conducted in conjunction with a separate study led by the Washington State University (WSU) and US Fish and Wildlife Service (USFWS) to evaluate the effects of plants and fungi on rain garden performance over time. The merging of these two projects creates efficiencies in storm sample collection and also reduces the number of potentially confounding variables by evaluating PCB cycling within rain garden mesocosms.

This effectiveness study is part of the Regional Stormwater Monitoring Program (RSMP), and was approved by the SWG.

Project Objective

This study will evaluate PCB sequestration in Western Washington rain garden mesocosms supplied with roadway runoff. It will be conducted in conjunction with the WSU/USFWS bioretention performance project which is using additional mesocosms to evaluate the influence of plants and fungi on nutrient, metal, and polycyclic aromatic hydrocarbons (PAH) removal rates.

For the proposed work, stormwater from a downspout from I-5 in Seattle will be treated by 55-gallon bioretention mesocosms in real time. King County will work with WSU and USFWS to identify field test site. The mesocosms will be built and conditioned by WSU/USFWS. King County will purchase a pump, tubing, and flow meter to deliver stormwater to the test mesocosms. The WSU/USFWS companion study's design is to treat stormwater on-site using four different types of bioretention mesocosm columns constructed with four different media mixes:

1. bioretention soil media (BSM) only,
2. BSM + plants,
3. BSM + fungi,
4. BSM + plants + fungi.

However, this project will only sample from the mesocosms without fungi. The action of fungi on PCB sequestration is of secondary interest; the behaviour of PCBs in bioretention soils is a more fundamental study question. Thus, this study will only focus on the BSM and BSM + plant treatments. Each of the two BSM and BSM + plants treatments will be replicated three times (a total of 6 mesocosms).

The influent, effluent and soils from the BSM and BSM + plants mesocosms will be analyzed for all 209 PCB congeners. The chemistry data will be used to develop a mass balance for PCBs in the mesocosms over a two-year sampling period. The mass balance information will answer two questions: 1) what fraction of the PCBs entering the mesocosm from stormwater are sequestered and, 2) to what extent is PCB removal permanent or seasonal. It is possible that dry/summer season losses (volatilization of PCBs) will occur, but the extent is unknown. This knowledge will also help to estimate the lifetime PCB accumulation in a bioretention cell.

Prior to use, all mesocosms will be clean water conditioned. The study design includes a single influent inlet that is subsequently distributed to the individual mesocosms. The raw stormwater influent, mesocosm treated effluent and mesocosm soils will be sampled (grab sample) and analyzed for PCB congeners during storm events throughout the two-year sampling period. One storm per quarter will be targeted. WSU/USFWS will collect the samples for this project (along with many other samples for their own project); however, King County will coordinate with WSU/USFW on storm criteria, sampling logistics, jars and sample delivery to the analytical lab.

The PCB concentration data for mesocosm influent, effluent, and soils will be combined with the chemical properties of each congener, estimates of degradation, and measured runoff volumes to develop a conceptual site model of PCB behavior and sequestration in the mesocosms. Findings will be shared with the SWG, Ecology, and all stormwater permittees. Findings will contribute toward a body of knowledge on the BSM and incorporated in revisions to the Stormwater Management Manual for Western Washington, and rain garden design guidance manual to ensure that LID BMPs are based on best available science and an understanding of legacy pollutant behavior in the environment.

Task 1: Planning and Site Preparation (\$34,571.66)

King County will purchase a pump to deliver stormwater from the roadway collector to the study mesocosms, and a flow meter to quantitate the volume of water delivered. King County will prepare and submit a draft Quality Assurance Project Plan (QAPP) specific to this project to describe sampling, quality assurance, data analysis and data storage. Comments from Ecology and the RSMP liaison will be incorporated into the final QAPP by King County. Approval of the final QAPP by the RSMP Coordinator is needed prior to sampling under Task 2. The final approved QAPP will be made available online by King County.

Deliverable 1: Equipment invoices and draft QAPP

Estimated Cost: \$27,657.66
Target Date: August 2016

Deliverable 2: Final QAPP
Estimated Cost: \$6,914.00
Target Date: October 2016

Task 2: Water and soil sampling and analysis (\$104,979.93)

King County will coordinate with WSU/USFWS to conduct monitoring on the two mesocosm treatments (BSM with and without plants). The influent to the study mesocosms is the stormwater runoff pumped from the pipe draining the roadway runoff. The effluent from the study mesocosms is the water post-filtration by the BSM in the mesocosm. The stormwater influent and effluent from each of the 2 treatment mesocosm types will be sampled 8 times over the 2 year project (8 influent and 8 replicate samples [total influent samples n=16]; 48 effluent and 8 replicate samples [total effluent samples n=56]). A total of 72 water samples will be collected to characterize the PCB congener concentrations using sensitive analytical methods. In addition, BSM samples from the mesocosm treatments will be collected and analyzed for PCBs retained in the treatment soil (48 samples and 8 replicates). A total of 56 BSM samples will be analyzed for PCB congeners. .

Deliverable 3: Progress report (all progress reports include Excel spreadsheets of raw data, sampling notes, photographs, and other interim draft work) and subcontract laboratory invoices
Estimated Cost: \$27,295.97
Target Date: December 2016

Deliverable 4: Progress report and subcontract laboratory invoices
Estimated Cost: \$25,889.46
Target Date: July 2017

Deliverable 5: Progress report and subcontract laboratory invoices
Estimated Cost: \$25,889.46
Target Date: December 2017

Deliverable 6: Progress report and subcontract laboratory invoices
Estimated Cost: \$25,905.04
Target Date: July 2018

Task 3: Data compilation, database, and validation (\$11,382.03)

Independent third party data validation of PCB congener data. Compile PCB congener data into a project database.

Deliverable 7: Validation memorandum on first year of monitoring data and draft database
Estimated Cost: \$6,829.22
Target Date: August 2017

Deliverable 8: Validation memorandum on second year of monitoring data

Estimated Cost: \$4,552.81
 Target Date: June 2018

Task 4: Conceptual site model, mass balance, and reporting (\$37,728.96)

Stormwater volumes delivered to the mesocosms will be calculated in project spreadsheets along with a PCB mass balance calculations by mesocosm types. The draft report will include summary statistics of PCBs and appropriate other shared water quality data gathered as part of the WSU/USFWS study on the same mesocosms (e.g., total suspended solids, total organic carbon, and dissolved organic carbon). The RSMP Coordinator and project liaison will provide comments on the draft report. The final report will be approved by Ecology and made available online by King County.

Deliverable 9: Draft report including relevant appendices for raw and validated data, draft calculations for flow volumes, mass balance, and conceptual model.

Estimated Cost: \$20,012.11
 Target Date: June 2018

Deliverable 10: Final report and final project Access database of flow and analytical results.

Estimated Cost: \$17,716.85
 Target Date: October 2018

Task 5: Outreach and Communication (\$2,592.42)

Conference presentation of the study design, results, and conclusions to permittees and stakeholders. RSMP fact sheet suitable for public distribution.

Deliverable 11: A power point presentation for publication and presentation

Estimated Cost: \$2,592.42
 Target Date: October 2018

Budget:

Description	Amount
Task 1	\$34,571.66
Task 2	\$104,979.93
Task 3	\$11,382.03
Task 4	\$37,728.96
Task 5	\$2,592.42
Total Project Cost	\$191,255.00