



DEPARTMENT OF
ECOLOGY
State of Washington
Ecology IAA No. C2200192
DNR IAA No. 93-103509

INTERAGENCY AGREEMENT (IAA)

BETWEEN

THE STATE OF WASHINGTON, DEPARTMENT OF ECOLOGY

AND

WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

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 Washington State Department of Natural Resources hereinafter referred to as the “**DNR**” and “**CONTRACTOR**,” pursuant to the authority granted by Chapter [39.34](#) of the Revised Code Washington, Interlocal Cooperation Act.

THE PURPOSE OF THIS AGREEMENT is for is for to quantify stormwater mitigation values associated with individual local trees in urban or urbanizing areas.

WHEREAS, **ECOLOGY** has legal authority (RCW 90.48 and WAC 173-220) and **DNR** has legal authority (RCW 90.48) that allows each party to undertake the actions in this agreement.

THEREFORE, IT IS MUTUALLY AGREED THAT:

1. SCOPE OF WORK

DNR 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 will commence on **June 1, 2022**, (*or the date of final signature, whichever comes later,*) and be completed by **August 15, 2024**, unless the Agreement is 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, under 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**. Both parties agree to comply with all applicable rules and regulations associated with these funds.

The parties have determined that the cost of accomplishing the work identified herein will not exceed Two Hundred Thirteen Thousand Three Hundred Eighty-Nine Dollars (213,389), 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 work.

ECOLOGY may, at its sole discretion, terminate or suspend this Contract, or withhold payments claimed by the CONTRACTOR for services rendered, if the CONTRACTOR fails to satisfactorily comply with any term or condition of this Agreement.

4. BILLING AND PAYMENT PROCEDURE

Payment requests shall be submitted on state form, Invoice Voucher A19-1A. Invoice voucher shall reference the Agreement (IAA) number and clearly identify those items that relate to performance under this Agreement. Invoices shall describe and document to ECOLOGY's satisfaction a description of the work performed, the progress of the work, and related costs. Attach supporting documentation to the invoice.

Send invoices to:

State of Washington
Department of Ecology
Water Quality Program
Attn: Keunyea Song
PO Box 47600
Olympia, WA 98504-7600

Payment requests shall be submitted on a Quarterly basis. 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 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.

Payment will be issued through Washington State's Office of Financial Management's Statewide Payee Desk. To receive payment, CONTRACTOR must register as a statewide vendor by submitting a statewide vendor registration form and an IRS W-9 form at website, <https://ofm.wa.gov/it-systems/statewide-vendorpayee-services>. For questions about the vendor registration process, contact Statewide Payee Help Desk at (360) 407-8180 or email PayeeRegistration@ofm.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

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, 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 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 C2200192.
- d. Appendix A, *Statement of Work and Budget*.
- e. Appendix B, *Special Terms and Conditions*
- f. 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 materials 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 materials relevant to this Agreement must be retained for six years after expiration of this Agreement. 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. Each party will utilize reasonable security procedures and protections for all materials related to this Agreement. All materials are 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, and register these items, 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

CONTRACTOR 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 contractor and 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. SUSPENSION FOR CONVENIENCE

ECOLOGY may suspend this Agreement or any portion thereof for a temporary period by providing written notice to the CONTRACTOR a minimum of seven (7) calendar days before the suspension date. CONTRACTOR shall resume performance on the first business day following the suspension period unless another day is specified in writing by ECOLOGY prior to the expiration of the suspension period.

20. 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.

21. 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.

22. 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.

23. 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, they will promptly notify the other party in writing of such change, such changes do not need an amendment.

The ECOLOGY Representative is:

Name: Keunyea Song
Address: 300 Desmond Dr SE (Fed Ex)
PO Box 47600 (USPS)
Phone: 360-407-6158
Email: Keunyea.Song@ecy.wa.gov

The DNR Representative is:

Name: Abby Barnes
Address: 1111 Washington St SE
Olympia, WA 98504
Phone: (360) 995-2419
Email: abby.barnes@dnr.wa.gov

24. 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 signatures below.

**State of Washington
Department of Ecology**

**State of Washington
Department of Natural Resources**

By:

By:

Signature Date

Signature Date

Heather R. Bartlett

Alexandra K Smith

Deputy Director

Deputy Supervisor – Forest Resilience,
Regulation and Aquatics

APPENDIX A

STATEMENT OF WORK (SOW) AND BUDGET

Project Title: The effectiveness of trees in mitigating stormwater runoff in Western Washington (Phase II)

Project Background

This study is to continue and expand upon the first phase of Stormwater Action Monitoring (SAM) study that evaluated stormwater mitigation potential of local individual trees.

Urban trees located in parks, natural areas, street-side and on private lands can provide excellent opportunities to mitigate the effects of stormwater runoff in the Puget Sound. While the runoff mitigation potential of forest or large tree stands is well known, there is still the need to quantify stormwater mitigation values associated with individual trees.

The Phase I tree study, described above, successfully developed a hydrologic dataset that shows how an individual tree captures rainfall and mitigates stormwater. While Phase I focused on mature tree in forest setting, this phase of the study will include younger and smaller trees near or on impervious surface where stormwater impacts are big and trees may not be as vigorous in this Phase II study.

The purpose of the work for this Phase II project is to quantify stormwater mitigation values of existing common native evergreen and deciduous trees, based on the physio-climatic conditions of the Pacific Northwest.

Proposed work

Two sap flux systems from the original Phase 1 study will be deployed at the previous study locations on The Evergreen State College (TESC) campus. These two sap flux setups will ensure that Phase 1 and Phase 2 of the studies are connected with continuously logging sensors that will help maintain continuity of the climatic record, and associated variability of sap flux data. Ten douglas fir trees and ten big leaf maple trees will be monitored as part of this work.

Since Phase II is designed to target more visible and younger trees that are likely to be out in the open, two important considerations of security and power supply will be lacking. To account for this challenge, Washinton State University (WSU) and TESC are developing a mobile data logger that is smaller and therefore discrete, cheaper, and has its own power supply. These mobile data loggers will be connected to the same thermal dissipation probes (TDP) used in Phase 1, and will be deployed for 24-48 hours periods on 10-20 trees per measurement event, for at least 12 measurement events per year. This will ensure that the devices are not left out in the open for extended periods, minimizing the likelihood of vandalism and theft. Measurement events can also take place across multiple different locations (new locations/trees for each event), maximizing the inference for street tree water use across the region. Fine-tuning these data loggers will occur in the instrumentation task of this SOW.

For the mobile set up, DNR will focus on a 50-50 mix of Douglas fir (most common tree) and planted street maple trees (or the most-common street trees in the lowlands of the Puget Sound

region). In the first year of this agreement, DNR will prioritize measurement on trees available underlain by impervious surfaces in TESC's parking lots. DNR will choose these trees as part of developing the Quality Assurance Program Planning (QAPP) document.

Task 1 – Phase I Factsheet development (see Budget Table for Cost)

A fact sheet that summarizes the Phase I study findings will be developed. This Factsheet will follow the design and parameters of the SAM study factsheet template. The factsheet will summarize findings from Phase I and mention Phase II of the study.

Deliverable 1: Fact sheet draft
Target Date: July 31 2022

Task 2 – Project Administration (see Budget Table for Cost)

DNR will lead and administer the project. DNR will take the lead role in development and coordination of the technical advisory committee (TAC) for this project. The TAC will advise the final Phase II study design and address any technical issues and concerns. and the TAC will be derived of a multiple specialists in both forestry and an existing stormwater TAC will continue to meet as needed throughout Phase II of the project.

Deliverable 2- Bi-Annual Report: Bi-annual reports will include brief description of status of the contract tasks and decisions related to the tasks made during calls, meetings and coordination discussions with the advisory committees and communication with ECOLOGY as appropriate.

Deliverable 2.2. Bi-Annual Report 1
Target Dates: December 31 2022

Deliverable 2.3. Bi-Annual Report 2
Target Dates: June 30 2023

Deliverable 2.4. Bi-Annual Report 3
Target Dates: December 31 2023

Task 3 – Quality Assurance and Project Protocol (QAPP) Amendment (see Budget Table for Cost)

The QAPP developed during the Phase I study will be updated to cover the new monitoring design, including new trees and location selection criteria, procedure, and a final list of trees and monitoring locations Note: The study design, especially selection of new trees and sampling location selection procedure will be discussed with TAC members before finalizing the QAPP Amendment. Any necessary corrections or minor changes related to measurements or processes will be made as well.

Deliverable 3.1: Draft QAPP amendment
Target Date: July 15 2022

Deliverable 3.2: Final QAPP amendment
Target Date: August 15 2022

Task 4 – Instrument Installation and Monitoring (see Budget Table for Cost)

The prototype data logger that is currently under development will be finalized, tested and replicated. Candidate trees will be instrumented over 24-48 hour periods over the sampling phase of the study.

Deliverable 4.1: Email and installation photos confirming successful installation of instruments with photos
Target Date: August 31 2022

Task 5 – Instrument Maintenance and Data Downloads (see Budget Table for Cost)

All sensors and data logging systems will be checked and data downloaded on a regular basis. Any maintenance issues and available preliminary results will be included in the above described bi-annual reports starting from the bi-annual report 2, due December of 2022.

Task 6 – Data Analysis, Process and Submittal (see Budget Table for Cost)

Data will be analyzed using open source statistical and graphing software. DNR and a subcontractor will evaluate quality assurance metrics and track quality control measures to ensure high quality data.

Deliverable 6: Copy of data in Excel format
Target Date: March 31 2024

Task 7 – Final Tree Study Phase II Report (see Budget Table for Cost)

The report will be a continual discussion as outlined in the the Phase I Report. The report will follow the SAM report template. The Final Tree Study Report will include findings on hydrologic benefits of different individual trees, comparison between mature and younger trees and factors regulating these benefits. DNR and ECY will provide comments on the report in a timely manner.

Deliverable 7.1: Draft report
Target Date: April 30 2024

Deliverable 7.2: Final report
Target Date: May 31 2024

Task 8 – Outreach/communication (see Budget Table for Cost)

Deliverable 8.1: Final results virtual presentation will be made to the stormwater work group.
 Target Date: June 30 2024

Deliverable 8.2: Fact sheet draft
 Target Date: June 30 2024

Document Accessibility Requirements

ECOLOGY has identified the documents intended to be published, posted, or hosted on ECOLOGY’s public Stormwater Action Monitoring website. The CONTRACTOR shall provide these documents (i.e. Data file, final report and fact sheet) in both their “native format” (such as Word, Excel, or PowerPoint) and in PDF format (latest version of Adobe Acrobat Pro or compatible). The CONTRACTOR shall run the PDF Accessibility Checker’s report and provide the report with the delivered documents. The PDF documents must satisfactorily pass the Adobe Acrobat Pro Accessibility Checker (Full Check). ECOLOGY will review the PDF Accessibility results and may request the CONTRACTOR remedy any known issues. ECOLOGY reserves the right to perform independent testing to validate accessibility and may require the CONTRACTOR remedy any identified issues before acceptance of the documents. For assistance concerning accessibility, visit Washington State Office of the Chief Information Officer, OCIO Policy no. 188, Accessibility (<https://ocio.wa.gov/policy/accessibility>).

Budget:

Task	Description	Amount
1	Phase I Factsheet Development	1,373
2	Project Administration - DNR	13,000
3	QAPP Amendment	13,733
4	Instrument Installation and Monitoring	60,754
5	Instrument Maintenance and Data Downloads	27,470
6	Data Analysis, Process and Submittal	67,851
7	Final Report	27,835
8	Outreach/communication	1,373
	Total Project Cost	213,389

Included indirect charges (30% of sal. +ben)

APPENDIX B
SPECIAL TERMS AND CONDITIONS

1) Accessibility Requirements for Covered Technology

CONTRACTOR must comply with the Washington State Office of the Chief Information Officer, OCIO Policy no. 188, Accessibility (<https://ocio.wa.gov/policy/accessibility>) as it relates to “covered technology.” This requirement applies to all products supplied under this Contract, providing equal access to information technology by individuals with disabilities, including and not limited to web sites/pages, web-based applications, software systems, video and audio content, and electronic documents intended for publishing on ECOLOGY’s public web site.