DEPARTMENT OF
ECOLOGY
State of Washington

AMENDMENT NO. 5

TO

IAA NO. **C1500059**

BETWEEN THE

STATE OF WASHINGTON DEPARTMENT OF ECOLOGY

AND

CITY OF REDMOND

PURPOSE: To amend the Agreement between the state of Washington, Department of Ecology, hereinafter referred to as "ECOLOGY," and the City of Redmond, hereinafter referred to as "CITY" or "CONTRACTOR."

WHEREAS, This amendment adds tasks, modifying tasks, and adds time to accomplish the new work.

IT IS MUTUALLY AGREED the Agreement is amended as follows:

1) The project end date is changed from December 31, 2022 to September 30, 2025.

2) Task D5.0 from Amendment No. 4 of IAA No. C1500059 is removed and $54,280 will be removed from the budget.

3) Additional tasks are added by this amendment as Appendix E, a new appendix. Compensation is increased by $990,724.48 for the additional tasks. Appendix E – has three tasks (E1.0, E2.0, and E3.0) to continue monitoring at the study sites for January 1, 2022 to September 30, 2024; and two tasks (E4.0 and E5.0) for a trend analysis report for Water Years 2016 – 2023 and a pond retrofit effectiveness evaluation.

4) The total of the agreement is changed:

   - Previous total $2,646,849.85 - $54,280 (amendment 5 decrease) = $2,592,569.85
   - $2,592,569.85 + $990,724.48 (amendment 5 increase) = to a new contract total of $3,583,294.33, a total increase of $936,444.48.

All other terms and conditions of the original Agreement including any other amendments remain in full force and effect, except as expressly provided by this Amendment.

This Amendment is signed by persons who represent that they have the authority to execute this Amendment and bind their respective organizations to this Amendment.

This Amendment is effective on the Ecology signature date.

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

State of Washington
Department of Ecology

By:

_____
Signature Date

_____
Print Name

_____
Title

City of Redmond

By:

_____
Signature Date

_____
Print Name

_____
Title

APPENDIX E

STATEMENT OF WORK FOR JANUARY 1, 2022 THROUGH SEPTEMBER 30, 2025

Background

The City of Redmond (REDMOND) has a Citywide Watershed Management Plan (WMP) to implement structural and nonstructural stormwater controls pursuant to the Phase II municipal stormwater permit. This Redmond Paired Watershed Study (RPWS) will study and quantify improvements in receiving water conditions based on implementing the WMP controls. This RPWS will measure various hydrologic, chemical, physical, and biological indicators of stream health. The RPWS was initiated in the fall of 2015 and will be implemented over an anticipated ten-year timeframe. Funding comes from the Stormwater Action Monitoring (SAM) program, a coordinated monitoring program founded by Phase I and II municipal stormwater permittees and administered by Ecology.

This scope of work in Appendix E continues field measurement collection, data management and quality assurance of review, data analysis, and reporting for this study over the last three quarters of water year 2022 (a water year is defined as the 12-month period that extends from October 1 in any given year through September 30 of the following year) and all of water year 2023 and 2024. Two additional tasks in Appendix E includes a trend analysis report for water years 2016 – 2023 and effectiveness monitoring for two stormwater pond retrofits. Additional monitoring and trend analysis for the study in subsequent years would occur under a new contract or addendum to this contract. The monitoring will follow the already approved quality assurance project plan (QAPP) for this Paired Watershed study.

This scope of work includes several deviations from the QAPP:

- The application watershed of Evans Creek Tributary 108 has been removed from this scope of work. Evans Creek Tributary 108 is in unincorporated King County. King County has no further plans for stormwater retrofits within this watershed during the timeline of this project. The trend analysis report for water years 2016 through 2019 (Herrera, 2021) did not identify any improvement within the watershed based on the two vaults installed by King County in water year 2017. Based on this finding and no further retrofits planned during the project timeline, the watershed is being removed to reduce project costs.

- The QAPP indicates trend analyses reports should also be prepared following 4, 6, 8, and 10 years of study implementation. These reports summarize the results of statistical analyses that are described in the QAPP to identify relationships between rehabilitation efforts and improving receiving water conditions. This scope of work includes a task for preparing the trend analysis report following 8 years of study implementation. The trend analyses report following 4 years of study implementation was prepared under Task D4.0 from Amendment No. 4 of IAA No. C1500059. Amendment No. 5 of IAA No. C1500059 removes work and budget ($54,280) identified under Task D5.0 from Amendment No. 4 of IAA No. C1500059 to prepare the trend analysis report following 6 years of study implementation. This change was made with Ecology's concurrence to reduce the overall budget for the study while allowing for a longer period of data collection before conducting analyses to identify relationships between rehabilitation efforts and improving receiving water conditions.

- The QAPP indicates that sediment quality monitoring and physical habitat monitoring will occur at each watershed annually. Results from each of these monitoring efforts show very little change over

time. Monitoring for sediment quality and physical habitat will occur every other year. For this Scope of Work, monitoring will occur in WY2023.

- The QAPP indicates that continuous conductivity will be collected in all watersheds. Results from the conductivity monitoring are very noisy, and no trend was detected during the trend analysis report for water years 2016 through 2019 (Herrera, 2021). Continuous conductivity monitoring will not be included in this Scope of Work.

This scope of work includes a discussion of the activities, assumptions, deliverables, and a schedule associated with the following tasks:

- Task E1.0 – Last three quarters of Water Year 2022 Study Implementation
- Task E2.0 – Water Year 2023 Study Implementation
- Task E3.0 – Water Year 2024 Study Implementation
- Task E4.0 – Trend Analysis Report: Water Years 2016 - 2023
- Task E5.0 – Pond Retrofit Effectiveness Monitoring

Work on these tasks will be performed by REDMOND with assistance from Herrera Environmental Consultants (Herrera), and King County. REDMOND, Herrera, and King County are collectively referred to as the "Project Team" in this scope of work. Where applicable, specific roles for each member of the Project Team are called out under individual tasks. The cost by deliverable, and schedule are included in the table at the end of this Scope of Work.

Task E1.0 – Last three quarters of Water Year 2022 Study Implementation

Under this task, the Project Team will implement required monitoring activities identified in the QAPP for the RPWS over the final three quarters water year 2022 (January 1, 2022 through September 30, 2022). This would include field measurement collection, data management and quality assurance review, and reporting. These activities are described in more detail under the following subtasks:

Subtask E1.1 - Hydrologic Monitoring

REDMOND has subcontracted with King County to continue the hydrologic monitoring component of the RPWS through the first quarter of Water Year 2024. This involves continuous flow monitoring at 12 stations in six watersheds. Data from the continuous flow monitoring will be processed to calculate a suite of indicators for evaluating hydrologic impacts from urban development. King County will continue hydrologic monitoring which involves maintenance of the continuous flow monitoring equipment and replacement as needed, telemetry where cell phone coverage is available, maintenance of the automatic processing, and posting of data on King County's Hydrological Information Center (HIC) database on their public website. King County will perform a quality assurance review on these data that will clearly identify any limitations to their use by January each calendar year for the prior water year's data. Herrera will generate summary statistics (e.g., antecedent dry period, flow at time of sample collection) from the flow record for storm and base flow events that were sampled for water quality under Subtask E1.2. These statistics will be stored in the data management system developed for this project and presented in the data report described under Subtask E1.6. These statistics will be used in analyses to detect trends in water quality that will be performed in Task

E4.0. REDMOND will coordinate the project team members (Herrera and King County) to summarize the continuous flow monitoring data for each station for presentation in the data report described in Subtask E1.6.

Assumptions

- Telemetry and database all continue to work without problems.
- Equipment will be replaced as it reaches maximum manufacturer's life expectancy.

Deliverables

- Posting of telemetered data on HIC (continual).
- Posting of non-telemetered data on HIC will occur every 5 weeks.
- Table with flow summary statistics for sampled storm and base flow events from 12 stations.

Subtask E1.2 – Water Quality Monitoring

REDMOND subcontracted with Herrera for the water quality monitoring component of the RPWS. This involves the collection of up to twelve grab samples over the water year during storm events (three each quarter) at 12 stations. In addition, up to four grab samples will be collected over the water year during base flow (one each quarter) at these stations. Each sample will be analyzed for the following indicators for evaluating water quality impacts from urban development:

- Total suspended solids
- Turbidity
- Conductivity
- Hardness
- Dissolved organic carbon
- Fecal coliform bacteria
- Total phosphorus
- Total nitrogen
- Copper, total and dissolved
- Zinc, total and dissolved

In addition, probes will be used for continuous in-situ monitoring of temperature at all 12 stations.

Collection of grab samples during both storm and base flow events will include the following activities performed in accordance with the QAPP for the study:

- Weather tracking and go/no go decision coordination
- Mobilization of field crews for sampling during the event
- Delivery of samples to the laboratory after the event

- Auditing of laboratory analytical results within seven days of their receipt
- Entry of the analytical results into the study's data management system
- Preparation of a data validation memorandum that will establish the usability of all the data
- Preparation of graphical and tabular summaries for the data report described in Subtask E1.4

REDMOND will ensure coordination between the project team members. King County will oversee the continuous in-situ monitoring at each station using the probes. Herrera will coordinate with King County to provide review of continuous data and summarize them for presentation in the data report described in Subtask E1.4.

Assumptions

- Storm event sampling will be performed by two teams of two Herrera staff. Sampling for each event will be performed over an 8- hour period including travel but not including storm tracking and go/no go decision coordination. A 15 percent contingency is included to account for sampling event false starts and allow for make-up sampling.
- Nominally, all 12 stations will be sampled during each storm event. If specific stations are not sampled because a sampling event was terminated, they will be prioritized for sampling in subsequent events to ensure the annual sampling goals established for the study are met for every station.
- Base flow event sampling will be performed by one team of two Herrera staff. Sampling for each event will be performed over a 10- hour period including travel.
- King County will provide continuous water quality monitoring data in an electronic format for review by Herrera. King County will perform a quality assurance review on these data that will clearly identify any limitations to their use and interpretation.
- Obtaining storm event samples may not be possible during particularly dry quarters. If this should occur, efforts will be made to conduct makeup sampling in subsequent quarters to obtain twelve grab samples from each station over the water year.

Deliverables

- Laboratory analytical results and documentation of Herrera audits from water quality sampling at 12 stations during 3 storm events and 1 base flow event per quarter will be uploaded to the Environmental Information Management (EIM) database.
- Data validation memorandum.

Subtask E1.3 – Biological Monitoring

Under this subtask, REDMOND will ensure Herrera conducts biological monitoring for the RPWS once during the water year at 17 stations. Pursuant to the QAPP for the study, this entails the collection of a composite sample of benthic macro invertebrates from specific locations along the cross-sections for physical habitat monitoring that are described in Subtask E1.4. These samples will be submitted to an analytical laboratory where they will be processed to compute the following indicators for use in evaluating stream health:

- Benthic Index of Biotic Integrity
- Taxa Richness
- Ephemeroptera Richness
- Plecoptera Richness
- Trichoptera Richness Clinger Percent
- Long-Lived Richness
- Intolerant Richness
- Percent Dominant
- Predator Percent
- Tolerant Percent

Assumptions

- Benthic macro invertebrate samples and the sediment samples described in Subtask E1.3 will be collected during the same field visit to each station. This sample collection will be performed by one team having two Herrera staff. Collection of these samples from 3 stations will require approximately 8-hours of field time including travel.
- A delay of approximately 6 months can be expected for obtaining biological metrics from the contract lab.

Deliverables

- Laboratory results from macroinvertebrate sample analysis for 17 stations entered into the Puget Sound Stream Benthos database or EIM.

Subtask E1.4 - Water Year Data Summary Report

A data summary report will contain tabular and/or graphical summaries of all data that were collected over the water year in connection with the following monitoring components of the RPWS: hydrologic, water quality, and biological. This report will provide a detailed description of any quality assurance issues associated with these data based on results from audits and data validation memoranda. Any corrective actions that were undertaken to address quality assurance issues will also be described. Finally, this report will document all rehabilitation efforts that have occurred in the Application watersheds over the previous year. Included will be detailed information on the design and operational status of structural stormwater controls and the frequency and geographic extent of nonstructural stormwater control implementation.

REDMOND will collaborate with Herrera and King County to prepare a preliminary draft of the data summary report. The draft will be sent to Ecology (SAM Coordinator) and the technical advisory committee that has been established for the study (see Subtask E1.5). Herrera will then finalize the water year report based on comments received. REDMOND will review and send to Ecology.

Deliverables

- Draft data summary report.
- Final Water Year 2022 data summary report.

Subtask E1.5 – Technical Advisory Committee Coordination

The technical advisory committee for this study includes representation from the following agencies: Ecology, King County, and the U.S. Geological Survey (USGS). This task is to coordinate and for the project team to participate in up to two meetings to obtain input from the committee on technical issues related to the study over water year 2022. It is anticipated that one of these meetings will occur after the release of the data report from Subtask E1.4 to review and discuss the monitoring results from the water year. Contingency budget is also provided for a second, optional meeting to address unforeseen issues that may arise during implementation of the RPWS over the water year.

Assumptions

- Technical advisory committee meetings will last 2-hours and be attended by up to 3 Herrera staff.
- King County presentation on hydrologic data and attended by up to 4 staff.

Deliverables

- King County presentation on hydrologic data.
- Meeting notes documenting discussion items and consensus decisions from the technical advisory committee.

Subtask E1.6 – Project Management

REDMOND, Herrera, and King County will share responsibilities for ongoing contract administration of this project, including preparing invoices and progress reports, as well as coordination of all work efforts with Ecology (SAM Coordinator) and the Project Team.

Deliverables

- Monthly invoices and progress reports from Herrera.
- Semi-annual invoices and annual progress report from King County.

Task E2.0 – Water Year 2023 Study Implementation

Under this task, REDMOND will ensure Herrera and King County implement required monitoring and reporting activities identified in the QAPP for the RPWS over water year 2023 (October 1, 2022 through September 30, 2023). The activities, assumptions, and deliverables for Task E2.0 are identical to those for Task E1.0 with the addition of the following tasks:

Subtask E2.7 – Sediment Quality Monitoring

The sediment quality monitoring component of the RPWS involves the collection of sediment samples once during the water year at 17 monitoring stations. Each sample is analyzed for the following indicators for evaluating sediment quality impacts from urban development:

- Total organic carbon

- Copper
- Zinc
- Polycyclic aromatic hydrocarbons
- Phthalates

This task is to collect stream sediment samples. This includes the following activities that will be performed in accordance with the QAPP for the study:

- Mobilization of field crews for sampling
- Delivery of samples to the laboratory after the event
- Auditing of laboratory analytical results within seven days of their receipt
- Entry of the analytical results into the study's data management system
- Preparation of a data validation memorandum that will establish the usability of all the data
- Preparation of tabular summaries for the data report described in Subtask E1.4

Assumptions

- Sediment samples and the benthic macro invertebrate samples described in Subtask E1.3 will be collected during the same field visit to each station. This sample collection will be performed by one team having two Herrera staff. Collection of these samples from 3 stations will require approximately 8-hours of field time including travel.

Deliverables

- Laboratory analytical results and documentation of Herrera audits from sediment sampling at 17 stations.
- Data validation memorandum.

Subtask E2.8 - Physical Habitat Monitoring

Under this subtask, REDMOND will ensure Herrera is trained and conducts physical habitat monitoring for the RPWS once during the water year at 17 monitoring stations. Herrera will coordinate directly with Ecology's Environmental Assessment Program (EAP) for training, data management, and quality control of habitat data. At each station, the characteristic bed-form type will be recorded as a whole, and physical habitat quality indicators will be measured at 11 cross sections and one longitudinal (thalweg) profile. Pursuant to the QAPP for the study, the following indicators will be measured at each cross-section:

- Bank-full width, wetted width, and cumulative bar width
- Bank-full depth, wetted depth, substrate class and embeddedness
- Fish cover

- Riparian shading
- Riparian vegetation structure

The following indicators will be measured along the thalweg profile:

- Thalweg depth and the presence of bars and/or edge pools
- Main channel slope and bearing
- Large woody debris tally, including notation of diameter, length, category, zone, and key-pieces

Upon completion of field work, physical habitat monitoring data will be uploaded to the EIM. Based on post processing of these data within this system, Ecology will provide a suite of indicators for assessing physical habitat quality that are consistent with those being used for the broader SAM program. A summary of these indicators will be presented in the data report described in Subtask E1.6.

Assumptions

- One Herrera staff will participate in an Ecology sponsored 2-day training session on the physical habitat monitoring protocols developed for the SAM program. These staff will coordinate an additional 1-day training session for three additional Herrera staff that will be involved in the monitoring.
- Physical habitat monitoring will be performed by two teams having two Herrera staff. Physical habitat monitoring at each station will require approximately 8-hours of field time including travel.
- Ecology's EAP will perform quality assurance review of the compiled physical habitat monitoring data and calculate metrics for assessing physical habitat conditions using scripts that have been developed to work with the Watershed Health database in the EIM. Costs for EAP's support for these activities are not included in the cost proposal for this scope of work.
- A delay of approximately 6 months can be expected for obtaining processed metrics for assessing physical habitat conditions from EAP via the Watershed Health database in the EIM system.

Deliverables

- Results from physical habitat monitoring at 17 stations that are uploaded to Watershed Health database in the EIM.

Task E3.0 –Water Year 2024 Study Implementation

Under this task, REDMOND will ensure Herrera and King County implement required monitoring activities identified in the QAPP for the RPWS for water year 2024 (October 1, 2023 through September 20, 2024). The activities, assumptions, and deliverables for Task E3.0 are identical to those for Task E1.0.

Task E4.0 –Trend Analysis Report: Water Years 2016 - 2023

Following completion of required monitoring for water year 2023 and preparation of the associated data summary report, REMOND will ensure Herrera prepares a trend analysis report covering data collected over the first 8 years of study implementation (water years 2016 – 2023). This report will summarize results from statistical analyses performed to detect improving or degrading trends in receiving water conditions in the six watersheds that are the focus of monitoring efforts for the RPWS. A detailed discussion of these trends will be

provided with a specific emphasis on relationships between trends and rehabilitation efforts in the Application watersheds relative to trends in the Reference and Control watersheds. A summary of major conclusions from these analyses will also be provided.

Statistical analyses will follow procedures that are described in the QAPP and documented in minutes from the technical advisory committee meeting that occurred on July 29, 2019. The following specific procedures will be performed in connection with these analyses:

- Correlation analyses to detect trends over time in water and sediment pollutant concentration data and computed indicators from hydrologic and biological monitoring.
- Computation of annual mass load estimates from data for a subset of parameters from water quality monitoring; correlation analyses would then be performed on these estimates to detect trends over time.
- Comparison of data from physical habitat monitoring to reference conditions from Puget Sound lowland ecoregion streams.

REDMOND will collaborate with Herrera and King County to prepare a draft of the trend analysis report. The draft will be sent to Ecology (SAM Coordinator) and the technical advisory committee that has been established for the study (see Subtask E1.7). Herrera will then finalize the trend analysis report based on comments received. REDMOND will review and send to Ecology.

REDMOND will collaborate with Herrera to communicate the trend findings report by creating and conducting two (2) presentations of the design results, and interim-study conclusions to permittees and stakeholders. One of these presentations will be made to the Stormwater Work Group. The other will be made at a conference with a stormwater and regional focus (e.g. MuniCon), upon agreement with the Ecology (SAM Coordinator). REDMOND will collaborate with Herrera to create a SAM fact sheet for distribution on the SAM website.

Assumptions

- Comments on the draft and revised draft trend analysis reports will be provided using a standardized template to be provided by Herrera.

Deliverables

- Draft trend analysis report.
- Final trend analysis report.
- Two presentations on study design and findings to date.
- SAM factsheet on project findings to date.

Task E5.0 – Pond Retrofit Effectiveness Monitoring

REDMOND will collaborate with Herrera to implement monitoring to evaluate the effectiveness two existing stormwater detention ponds in the Monticello Watershed that were retrofitted with a continuous monitoring and adaptive control (CMAC) system to improve their performance for managing peak flows during storm events. As described in the RPWS Pond Retrofit Effectiveness Monitoring Proposal dated February 1, 2021, this monitoring will involve the following steps:

1. Develop relationships for predicting the available storage in each pond as a function of stage.
2. Develop spreadsheet models to predict inlet discharge to the ponds in 15-minute intervals based on the relationship from Step 1 and using measured data from the CMAC system for outlet discharge and stage.
3. Estimate the inlet discharge for each pond over an entire water year using the models from Step 2 and the continuous measurements (15-minute logging interval) of outlet discharge and stage from the CMAC system over the same period.
4. Use the continuous estimates of inlet discharge from Step 3 as input for a Western Washington Hydrology Model (WWHM) that will be developed for each pond to predict outlet discharge in their current configuration.
5. Conduct statistical analyses to detect a significant decrease in peak outlet discharge from the ponds relative to the expected peak outlet discharge of the ponds in their current configuration.

In addition to the comparison in Step 5, data from the hydrologic monitoring described in Task E1.1 will be analyzed to detect improving trends in receiving water conditions that may stem from the pond retrofits. Similarly, data from the physical habitat monitoring stations described in Task E2.8 will be analyzed for the same purpose.

The effectiveness monitoring will initiate once the CMAC system becomes operational in each pond (April 2021) and extend over a period capturing water years 2022 and 2023. This will produce a continuous time series of outlet discharge data that will be collected over a sufficient duration to detect pond performance improvements across a range of storm sizes.

Results from the analyses described above will be summarized in a stand-alone effectiveness monitoring report that will be produced following the conclusion of monitoring at the end of water year 2023.

REDMOND will collaborate with Herrera and King County to prepare a draft of the trend analysis report. The draft will be sent to Ecology (SAM Coordinator) and the technical advisory committee that has been established for the study (see Subtask E1.5). Herrera will then finalize the trend analysis report based on comments received. REDMOND will review and send to Ecology.

Deliverables

- Draft effectiveness monitoring report.
- Final effectiveness monitoring report.
- Fact sheet.

Task/Deliverable	Quantity	Total by Deliverable	Target Dates
Task E1.0 – Last three quarters of Water Year 2022 Study Implementation			
Subtask E1.1 Hydrologic Monitoring			
Posting of telemetered data on HIC (continual). Posting of non-telemetered data on HIC will occur every 5 weeks.	1	$56,300.76	
Equipment maintenance	1	$7,584.16	
Table with flow summary statistics for sampled storm and base flow events from 12 stations.	1	$7,850	
Subtask Total		$71,734.92	3/31/2023
Subtask E1.2 Water Quality Monitoring			
Laboratory analytical results and documentation of Herrera audits for 12 stations X 12 sampling events	12	$93,240	
Data validation memorandum	1	$13,800	
Subtask Total		$107,040	3/31/2023
Subtask E1.3 Biological Monitoring			
Laboratory results from macroinvertebrate sample analysis for 17 stations entered into the Puget Sound Stream Benthos database or EIM	1	$14,810	
Subtask Total		$14,810	3/31/2023
Subtask E1.4 Water Year Data Summary Report			
Draft data summary report	1	$21,500	6/30/2023
Final data summary report	1	$5,390	9/30/2023
Subtask Total		$26,890	
Subtask E1.7 Technical Advisory Committee Coordination			
King County presentation on hydrologic data and report review	1	$3,492.56	
Meeting notes documenting discussion items and consensus decisions from the technical advisory committee.	2	$3,700	
Subtask Total		$7,192.56	6/30/2023
Subtask E1.8 Project Management			
Monthly progress reports from Herrera	9	$16,740	

Annual progress report from King County	1	$649.92	
Subtask Total		$17,389.92	12/31/2022
E1 Task Total		$245,057.40	

Task E2.0 – Water Year 2023 Study Implementation

Subtask E2.1 Hydrologic Monitoring

Posting of telemetered data on HIC (continual). Posting of non-telemetered data on HIC will occur every 5 weeks.	1	$56,865.95	
Equipment maintenance	1	$7,584.17	
Table with flow summary statistics for sampled storm and base flow events from 12 stations.	1	$8,080	
Subtask Total		$72,530.12	3/31/2024

Subtask E2.2 Water Quality Monitoring

Laboratory analytical results and documentation of Herrera audits for 12 stations X 16 sampling events	16	$126,560	
Data validation memorandum	1	$14,100	
Subtask Total		$140,660	3/31/2024

Subtask E2.3 Sediment Quality Monitoring

Laboratory analytical results and documentation of Herrera audits for 17 stations	1	$17,500	
Data validation memorandum	1	$4,380	
Subtask Total		$21,880	3/31/2024

Subtask E2.4 Physical Habitat Monitoring

Results from physical habitat monitoring at 17 stations that are uploaded to Ecology's data management system	1	$65,750	
Subtask Total		$65,750	3/31/2024

Subtask E2.5 Biological Monitoring

Laboratory results from macroinvertebrate sample analysis for 17 stations entered into the Puget Sound Stream Benthos database or EIM	1	$15,050	
Subtask Total		$15,050	3/31/2024

Subtask E2.6 Water Year Data Summary Report

Draft data summary report	1	$22,200	6/30/2024

Final data summary report	1	$5,540	9/30/2024
Subtask Total		$27,740	
Subtask E2.7 Technical Advisory Committee Coordination			
King County presentation on hydrologic data and report review	1	$3,597.34	
Meeting notes documenting discussion items and consensus decisions from the technical advisory committee.	2	$3,800	
Subtask Total		$7,397.34	6/30/2024
Subtask E2.8 Project Management			
Monthly progress reports from Herrera	12	$23,040	
Annual progress reports from King County	1	$669.42	
Subtask Total		$23,709.42	12/31/2023
E2 Task Total		$374,716.88	
Task E3.0 – Water Year 2024 Study Implementation			
Subtask E3.1 Hydrologic Monitoring			
Posting of telemetered data on HIC (continual). Posting of non-telemetered data on HIC will occur every 5 weeks.	1	$45,838.90	
Equipment maintenance	1	$7,584.16	
Table with flow summary statistics for sampled storm and base flow events from 12 stations.	1	$8,310	
Subtask Total		$61,733.06	3/31/2025
Subtask E3.2 Water Quality Monitoring			
Laboratory analytical results and documentation of Herrera audits for 12 stations X 16 sampling events	16	$128,800	12/31/2024
Data validation memorandum	1	$14,300	3/31/2025
Subtask Total		$143,100	
Subtask E3.3 Biological Monitoring			
Laboratory results from macroinvertebrate sample analysis for 17 stations entered into the Puget Sound Stream Benthos database or EIM	1	$15,050	
Subtask Total		$15,050	3/31/2025
Subtask E3.4 Water Year Data Summary Report			

Draft data summary report	1	$22,800	6/30/2025
Final data summary report	1	$5,700	9/30/2025
Subtask Total		$28,500	
Subtask E3.5 Technical Advisory Committee Coordination			
King County presentation on hydrologic data and report review	1	$3,705.26	
Meeting notes documenting discussion items and consensus decisions from the technical advisory committee.	2	$3,800	
Subtask Total		$7,505.26	6/30/2025
Subtask E3.6 Project Management			
Monthly progress reports from Herrera	12	$23,640	
Annual progress reports from King County	1	$861.88	
Subtask Total		$24,501.88	9/31/2024
E3 Task Total		$280,390.21	
Task E4.0 – Trend Analysis Report: Water Years 2016 – 2023			
Draft data analysis report	1	$35,000	12/31/2024
Final data analysis report	1	$7,000	3/31/2024
Stormwater Work Group and Conference Presentations	2	$3,400	3/31/2024
Fact Sheet	1	$1,160	3/31/2024
E4 Task Total		$46,560	
Task E5.0 – Pond Retrofit Effectiveness Monitoring			
Spreadsheet Models and WWHM models to predict pond outlet discharge	1	$8,000.00	6/30/2022
Inlet discharge estimates for ponds through the end of WY2022	1	$8,500.00	12/31/2022
Inlet discharge estimates for ponds through the end of WY2023	1	$8,500.00	12/31/2023
Draft effectiveness monitoring report	1	$13,840	1/31/2024
Final effectiveness monitoring report	1	$4,000	2/28/2024
Fact Sheet	1	$1,160	3/30/2024
E5 Task Total		$44,000.00	
Project Total		$990,724.48	