DEPARTMENT OF
ECOLOGY
State of Washington

AMENDMENT NO. 7

TO

Contract 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 City of Redmond, hereinafter referred to as "CITY" or "CONTRACTOR."

WHEREAS, the original Contract No. C1500059 provided funding for a pilot street sweeping effectiveness study as a task in the larger monitoring program. The City of Redmond secured other funds to repeat the street sweeping study in another subbasin for WY2023 and WY2024. Additional funds are needed to continue sampling and analyzing for a novel chemical recently discovered to contaminate stormwater that were added to this street sweeping study under Task E2 in Amendment No. 6.

WHEREAS, this amendment extends sampling and analyzing data for water chemistry parameters in an already existing street sweeping study effort being conducted by the City of Redmond. Results and findings will be combined with other data and reporting that is planned under this contract's Task E2 and E6.

IT IS MUTUALLY AGREED the Agreement is amended as follows:

1) The total budget for covered work in this amendment will increase the Agreement by $70,050.

2) The Scope of Work is amended to reflect revisions to existing deliverables:

   a. Total cost for Deliverable E6.4 will increase by $1,280 for a total of $2,150. Deliverable E6.4 is amended to read, new text is underlined:

      Deliverable 6.4 Analytical data uploaded to the Environmental Information Management (EIM) database <u>for WY2023 and WY2024</u>. Target date of ~~5/30/3023~~ <u>12/31/2024</u>.

   b. Deliverable E6.6 is amended to read, new text is underlined:

      Deliverable E6.6 Fact sheet for interim analysis of the PAHs and 6PPD-quinone for WY 2023<u> and WY2024</u> Data Summary Report under Task E2. Target date of ~~5/30/2022~~ <u>12/31/2024</u>.

   c. Task E6.0 is amended to add the following background text:

      To further evaluate the effectiveness of street sweeping for improving water quality, the City obtained grant funding from King County Wastewater Treatment Division (WTD) to progressively increase street sweeping in the Tosh Creek watershed. Using this funding, City staff are sweeping all public roads (3.54 miles) in the Tosh Creek watershed within Redmond city limits one time per month from October 2022 through September 2023, and two times per month from October 2023 through September 2024. This is in addition to the regularly scheduled quarterly street sweeping.

      At the same time, Herrera has performed supplemental sampling and analysis for the RPWS to evaluate whether the increased frequency of street sweeping is effective at removing other pollutants of concern that are associated with roadway runoff. Specifically, using Ecology proviso funds, the City is collecting samples for evaluating concentrations of 6PPD-quinone (6PPD-q) and polycyclic aromatic hydrocarbons (PAHs) during the routine water quality monitoring that is conducted for the RPWS.

3) The Scope of Work is amended to reflect a new task E7.0 added by this amendment to Appendix E to continue monitoring and reporting of the additional novel chemical from the Q4 of WY2023 through all of WY2024:

   Task E7.0 – Continuation of Street Sweeping Chemical Analysis through WY2024

   Street sweeping impact monitoring was conducted over the first three quarters of WY 2023 (October 1, 2022 through June 30, 2023) pursuant to Amendment No. 6 to Contract No. C1500059 between Ecology and the City . This scope of work further Aamendment No. 7 of this contract to extends the supplemental sampling and analysis through the end of WY 2024. It also includes the following additional activities related to this monitoring:

   - Preparation of a data validation memorandum and trend analysis report
   - Presentation of study results at a local or regional conference
   - Budget adjustment for previous laboratory analytical services

   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 section.

Under this task, the Project Team will implement required monitoring activities identified in Addendum 1 to the Quality Assurance Project Plan for the RPWS over the final quarter of water year 2023 and all of water year 2024. 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 E7.1 – 4Q WY2023 and WY2024 Street Sweeping Sample Collection and Analysis

Under this task, the supplemental sampling and analysis for 6PPD-Q and PAHs will occur from the fourth quarter of WY 2023 through the end of WY 2024 (July 1, 2023, through September 31, 2024) in the Tosh Creek watershed (an Application watershed) and the Country Creek watershed (a Control watershed). In these watersheds, the additional sampling and analysis will specifically occur at the following stations located at the creek mouth and mid-watershed:

- Tosh-Mouth (TOSMO)
- Tosh-Mid (TOSMI)
- Country-Mouth (COUMO)
- Country-Mid (COUMI)

The locations of these stations are shown in Figures 4 and 7 of the quality assurance project plan (QAPP) that was prepared for the RPWS (Herrera 2015).

Up to three grab samples will be collected during storm events at each station per quarter. In addition, one grab sample will be collected during a base flow event at each station per quarter. Given the specified monitoring period identified above spans 5 quarters, this will nominally result in sample collection from each station up to 20 events (4 events per quarter x 5 quarters). One additional sample will be collected during either a storm or base flow event each quarter to serve as a field duplicate. The anticipated total number of samples to be collected under this subtask is summarized below:

Stations	Storm Event Samples Per Quarter	Base Flow Event Samples Per Quarter	Regular Samples per Quarter	Field Duplicates Samples per Quarter	Samples per Quarter	Number of Quarters	Total Number of Samples
4	3	1	16	1	17	5	85

In connection with this supplemental sampling and analysis, the following activities will be performed:

- Weather tracking and go/no go decision coordination
- Mobilization of field crews for sampling during the event
- Delivery and shipment of samples to the laboratory after the event
- Auditing of laboratory analytical results for quality assurance / quality control (QA/QC) purposes within seven days of their receipt

Assumptions

- The supplemental sampling for 6PPD-q and PAHs will be performed in connection with routine sampling for the RPWS.
- 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 20 grab samples from each station over the water year.

Deliverables

- Laboratory analytical results from up to 20 sampling events with documentation from the associated QA/QC audits.

Subtask E7.2 – Study Reporting

Following completion of the supplemental sampling and analysis at the end of WY 2024, Herrera's Data Quality Assurance Officer will provide an independent review of the laboratory quality control (QC) data from each sampling event based on the method quality objectives (MQOs) that have been identified for the study (Herrera 2022). The results will be presented in a data validation memorandum that will be included as an appendix to the trend analysis report for the study (see description below). The data validation memorandum will summarize quality control results, identify when data quality objectives were not met, and discuss the resulting limitations (if any) on the use or interpretation of the data.

Following preparation of the data validation report, Herrera will prepare a trend analysis report for the study. This report will summarize the compiled data for 6PPD-q and PAHs (WY 2023 – 2024) and summarize results from statistical trend analyses that will be performed on these data to assess potential benefits from the increase in street sweeping frequency. The statistical trend analyses will follow procedures that are identified in the QAPP for the RPWS. This report will be written to satisfy both the City's reporting obligations related to the King County WTD grant funding and Ecology's 6PPD-Q research funding described above. The King County WTD grant funding will be used for the cost of the trend analysis report.

A draft of the trend analysis report will be prepared for review by Ecology, King County, and the technical advisory committee for the RPWS. A final version of the report will be prepared based on comments received.

Following preparation of the data validation report and concurrent with the preparation of the trend analysis report, Herrera will upload all the compiled data for 6PPD-q and PAHs to Ecology's Environmental Information Management (EIM) database. The uploaded data will include any necessary quality assurance flags that were identified through the independent review of the laboratory QC data as documented in the data validation memorandum.

The Project Team will present findings from the study at a local or regional conference (e.g., Washington Stormwater Center's Municon, Pacific Northwest Clean Water Association Annual Conference, or American Public Works Association's Spring or Fall Conference). A PowerPoint presentation will be created for the conference that provides a summary of the study's experimental design, compiled 6PPD-q and PAHs data, and results from the statistical trend analyses.

Assumptions

- The data summary report identified above will 10 to 20 pages in length include tables, figures, and appendices (excluding the appendix for the data validation memorandum).
- The factsheet identified above will be 2 to 4 pages in length including figures and tables.

Deliverables

- Data validation memorandum
- Preliminary draft, revised draft, and final trend analysis report

- Upload of compiled 6PPD-q and PAHs data to the EIM. The EIM upload file will be emailed to the SAM Coordinator.
- Preliminary draft, revised draft, and final factsheet
- Conference presentation

Subtask E7.3 - Budget adjustment for previous laboratory analytical services

Due to a miscommunication between Herrera and the two laboratories providing analytical services for the study (Onsite for PAHs; SGS AXYS Analytical Services for 6PPD-q); the cost for analyzing 6PPD-q was incorrectly represented in the budget for previous sampling that was conducted over the first three quarters of WY 2023 (Amendment No. 6). The cost included in the budget for this parameter was $305 per sample whereas the actual cost is $435 per sample. This subtask provides additional budget to make up the difference ($130) between these two costs for laboratory services. The full cost for this adjustment is estimated to be $6,500 based on the 50 samples for 6PPD-q that have been analyzed. The table below summarizes the following information for these samples: laboratory reference number, sample collection date, event type (e.g., storm versus base), the number of samples collected per event (regular and field duplicate), and cost difference for analytical services.

Laboratory Reference No.	Sample Collection Date	Event Type	No. Regular Samples Collected	No. Field Duplicates Collected	Total No. Samples Collected	6PPD-Q at $305	6PPD-Q at $435	Difference
2210-222	10/21/2022	Storm	4		4	$1,220	$1,740	$520
2210-298	10/26/2022	Base	4		4	$1,220	$1,740	$520
2211-296	11/22/2022	Storm	4		4	$1,220	$1,740	$520
2211-351	11/29/2022	Storm	4		4	$1,220	$1,740	$520
2301-049	1/8/2023	Storm	4		4	$1,220	$1,740	$520
2301-084	1/12/2023	Storm	4		4	$1,220	$1,740	$520
2301-173	1/20/2023	Base	4	1	5	$1,525	$2,175	$650
2302-068	2/7/2023	Storm	4		4	$1,220	$1,740	$520
2304-066	4/6/2023	Storm	4		4	$1,525	$2,175	$650
2304-245	4/20/2023	Storm	4	1	5	$1,220	$1,740	$520
2304-315	4/27/2023	Base	4		4	$1,525	$2,175	$650
2305-051	5/5/2023	Storm	4		4	$1,220	$1,740	$520
Total:			48	2	50	$15,250	$21,750	$6,500

Deliverables

- Documentation of budget shortfall for previous laboratory analytical services

Task/Deliverable	Quantity	Total by Deliverable	Target Dates
Deliverable E7.1 4Q WY2023 and WY2024 Street Sweeping Sample Collection and Analysis Unverified lab data	20	$59,600	9/31/2024
Deliverable E7.2a Data validation memo	1	$2,070	11/30/2024
Deliverable E7.2b Conference presentation	1	$600	6/30/2025
Deliverable E7.3 Documentation of budget shortfall for previous laboratory analytical services	1	$6,500	8/31/2023
E7 Task Total		$68,770	

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

_____
Heather R. Bartlett

_____
Deputy Director

City of Redmond

By:

_____
Signature Date

_____
Print Name

_____
Title