



DEPARTMENT OF
ECOLOGY
State of Washington

AMENDMENT NO.1

TO

CONTRACT NO. 1500059

BETWEEN THE

STATE OF WASHINGTON DEPARTMENT OF ECOLOGY

AND

THE 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 "REDMOND" or "CONTRACTOR".

IT IS MUTUALLY AGREED the agreement is amended as follows:

- 1) The project end date is changed from December 31st, 2015 to July 31st, 2018.
- 2) Compensation is increased for the additional tasks added by this amendment. The total amount is changed from \$96,760 to \$362,440, by \$265,680.
- 3) Appendix A- Statement of Work is amended to add Tasks 6 - 11.
- 4) Deletions are indicated by strikethrough (~~strikethrough~~) and additions are underlined.

APPENDIX A

STATEMENT OF WORK

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

- Task 1.0 - Literature Review
- Task 2.0 - Experimental Design
- Task 3.0 - Quality Assurance Project Plan
- Task 4.0 - Steering Committee Coordination
- Task 5.0 - Project Management/Contract Administration

Work on these tasks will be performed by REDMOND with assistance from King County and a consultant to be identified at a later date. REDMOND, King County, and the consultant are hereafter referred to as the "Project Team".

Task 1.0 – Literature Review

Under this task, the Project Team will conduct a literature review to obtain information on past studies that have been implemented to achieve similar objectives. In connection with this review, the Project Team will conduct search engine queries of publically available studies on the internet, as well as searches on the following subscription based databases: Web of Science, ScienceDirect, and ProQuest. The specific objective of this literature review will be to identify measurement parameters from these studies that appear useful for quantifying long-term changes in stream health in response to increased watershed urbanization and/or the implementation of stormwater controls. Efforts will be made to identify parameters in all the following categories: biological, physical habitat, sediment quality, water quality, and hydrology. For each parameter identified, the duration and frequency of measurement, and the data analysis methodology will also be documented.

Results from this review will be summarized in a report that will contain the following information:

- Description of the methods used for the literature review
- Annotated bibliography for all studies that were identified
- Table summarizing parameters that were used in each study
- Recommended parameters for REDMOND's study.

This report will be provided to the Steering Committee to inform the development of the experimental design and QAPP in Task 2.0 and Task 3.0, respectively.

Deliverables

D1.1a: The Project Team will submit two electronic copies (PDF and Word) of the report for the literature review to the Steering Committee within two months of receiving notice to proceed on the project.

- Target Completion Date: December 31, 2014

Task 2.0 – Experimental Design

The Project Team will develop an experimental design for the study that will be incorporated into the QAPP to be prepared under Task 3.0. The experimental design will identify the following information:

- Specific targets for improved receiving water conditions following implementation of stormwater Best Management Practices (BMPs)
- Parameters that should be used for measuring progress towards these targets in the following categories: biological, physical habitat, sediment quality, water quality, and hydrology
- Location, frequency and duration of measurement for each parameter.
- Method for analyzing the data for each parameter.

The experimental design identified in REDMOND's original proposal to the Regional Stormwater Monitoring Program (RSMP) for a "Regional Stormwater Monitoring Program Effectiveness Study" will provide the starting point for work under this task. This experimental design identified monitoring to quantify improvements in receiving water conditions based on routine and continuous measurements of various indicators of stream health. The study also utilized a "paired watershed" experimental design that will involve the collection of these measurements in seven watersheds categorized as follows:

- Three "Application" watersheds with the wadable lowland streams that are moderately impacted by urbanization and prioritized for rehabilitation efforts.
- Two "Reference" watersheds with relatively pristine wadable lowland streams that do not require rehabilitation.
- Two "Control" watersheds with significantly impacted wadable lowland streams (by urbanization) that are not currently targeted for rehabilitation pursuant to the WMP.

REDMOND's original proposal to the RSMP also included monitoring at "roving" stations that would be used to quantify the effectiveness of stormwater BMPs to be constructed in Application watersheds. These roving stations were to be moved from one year to the next once the performance of a stormwater BMP is verified and a new BMP is constructed.

In order to guide the development of the experimental design, the power of trend tests to be performed for this study will also be investigated under this task using Monte Carlo simulations. These simulations will specifically investigate the power of Spearman's rho tests for detecting significant trends in time series data given: 1) the desired significance level, 2) magnitude of the trend, 3) sample size, and 4) amount of variation within existing datasets. It is anticipated that the simulations will be performed on synthetic time series data sets that will be developed for a subset of three to five parameters including: benthic index of biotic integrity (B-IBI) scores, total suspended solids, and total zinc.

In connection with the work identified in Task 4.0, the Project Team will coordinate with the Steering Committee to obtain their technical input during the development of the experimental design.

Assumptions

- A draft of the experimental design will be prepared for Steering Committee review. The Steering Committee review will be performed within 15 working days. Comments from the review will be provided using a standardized template to be developed by the Project Team.

Deliverables

D2.a: The Project Team will submit an two electronic copies (PDF and Word) of the draft experimental design to the Steering Committee for review within four months of receiving notice to proceed on the project.

- Target Completion Date: March 31, 2015

Task 3.0 – QAPP Production

Incorporating the experimental design developed under Task 2.0, the Project Team will prepare a QAPP in accordance with Ecology's Guidelines for Preparing Quality Assurance Project Plans for Environmental Studies (Ecology Publication No. 01-03-003) and Technical Guidance for Assessing the Quality of Aquatic Environments (Ecology Publication No. 91-78). The QAPP will specifically include all of the following information:

- **Background** – An explanation of why the project is needed.
- **Project Description** – Project goals and objectives, and the information required to meet the objectives.
- **Organization and Schedule** – Project roles and responsibilities, and the schedule for completing the work.
- **Quality Objectives** – Performance (or acceptance) thresholds for collected data.
- **Sampling Process Design** – The sampling process design for the study, including sample types, monitoring locations, and sampling frequency.
- **Sampling Procedures** – A detailed description of sampling procedures and associated equipment requirements.
- **Measurement Procedures** – Laboratory procedures that will be performed on collected samples.
- **Quality Control** – Quality Control (QC) requirements for both laboratory and field measurements.
- **Data Management Procedures** – How data will be managed from field or laboratory recording to final use and archiving.
- **Audits and Reports** – The process that will be followed to ensure this QAPP is being implemented correctly and the quality of the data is acceptable.
- **Data Verification and Validation** – The data evaluation process, including the steps required for verification, validation, and data quality assessment.
- **Data Quality (Usability) Assessment** – The procedures that will be used to determine if collected data are of the right type, quality, and quantity to meet project objectives.

In connection with the work identified in Task 4.0, the Project Team will coordinate with the Steering Committee to obtain their technical input during the development of the QAPP.

Assumptions

- An initial draft of the QAPP will be prepared for Steering Committee review, a revised draft will then be prepared for ECOLOGY review. All reviews will be performed within 15 working days. Comments from each review will be provided using a standardized template to be developed by the Project Team.

Deliverables

D3.a: The Project Team will submit two electronic copies (PDF and Word) of the initial draft of the QAPP to the Steering Committee for review within six months of receiving notice to proceed on the project.

- Target Completion Date: May 30, 2015

D3.b: The Project Team will submit two electronic copies (PDF and Word) of the revised draft of the QAPP to ECOLOGY for review within eight months of receiving notice to proceed on the project.

- Target Completion Date: July 31, 2015

D3.c: The Project Team will submit two electronic copies (PDF and Word) of the finalized version of the QAPP to all reviewing parties within ten months of receiving notice to proceed on the project.

- Target Completion Date: September 30, 2015

Task 4.0 – Steering Committee Coordination

The Steering Committee for this study currently includes representation from the following agencies/individuals:

City of Seattle

Doug Hutchinson

King County

Jeff Burkey

Gino Lucchetti

Kitsap County

Chris May

U.S. Environmental Protection Agency

Dino Marshalonis

U.S. Geological Survey

Rich Dinicola

Chris Konrad

Rich Sheilbey

Washington State Department of Ecology

Brandi Lubliner

Ed O'Brien

Mindy Roberts

Under this task, the Project Team will coordinate the following activities to obtain input from the Steering Committee during the development of the experimental design and QAPP described in Tasks 2 and Task 3, respectively:

- Schedule and facilitate up to ten meetings with the Project Team and Steering Committee to discuss and refine the study design and monitoring procedures.
- Schedule and facilitate a site visit with the Steering Committee to inspect monitoring stations that have been selected for the study.
- Coordinate the Steering Committee's review of the draft experimental design and QAPP.

Deliverables

D4.a: Meeting notes documenting discussion items and consensus decisions from the Steering Committee.

- Target Completion Date: September 30, 2015

Task 5.0 – Project Management/Contract Administration

REDMOND will be responsible for ongoing contract administration of this project, including preparing invoices and progress reports, as well as coordination of all work efforts with the designated ECOLOGY point of contact and the Project Team. REDMOND's project manager (Andy Rheume) will have phone and e-mail contact with ECOLOGY on an as-needed basis.

Task 6 – Purchase Initial Hydrologic and Continuous Water Quality Monitoring Equipment: \$15,000

This task involves solicitation of bids from vendors, managing purchase request, and delivery of equipment to King County for field installation (Task 7).

Deliverables:

D6.1: Electronic copy of paid invoices for equipment
- Target Completion Date: October 1, 2015

Task 7 – King County Continuous Monitoring Equipment Installation: \$58,144

WLR technical staff (Funke, Grant, Smith or Miller) will install initial monitoring equipment at 14 stations for measuring continuous flow and water quality parameters (temperature and conductivity) in accordance with the Project QAPP by October 1st, 2015. Telemetered monitoring equipment will also be installed at some locations depending on site suitability and cell phone reception. Equipment will be purchased by City of Redmond or their contractor.

Deliverables:

D 7.1: Photos of installations
- Target Completion Date: January 1, 2016

Task 8 – King County Monitoring and Maintenance: \$161,736

WLRD gaging specialists (Funke, Grant, Smith or Miller) will initiate flow and water quality monitoring equipment and maintain equipment to ensure proper operation. Monitoring data will be telemetered where cell phone coverage is available and the installation feasible. Telemetered data will be automatically processed and available for download on King County's Hydrological Information Center (HIC) website, a public website. Non-telemetered data will be processed within seven days after download, and then will be available for download on the HIC website. The County will prepare an electronic data file annually of all project data for the City of Redmond upon request.

Deliverables:

D 8.1: Posting of telemetered data on HIC (continual)
D8.2: Posting of non-telemetered data on HIC will occur every 5 weeks
D8.3: Annual Electronic data file of monitoring data by January 31st for prior calendar year (end-of-year 2015, end-of-year 2016, end-of-year 2017, end-of- project)

Target Completion Date: From October 1, 2015 through July 31, 2018

Task 9 – King County Data Quality Assurance: \$23,870

WLR gaging specialist (Funke) will regularly review flow and water quality monitoring data for quality assurance (QA) purposes and conduct an annual QA review of monitoring data. Regular review of telemetered data will include a daily (work week) check that the station is transmitting reasonable data. After each site visit, the result of the discharge measurement will be plotted and the rating curve verified. Observations of water level and water quality will be compared to the recorded values. Annual QA review includes: an examination of the continuous record for

completeness; charting average, maximum and minimum daily values; comparison with a nearby station; review of discharge measurements, review of rating curve and data workup.

Deliverables:

D9.1: Annual QA report by January 31st for prior water year (2015, 2016, 2017, end-of- project)

Target Completion Date: From October 1, 2015 through July 31, 2018

Task 10 – King County Participation in Project Meetings: \$3,493

The WLR gaging specialist (Funke) and Agreement Administrator (Colton) will attend up to three meetings a year for troubleshooting and/or project status reports. Meetings will be up to two hours in length.

Deliverables:

D10.1: Meeting participation evident in meeting agenda and summary.

Target Completion Date: From October 1, 2015 through July 31, 2018

Task 11 – King County Project Management: \$3,437

The Agreement Administrator (Colton) will act as project manager for services to be provided pursuant to the IAA. Task 1 includes coordination of King County staff, budget management, progress reports (annual end-of-year 2015-2017 and end-of-Project 2018) and participation in Project Team meetings for troubleshooting and status check purposes.

Deliverables:

D11.1: Annual progress reports by January 31st for prior calendar year (end-of-year 2015, end-of-year 2016, end-of-year 2017, end-of- project)

Target Completion Date: From October 1, 2015 through July 31, 2018

Budget

After REDMOND provides all project deliverables and ECOLOGY ~~excepts~~ approves those deliverables, REDMOND will invoice ECOLOGY for costs and expenses ~~not to exceed \$96,760.~~ for the following amounts:

- Task 1 through Task 5 not to exceed \$96,760.
- Task 6 through Task 11 not to exceed \$265,680.

The project total costs are \$362,440.

All other terms and conditions of the original Agreement including any 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 when executed by ECOLOGY.

IN WITNESS WHEREOF: the parties hereto, having read this Amendment in its entirety, including all attachments, do agree in each and every particular and have thus set their hands hereunto.

State of Washington
Department of Ecology
By

City of Redmond
By

Polly Zehm
Signature Date
10/19/15

Polly Zehm

Deputy Director

John Marchione
Signature Date
9/29/15

John Marchione
Print Name:

Mayor
Title:

Approved as to form only.
Assistant Attorney General