CityofRedmond
WASHINGTON

Supplemental Agreement Number 02

Original Agreement Number: 8256	Organization and Address: OTAK, Inc. 2721 Wetmore Avenue Suite 402 Everett, WA 98201 Phone: 425-739-4209
Project Number: 20021607	Execution Date: Completion Date: June 30, 2022
Project Title: NE 40th St Stormwater Trunkline Extension	New Maximum Amount Payable: $ 2,841,688

Description of Work

Supplement #2 provides additional services for final design of the NE 40th Street Stormwater Treatment Retrofit located at the Sound Transit – Redmond Technology Station (RTS) site at the southwest corner of 156th Ave NE and NE 40th Street. This Supplement also provides additional services for monitoring and modeling of the NE 40th Street Trunk line outfall to Lake Sammamish.

The Local Agency of City of Redmond desires to supplement the agreement entered into with OTAK, Inc. and executed on October 31, 2016 and identified as Agreement No. 8256

All provisions in the basic agreement remain in effect except as expressly modified by this supplement.

The changes to the agreement are described as follows:

I

Section 1, SCOPE OF WORK, is hereby changed to read:
See Exhibit A-2

II

Section IV, TIME FOR BEGINNING AND COMPLETION, is amended to change the date for completion of the work to read: June 30, 2022

III

Section V, PAYMENT, shall be amended as follows:
See Exhibit D-2 and E-2

as set forth in the attached Exhibits, and by this reference made a part of this supplement.

If you concur with this supplement and agree to the changes as stated above, please sign in the appropriate spaces below and return to this office for final action.

By: Russell Gaston, Principal

Consultant Signature

By: Malisa Files, Finance Director

Approving Authority Signature

Date

DOT Form 140-063 EF
Revised 9/2005

Exhibit A-2
Supplement #2
Scope of Work

NE 40th Street Stormwater Trunkline Extension Project
April 10, 2019

Otak Project No. 32793

Otak completed design and construction management services under the original contract scope and Supplement #1. The contract amount has been fully utilized for work completed and the previous tasks are closed as listed below.

Supplement #2 provides additional services for final design of the Water Quality Facility and Pump Station ("NE 40th Street Stormwater Treatment Retrofit") located at the Sound Transit – Redmond Technology Station (RTS) site at the southwest corner of 156th Ave NE and NE 40th Street. This Supplement also provides additional services for monitoring and modeling of the NE 40th Street Trunkline outfall to Lake Sammamish.

PROJECT SCHEDULE

Authorization to proceed is expected in May 2019. The first phase of the work will be assessing alternatives for the retrofit facility and to select the preferred configuration to be advanced into final design. Once the preferred facility alternative is selected and incorporated into the current site plan, the design will be advanced from 60% to 90% to allow for submittal of Department of Ecology (Ecology) grant applications in October 2019. Once the applications have been submitted, the project will pause until February 2020, when Ecology will announce the results of the grant review process.

Assuming successful award of an Ecology grant, the project will begin again in March 2020, with an as-built survey of the site that is currently under construction by Kiewit-Hoffman. That survey will be completed and ready in July 2020 when Ecology funds will be available to support bringing the project from 90% design to final design and bidding in February 2021.

This schedule shall be equitably adjusted as the project progresses, allowing for changes in scope or for delays beyond consultant control.

Task 1 – 13 (Closed)

Tasks 1 through 13 are complete and are closed.

11241 Willows Road NE, Suite 200 Redmond, WA 98052 ▪ Phone (425)822-4446 Fax (425)827-9577 **otak.com**

Task 14 Phase 2 Project Management (New)

In this Task, Otak will provide project administration and coordination with subconsultants and City of Redmond (Redmond) for Tasks 15, 16, and 17 below. Otak will prepare monthly progress reports and invoices that include sub-consultant invoices from BHC and GeoEngineers. BHC will include any of their subconsultants or vendors with their invoice to Otak. Project management and coordination includes work planning, preparation of status reports and invoices, and participating in regular communication through email and phone calls. Project design coordination, deliverable review meetings, and quality assurance and control will be provided under Task 15 and 17.

Task 14 Assumptions:

1. For Task 15 Final Design for NE 40th Street Stormwater Treatment Retrofit, Otak project management is anticipated to require approximately 4 hours per month for the project engineer (Civil Engineer IX), 2 hours per month for a project coordinator, and 2 hours per month for the Principal in charge (Sr. PIC). This task work is assumed to be provided from May 2019 thru November 2019 and July 2020 through February 2021, allowing for a pause in the project while awaiting the outcome of the Ecology Grant submittal (15 months). During the pauses in work, Otak will not provide any project tracking or reporting. Additional time has been added for the principal-in-charge (Sr. PIC) and project engineer (Civil Engineer IX) to provide status updates and coordination with the City on schedule and City input on design criteria.
2. For Task 17 NE 40th Stormwater Trunk Outfall Monitoring and Modeling, Otak project management is anticipated to require approximately 8 hours per year for the project engineer and 4 hours a year for the project administrative assistant, for 2019, 2020, 2021, 2022, 2023. Additional time has been added for a designer (Engineering Designer V) to provide status updates on monitoring work and to provide coordination with the City for scheduling of City work.

Deliverables:

1. Monthly progress report and contract summary provided with invoices including updated schedule in Project format.
2. Bi-weekly status report via email and phone call with City during active work periods.

Task 15 – Final Design for NE 40th Street Stormwater Treatment Retrofit (New)

Redmond has requested Otak to finalize the design of the NE 40th Street Stormwater Treatment Retrofit. Otak, with BHC as a subconsultant, previously provided design of the water quality facility and pump station that was to be constructed by the design-build Contractor that is constructing the RTC. Now, the City has determined that this project will be advanced as a bid-build project with a standard WSDOT/APWA style construction contract.

This scope of work details the tasks needed to address City comments and requested design changes, provide grant and permitting support, and to prepare final bid documents, and provide advertisement and bid support.

Otak will lead the site civil design and will incorporate the pump station design to be provided by BHC, a subconsultant.

Task 15.1 – Site Civil Final Design

Otak will prepare Site Civil Design for the following subtasks and will incorporate the pump station design prepared by BHC into the deliverables listed below.

Task 15.1.1 – Coordination and Meetings

It is anticipated that several design submittal and coordination meetings will be held during the design period to review progress, discuss coordination with City of Redmond pump station requirements and the current development team of the Redmond Technology Station property, and discuss review comments and responses.

All design submittal and coordination meetings are assumed to be taking place at Redmond City Hall and will last 2 hours.

Otak will prepare for and participate in ten (10) formal coordination meetings with the City and/or BHC. Otak will provide meeting summary notes and action items for all meetings.

Task 15.1.1 Deliverables:

1. Meeting minutes.

Task 15.1.2 – Alternatives Analysis

A) Value Engineering

Otak will analyze the cost estimate prepared under a previous task to identify the highest cost elements of the design that could be revised to reduce the construction cost. Otak will develop markups on the site plan and a revised cost estimate for a revised treatment facility and conveyance routing configuration. Cost information will be solicited from manufacturers for proprietary treatment options with a reduced footprint. Two meetings will be held with the City to review the cost estimate and value engineering opportunities.

B) Alternatives Comparison

Otak will develop 2 alternative configurations for the water quality treatment facility. It is assumed that the maintenance road alignment and site plan developed previously will not change. The alternatives will consider revising the following elements of the previous design:

- Reduced footprint of the Filterra Bioscape material by reducing the contributing area to retrofit only.
- Revised Filterra Bioscape Design to allow for precast boxes to contain the treatment media.
- Assess if design and conveyance routing should be modified to divert Sound Transit's new light rail station drainage around the facility or if the facility should be designed to accommodate the flows from the station.
- Revised vertical profile of the maintenance road to reduce required retaining walls to tie into existing grades.
- Revised piping to intercept NE 40th collection system and direct it into the water quality treatment facility.
- Revised retaining wall type to reduce construction costs.

Task 15.1.2 Deliverables:

1. Concept Sketches for two alternatives (plan view and typical details).
2. Cost Estimates for two alternatives.

Task 15.1.3 - Site Civil 60% Design Update

Otak will revise the previously prepared construction plans, including incorporating City comments on the previous design submittal. Otak will review and provide a written response to each comment for clarification and concurrence.

Otak will update the Hydrologic and Hydraulic modeling to reflect the following changes from the previous (2018) design submittal:

- Service area includes SR520 subbasin.
- Service area includes NE 40th Street subbasin.
- Service area does not include the future development area of the Sound Transit property.

The documentation for the hydrologic and hydraulic modeling will be prepared as the Design Report under Task 15.1.5.B.

Otak will also advance the following site elements to a 60% Design level that were not developed to this level for the previous design submittal:

- Bioscape Water Quality Facility including flow dispersion into treatment media and underdrain piping (currently at 30%)
- Temporary Construction Access Road from 156th Ave NE (new)
- Staging (new)
- Traffic Control (new)
- Pump Station discharge piping downstream of the isolation valve vault (currently at 5%)
- Structural Retaining Walls (currently at 60%, need to revise footings to avoid disturbance of bus loop)
- Revised Architectural finish on walls (currently at 5%)

Otak will also review the following elements for coordination with the new design elements and revised hydrologic and hydraulic analysis

- Storm conveyance plan and profile (currently at 60%)
- Flow Splitter Structure (currently at 60%)
- Swirl Concentrator Manhole (currently at 60%)
- Temporary Erosion and Sediment Control and Demolition (currently at 60%)
- Maintenance Access Road (currently at 60%)
- Landscaping and Irrigation (currently at 60%)

Task 15.1.3 Deliverables:

1. 60 percent Plans, Special Provisions, and Opinion of Probable Cost.
2. Response to City review comments.

Task 15.1.3 Assumptions:

1. This effort assumes that the bioscape facility configuration prepared under previous design work will be carried forward with a reduced footprint and shorter retaining walls to contain the bioscape material. The alignment of the retaining walls will be adjusted to fit the reduced facility footprint.

2. If the preferred alternative selected under Task 15.1.2 includes revising the bioscape design to include pre-cast concrete media boxes and/or major re-design of the conveyance piping to accomodatebypass of the Sound Transit treatment facility outfall, additional services will be necessary to further revise the current design. Any revisions requested by the City for the maintenance road alignment, pump station location, and maintenance access locations will also require additional work. If additional design services are requested, an amendment will be prepared to propose authorization of contingency.

Task 15.1.4 - Prepare 90 Percent Design

Plans will be developed to the following standards, unless otherwise specified by the City of Redmond:

- City of Redmond Standard Specifications and Details (2019 or most recent version).
- City of Redmond Record Drawing Standards (Most recent version).
- WSDOT Standard Plans (Most recent version).
- WSDOT Standard Specifications (2018 version, incorporating most recent addenda).

Further details and assumptions for the stages for this sub-task include:

A) Project Plans prepared by Otak includes:

1. Staging (1 sheet)
2. TESC and Demo– including new temporary construction entrance from 156th Ave NE (2 sheets)
3. Traffic Control (1 sheet)
4. Site Grading and Access – including new construction entrance from 156th Ave NE (4 sheets)
5. Paving Plan and Details (2 sheets)
6. Storm
    a. Filterra Bioscape Plan, Profiles, and Sections (4 sheets)
    b. Splitter Detail (1 sheets)
    c. Swirl Concentrator Detail (1 sheets)
7. Splitter/Vault Structural (2 sheets)
8. Walls Structural (12 sheets)
9. Walls custom architectural finish (1 sheet)
10. Landscape Plans and Details (2 sheets)
11. Irrigation Plans and Details (1 sheet)

B) Opinion of Probable Cost

Otak will prepare an opinion of probable cost for civil site bid items related to the plans prepared by Otak and will incorporate pump station related costs provided by BHC into the full project construction cost estimate. Construction cost and bid quantities will be organized into standard bid items, supplemented by additional non-standard items, if necessary, and conform to a project bid schedule.

C) Project Manual

Otak will prepare Special Provisions for Division 2 through 9 of the Specifications that are related to the site civil bid items and plans. Special Provisions will be prepared based upon the 2018 Edition of the Washington State Department of Transportation Standard Specifications for Road, Bridge, and Municipal Construction and latest Amendments. Otak will work with the City to prepare the full Project Manual including advertisement and bid forms, contract, Division 1, as well as any necessary Appendices. Otak will incorporate other special provisions prepared by BHC, including CSI format for the pump station elements.

The City will provide the current City standard Bid Forms, Contract Provisions, and Special Provisions

Division 1 to Otak in electronic format.

Task 15.1.4 Deliverables:

1. 90 percent Plans, Project Manual (specifications) and Opinion of Probable Cost
2. Response to City review comments

Task 15.1.5 – Permitting and Grant Support

A) SEPA Checklist Support

Otak will provide information to the City as requested for use in preparation of a SEPA Checklist including project description and earthwork quantities. The City will lead preparation of the SEPA Checklist form.

B) Design Report

Otak will prepare a Design Report in conformance with Ecology SFAP Grant Deliverable requirements based on the following outline:

1. Introduction
2. Basin Description
3. Site Description
4. Minimum Requirement (Western Washington)/Core Element (Eastern Washington) Analysis
5. Alternatives Considered
6. Design Analysis
7. Quantify the Water Quality Benefit
8. Engineer's Opinion of Probable Cost
9. Proposed Schedule
10. Attachments

The Design Report effort will begin by revising and re-arranging drainage report content prepared previously under a different task. The report will provide the technical backup for the hydrologic and hydraulic design of the preferred alternative that is advanced to 90% Design under Task 15.1.4. The Design Report will replace the previous Drainage Report as the technical documentation of the Hydrologic and Hydraulic design and demonstration of conformance with DOE retrofit requirements. It is assumed that the Design Report prepared per the Ecology outline will suffice for submittal to the City for the purposes of any necessary City construction permits and a separate drainage report will not be prepared.

C) Grant Application Support

Otak will provide information to the City as requested for use in preparation of grant applications. This is assumed to include one GIS exhibit and a project description. Otak will participate in up to two phone meetings with the City to review grant materials.

Otak will provide review of comments from granting agencies and will provide input on comment responses to the City. The City will lead the preparation of grant applications and formal responses to comments.

Task 15.1.5 Deliverables:

1. Emails with requested project information for use in the SEPA Checklist preparation.
2. Design Report in conformance with Ecology's Grant Deliverable requirements (electronic and one hard copy).
3. Emails with requested project information for use in grant applications and responses to granting agency comments.

Task 15.1.6 - As-built Survey for Design

The City will provide design drawings from Kiewit-Hoffmann for their final approved design, by May 2019. This information will be used to update the "Existing Site Plan" to support final design. Design will proceed based upon that information to 90%. The 90% design will be used for the Ecology grant submittal in October 2019. Kiewit-Hoffman's construction will complete by the end of 2019.

In February 2020, following release of Ecology's draft offer list for the 2019 grant program, Otak will proceed with as-built survey to confirm Kiewit-Hoffman's construction. As-built information available from Sound Transit will be made available by the City. Prior to advancing the 90% Plans to final, Otak will provide topographic survey and basemapping of the as-built conditions on the site. The intent is to determine the as-built elevations of the bus loop road and adjacent grades so that Otak can confirm that proposed grades will tie-in appropriately and that bid items and quantities are adequate to address all work necessary to construct the STORMWATER TREATMENT RETROFIT project after the bus loop improvements are in place. It is assumed that the constructed bus loop improvements will match closely horizontally and vertically with the basemap (by others) that was provided to Otak in the previous design phase.

Task 15.1.6 Deliverables:

1. Electronic survey spot elevations.

Task 15.1.7 – Prepare 100 Percent Design

Otak will complete the design and preparation of construction plans, specifications, and opinion of probable cost to a higher level of design completion, including incorporating the final Redmond comments. The special provisions and 90% Project Manual will be developed based on the current 2018 WSDOT Specifications with Amendments to be included in the grant submittal to Ecology. However, the project is scheduled to be advertised in 2021 and the special provisions will need to be updated to reflect any changes made in the correlating sections of the 2020 WSDOT Standard Specifications that will be issued in the future. Otak will review the 2020 Specifications and update the special provisions and Project Manual as necessary while advancing the bid package from the 90% to a 100% design level.

Otak will submit "100% Proof Set" design documents for final review and approval by the City.

Task 15.1.7 Deliverables:

1. Final Plans, Project Manual, and Opinion of Probable Cost.
2. Response to City review comments.

Task 15.1.7 Assumptions:

1. This effort assumes that the survey performed under Task 15.1.6 of the Sound Transit improvements will not identify that significant changes to the 90% design are necessary such as changing the alignment of the maintenance access road. It is assumed that only minor revisions will be necessary such as less than a six-inch adjustment of proposed spot elevations at the transition to driveway aprons. It is assumed that structures or details will not need to be revised.
2. This effort assumes that Ecology will not have comments on the 90% Design Package that require major revisions to the design or Design Report such as adjusting the contributing area that is used to size the facilities or changing the water quality treatment facility type.

Task 15.1.8 - Prepare Bid Documents

Otak will provide final bid plans and Project Manual to the City. The City will post the documents for advertisement.

Task 15.1.8 Deliverables:

1. Bid Ready contract documents including 5 sets of specifications with half-size drawings (hard copy), 5 sets of full-size drawings (hard copy), and electronic (.pdf) versions.

Task 15.1.9 - Advertisement and Bid Support Services

Otak will provide responses to bidders' questions and assistance to the City, including:

1. Support for Bid Advertisement
2. Attend bid opening
3. Respond to contractor questions
4. Interpretation of contract documents during the bidding process.
5. Preparing addenda to the bid documents.

Task 15.1.10 - Operations and Maintenance Manual

Otak will prepare an operations and maintenance manual for the NE 40th Street Stormwater Treatment Facility. Instructions will be provided for inspections and maintenance procedures for the flow splitter facility, hydrodynamic separator and Filterra Bioscape treatment facility. Otak will incorporate content provided by BHC for the pump station components.

Task 15.1.10 Deliverables:

1. Draft Operations and Maintenance Manual (one electronic)
2. Pre-Final Operations and Maintenance Manual (one electronic and one hard copy). The O&M Manual will include placeholders for content to be inserted after the project is constructed. Services to finalize the O&M during construction will be included under the optional Task 16 below.

Task 15.1.11 - Geotechnical Support Services (GeoEngineers)

GeoEngineers, Inc. (GeoEngineers), as a subconsultant to Otak, will provide the following services:

- Prepare final version of the draft geotechnical engineering report following receipt of review comments.
- Review plans and specifications prepared by Otak, Inc. for conformance with the recommendations to
- be provided in our geotechnical report.
- Review and comment on the 60 and 90 percent project documents with respect to geotechnical considerations.
- Prepare a letter summarizing our comments for each review period, as appropriate.
- Provide consultation and project management.
- Attend one meeting with the project team.

Task 15.1.11 Assumptions:

1. Otak will prepare design documents and provide them to GeoEngineers for review.

Task 15.1.11 Deliverables:

2. 60 Percent and 90 Percent Plan and Specification Review Letters.

Task 15.1 Assumptions:

- The City will coordinate with the property owner to provide access to the site as requested by Otak
- A site map has been provided by the City and Otak will review future design drawings provided by the City from the Sound Transit project. Otak will provide select as-constructed survey of the future Sound Transit bus-loop road and maintenance driveways to confirm improvements were constructed as planned but a new topographic basemap will not be prepared.
- Redmond will provide Otak with one set of written review comments marked on one set of submitted documents at the 60% and 90% design levels.

15.2 – Pump Station Final Design (BHC)

STATEMENT OF UNDERSTANDING

This Scope of Services is based on our current understanding of the City of Redmond's (City) needs and requirements for completing final design for the NE 40th Street Stormwater Treatment Retrofit(Project) to be constructed at the Sound Transit – Redmond Technology Center Station (RTS). The pump station design work for the mechanical, electrical, structural, and controls will be completed under the scope of work as part of Task 15.2 of Supplement #2 to Otak's Contract. Site civil, discharge force main, Filterra Bioscape design, drainage, access, and landscaping will be provided by Otak.

The project includes the following elements (all provided to meet current City standards):

- Duplex submersible pump station with a design capacity of 1,200 gpm with both pumps operating
- Flygt non-clog pumps
- Adjacent valve vault
- Davit arm retrieval systems
- Site lighting
- Wet well piping and appurtenances
- An above grade power and control panel.
- Telemetry and Control

The scope of services summarized below includes BHC's portion of the work necessary to complete final design, produce bid documents, and provide engineering services during bidding for the Project.

SCOPE OF SERVICES

The Scope of Services tasks are separated into five components where applicable:

1. Receivables: elements that will be provided by the City
2. Work Tasks: tasks that will be completed by the Consultant
3. Deliverables: the finished product that will be delivered to the City via electronic and hard copy
4. Assumptions: assumptions used to develop each Work Task
5. Meetings: Consultant team will work to minimize attendees at meetings, meetings with City staff will be conducted at the City's offices.

The scope of work details the tasks needed to address City comments, support alternatives analysis, prepare final bid documents, and provide advertisement and bid support. BHC will provide design for the pump station, power and control panel, valve vault, and telemetry.

Receivables:

1. Written review comments on deliverables (Otak)
2. Survey base maps for pump station vicinity (Otak)
3. Geotechnical Report for the pump station location (Otak/Geoengineers)
4. Stormwater – Design Flow Calculations (Otak)
5. Influent stormwater piping elevations (Otak)
6. Discharge force main material, diameter, length, discharge elevation, and configuration of discharge relative to the Filterra unit (Otak)

Task 15.2.1 Project Management and Design Meetings (BHC)

Project Management

Work Tasks:

1. Coordinate with Otak and City staff on regular status reports, status meetings, telephone communication, and e-mail during the project.
2. Provide input on project schedule.
3. Prepare monthly progress reports and monthly invoices, including financial status and schedule progress using Earned Value Management (if requested) to Otak.
4. Coordinate deliverables, standards, schedule with Otak.

Deliverables:

1. Monthly status reports with invoices.

Assumptions:

1. This task work is assumed to be provided from May 2019 thru November 2019 and July 2020 through February 2021, allowing for a pause in the project while awaiting the outcome of the Ecology Grant submittal (15 months). During the pauses in work, Otak will not provide any project tracking or reporting.
2. The design will be completed by to February 28, 2021.

Meetings

Design review meetings will be held throughout the Final Design Phase. Ten (10) design review meetings are anticipated to introduce design concepts, review comments on the design, and for design coordination. The meetings will consist of the following:

1. Design introduction meetings following the 60% and 90% deliverables
2. Design review meetings to review City comments and for coordination (two each during 60% and 90% design phase)
3. Four ad-hoc meetings to address design coordination items.

Meetings will be held at Redmond City Hall with 2-hour durations. BHC will provide input and comment on minutes for each meeting.

Deliverables:

1. Meeting Minutes (following each meeting with City staff)

Task 15.2.2 – Alternatives Analysis (BHC)

Receivables:

1. Site layouts, Stormwater design, force main alignments, discharge elevations, and Filterra configurations.

Work Tasks:

1. Evaluate the impacts on the Pump Station configuration, flows, and system hydraulics for two (2) alternative site configurations.
    a. Review preliminary design, force main, and site elevations.
    b. Evaluate pump selection to verify compatibility with alternatives, alignments, elevations. Revise the pump selection memorandum to reflect final design configuration.
    c. Review and finalize the list of design parameters for the pump station describing the configuration and components to be included in the design. Revise list of parameters based on City review comments

Deliverables:

1. Pump Selection Memorandum (Draft and Final)
2. Design Parameters Memorandum (Draft and Final)

Assumptions:

1. Site configuration will remain as currently configured.
2. Pump station design requirements will be similar to the City of Redmond Standard Wastewater Pump Station, with exceptions for standby power, design flow redundancy, and other elements not required for a stormwater water quality facility.

Meetings:

- None

Task 15.2.3 - Prepare 60 Percent Design (BHC)

Work Tasks:

1. Provide written responses to City review comments for Otak to incorporate into combined response matrix.
2. Prepare 60 percent construction drawings in accordance with City of Redmond Standard Specifications and Standard Plans, as appropriate. The budget is based on the List of Drawings at the end of this Scope of Services.
3. Provide input for preparation of the 60 percent general requirements. The general requirements will be prepared using the City of Redmond Standard General Requirements in accordance with the 2018 WSDOT Specifications addressing the following:
    a. Sequence of Construction
    b. Measurement and Payment
    c. Project Data Submittals
    d. Testing and Quality Control
    e. Facility Startup and Testing
4. Prepare 60 percent technical specifications. Technical specifications will be prepared in accordance with City of Redmond 2020 Standard Specifications and WSDOT Standard Specifications with additional requirements where necessary. Technical specifications will include sections necessary to define and control the construction materials and appropriate methods and will use the WSDOT numbering format for site work and buried piping and use the CSI numbering format for the structure, electrical, and structure accessories. BHC will be responsible for preparing specifications related to the pump station design with input from TSI for the electrical panel, wiring, and controls.

5. Develop opinion of probable construction cost for the pump station facilities included in the 60 percent design documents.
6. Prepare 60 percent construction drawings and input on the Technical specifications for the electrical panel design, panel elevations, wiring diagrams, programmable logic controller (PLC) and input/output (I/O) diagrams, and Bill of Materials for panel fabrication **(prepared by TSI)**. Drawings and input for the Technical specifications prepared by TSI will conform to City of Redmond standards.
7. Review and comment on draft drawings and Bill of Materials developed by TSI.
8. Conduct in-house quality control review of the pump station 60 percent drawings, specification sections, and opinions of probable costs.
9. Submit 60 percent design documents to Otak for review and inclusion in the 60% design review package.

Deliverables:

1. 60 percent plans and specifications and opinion of probable cost

Task 15.2.4 - Prepare 90 Percent Design (BHC)

Work Tasks:

1. Provide written responses to City review comments for Otak to incorporate into combined response matrix.
2. Incorporate City review comments and prepare 90 percent design.
3. Develop opinion of probable construction cost for the pump station facilities included in the 90 percent design documents.
4. Incorporate City review comments and prepare 90 percent electrical panel design, panel elevations, wiring diagrams, PLC I/O diagrams, and Bill of Materials for panel fabrication (prepared by TSI). Review and comment on draft drawings and Bill of Materials **(prepared by TSI)**.
5. Prepare for and attend First Screen Development Workshop conducted by TSI.
    a. Prepare workshop agenda
    b. Prepare Draft Supervisory Control and Data Acquisition (SCADA) / Operator Interface Terminal (OIT) screen printouts both as-displayed and build screens.
    c. Attend workshop (TSI to lead) to review SCADA/OIT screen Drafts at the City Hall.
    d. Prepare meeting minutes.
6. Conduct in-house quality control review of the 90 percent drawings, specifications, and opinion of probable cost.
7. Submit 90 percent design documents to Otak for review and inclusion in the 90% design review package.

List of Drawings:

- General – Prepared by Otak
- Demolition – Prepared by Otak
- TESC – Prepared by Otak
- Civil – Prepared by Otak
- Plan and Profiles – Prepared by Otak
- Landscape – Prepared by Otak
- Structural – 6 sheets (Pump station structural only, additional structural design for Filterra and other site improvements prepared by Otak)
- Mechanical – 8 sheets
- Electrical – 8 sheets
- TSI – 45 sheets

Total of 67 sheets provided under Task 15.2 of this scope of work.

Deliverables:

1. 90 percent plans and specifications and opinion of probable cost

Task 15.2.5 - Grant Support (BHC)

BHC's role is limited to providing support to Otak for portions of the design report related to the pump station. This includes limited report text describing the facility, operation of the pump station, and input on Figures prepared by Otak.

Task 15.2.6 - As-Built Survey for Design (BHC)

BHC's role for Task 16.2.5 is limited to review of the updated utility basemap and incorporation into the design drawings associated with the pump station.

Task 15.2.7 - Prepare 100 Percent Design (BHC)

Work Tasks:

1. Provide written responses to City review comments for Otak to incorporate into combined response matrix.
2. Provide input and assist Otak with revisions to the City Bidding documents. Provide "track changes" markups to the City indicating revisions to the documents. Prepare bid schedule for inclusion in the bidding documents.
3. Incorporate City review comments and prepare final design.
4. Develop opinion of probable construction cost for the facilities included in the final design documents.
5. Review and comment on draft drawings and Bill of Materials developed by TSI.
6. Prepare for and attend Second Screen Development Workshop conducted by TSI.
    a. Prepare workshop agenda
    b. Prepare Final SCADA/OIT screen printouts both as-displayed and build screens.
    c. Attend workshop (TSI to lead) to review Final SCADA/OIT screens at the City Hall.
    d. Prepare meeting minutes.
7. Conduct in-house quality control review of the final drawings, specifications, and opinion of probable cost.
8. Submit final design documents to Otak for review and inclusion in the final design review package.

Deliverables:

2. Final plans and specifications and opinion of probable cost

Task 15.2.8 - Prepare Bid Documents (BHC)

Work Tasks:

1. Provide written responses to City review comments for Otak to incorporate into combined response matrix.
2. Incorporate City review comments and prepare additional contract document submittals until the project is ready for advertisement.
3. Develop opinion of probable construction cost for the facilities included in the bid ready contract documents.
4. Submit bid ready contract documents to Otak for preparation of the Bid Package.

Deliverables:

3. Bid Ready contract documents including opinion of probable cost

Task 15.2.9 - Advertisement and Bid Support Services (BHC)

Work Tasks:

1. Address bidders' and suppliers' questions during the bid period for each bid package.
2. Prepare a maximum of two (2) addenda, if necessary, and deliver to City for distribution.
3. Review apparent low bidder's bid documents and prepare recommendation for award.

Deliverables:

1. Two (2) Addenda (if required)
2. Recommendation for Award

Task 15.2.10 - Operations and Maintenance Manual (BHC)

BHC will support Otak with the preparation of the functional Operations and Maintenance (O&M) manual. BHC will provide descriptions for the general pump station operation and flows and provide input on figures supporting the O&M manual. This task does not include preparation of the Electronic O&M manual. The Electronic O&M manual will be prepared following completion of construction as part of future supplement for Construction Engineering Services.

Task 15.2.11 - Geotechnical Support Services (BHC)

BHC's role is limited to review of the geotechnical report and incorporation of design recommendations into the design documents.

Task 15.2 Assumptions:

1. New pumps will be Flygt.
2. Design documents will be prepared in accordance with City of Redmond Standard Specifications and Standard Plans, as appropriate.
3. Technical Specifications will be prepared in accordance with City of Redmond current Standard Specifications and WSDOT Standard Specifications with additional requirements where necessary. Technical specifications will include sections necessary to define and control the construction materials and appropriate methods and will use the WSDOT and CSI numbering formats.
4. Design components for BHC will be limited to electrical design, mechanical design of the wet well, valve vault, and interconnecting piping between the wet well and the valve vault, structural design for the wet well, valve vault, pump station slab, and control panel equipment pad. BHC mechanical design responsibility will extend from the influent pipe connection to the wet well to the force main discharge valve outside the valve vault.
5. All site civil, stormwater, water quality facilities, erosion control, and landscaping design will be provided by Otak.
6. Otak will be responsible for compiling the design documents and bid package.

Task 16 – NE 40th Street Trunkline Record Drawings (New)

Otak has received as-constructed record drawing markups from the Contractor for the NE 40th Stormwater Trunkline project. Otak will revise the Construction Plans to conform to Record Drawings from information supplied by the Contractor. The Record Drawings will be prepared in accordance with the CITY's 2017 Record Record Drawing Requirements.

Task 16 Deliverables:

- Record Drawings: Hardcopies – One Set of Mylars, One full-size, Three half-size; Electronic – One CD with electronic files

Task 17 – NE 40th Street Trunkline Outfall Monitoring & Modeling (New)

17.1 Operations and Maintenance Manual

Otak will prepare an operations and maintenance manual for an adjustable flow splitter and outfall structures. Instructions will be provided for inspections, adjustments to flow splitter to transition flow to the lake and to account for changes in watershed runoff as it is developed, and maintenance procedures.

Task 17.1 – Deliverables:

- Draft Operations and Maintenance Manual (1 pdf and 1 hard copy)
- Final Operations and Maintenance Manual (1 pdf and 1 hard copy)

17.2 Quality Assurance Project Plan

The Quality Assurance Project plan (QAPP) prepared by Otak in Task 11 under Supplement #1 was focused on water quality monitoring and modeling for Villa Marina Creek. In this new Task 17.3, Otak will prepare a Quality Assurance Project Plan for monitoring habitat, flow, and bedform deformation at the outfall. The QAPP will be consistent with and as required by the Department of Ecology and EPA/Ecology grant requirements.

The QAPP will outline data collection, analysis, and documentation procedures for the following parameters of interest:

- Habitat
  - Site visits four (4) times per year
  - Visual observation and qualitative characterization of extents of vegetation presence, as well as shoreline stability
  - Identify and locate on a map current vegetation and wildlife
  - Identify listed rare, threatened and endangered species in the area
  - Recommend maximum change (if any) in water flow that these species can survive
- Bathymetric survey
  - Monitor outfall bedform deformation during the summer, once per year
- Flow

- Pressure and velocity gauge install to measure stage and velocity at outfall in order to calculate flow
- Verify gauge readings for sensor functionality immediately after installation and one month after install

17.3 First Year Post-Construction (2019) Monitoring and Analysis

For the first-year post-construction (2019), Otak will follow the data collection, analysis and documentation procedures outlined in the QAPP for Habitat and Bathymetric survey only. Otak will install the gauge(s) in Summer 2019, and Otak will commence flow monitoring in Water Year 2020 (October 2019). An outline of the first-year monitoring tasks is provided below.

A) Installation

- City will prepare the trunkline and an upstream mahole so it is safe and suitable for equipment installation by hand in the invert of the trunkline pipe. This may include measures such as making adjustments to the upstream flow splitter to direct baseflow to Villa Marina Creek, using a sump pump in the outfall structure to bypass baseflows around the manholes, and traffic control. The City will also provide confined space entry support and equipment.
- Otak will install a pressure transducer/velocity meter within the trunkline pipe with access from a manhole.
- Otak will purchase the transducer equipment to be installed for the project and will submit it as a reimbursable expense through the invoicing. The transducer will remain the City's property at the end of the monitoring period.
- If necessary, the City will remove the monitoring equipment after the monitoring period.

B) Data Collection:

- Shoreline and Near-shore Wetland Habitat Assessment (two scientists for half day, four times per year).
- Bathymetric Survey of the outfall (two surveyors for one full day, plus one full day office work).

C) Data Analysis:

- Comparison of monitoring conditions to previously observed conditions.

D) Documentation of the analysis and proposed adaptive management, including recommendations for changes to the flow splitter settings. The Outfall Monitoring and Modeling Memo will include the following sections, and will be updated once per year for the five years of the monitoring effort:

- Field observations
- Adaptive Management (if proposed)
- Proposed Splitter Modifications (if applicable)

17.4 Second Year Post-Construction (2020) Monitoring and Analysis

For five years post-construction (2020-2024), Otak will follow the data collection, analysis and documentation procedures outlined in the QAPP. An outline of these activities is provided below.

A) Data Collection:

- Shoreline and Near-shore Wetland Habitat Assessment (two scientists for half day, four times per year)
- Bathymetric Survey of the outfall (two surveyors for one full day, plus one full day office work)
- Download electronic data from the gauge (two EITs for one half day, six days per year)

- Velocity measurement to validate weir coefficient (included in effort estimate above)

B) Data Analysis:

- Comparison of monitoring conditions to previously observed/modeled results
  - Run existing conditions hydrologic model (HSPF) for the precipitation for the water year
  - Run existing hydraulic conditions model (PCSWMM) for the water year and compare to observed flow.
  - Determine if modeled volume through the outfall matches calculated observed volume through the outfall. If these do not match, updates to the hydrologic and/or hydraulic models may be required. We assume no model updates or calibration efforts will be required.
- Hydraulic modeling of proposed flow control adjustment (if applicable)
  - Based on field data, modifications to the flow splitter will be modeled to establish new settings. Recommendations will be reviewed with the City prior to changing the settings on the flow splitter. We assume that City personnel will modify the splitter setting.
- Otak will calculate the estimated serviceable redevelopment area in the proposed conditions hydrologic model based on proposed flow control adjustment.
- Adaptive management strategies, if required, will be estimated and presented to the City prior to implementing any recommended changes, and will be paid for as a contingency item.

C) Documentation of the analysis and proposed adaptive management, including recommendations for changes to the flow splitter settings. The Outfall Monitoring and Modeling Memo will include the following sections, and will be updated once per year for the five years of the monitoring effort:

- Field observations
- Service Area Calculations
- Adaptive Management (if proposed)
- Proposed Splitter Modifications (if applicable)

17.5 Third Year Post-Construction (2021) Monitoring and Analysis

The actions A through C described in Task 16.5 above will be repeated for the 2021 Water Year. Project administration and coordination effort associated with Task 16.6 are included in the scope of this task.

17.6 Fourth Year Post-Construction (2022) Monitoring and Analysis

The actions A through C described in Task 16.5 above will be repeated for the 2022 Water Year Project administration and coordination effort associated with Task 16.7 are included in the scope of this task.

17.7 Fifth Year Post-Construction (2023) Monitoring and Analysis

The actions A through C described in Task 16.5 above will be repeated for the 2023 Water Year. Project administration and coordination effort associated with Task 16.8 are included in the scope of this task.

17.8 Sixth Year Post-Construction (2024) Monitoring and Analysis

The actions A through C described in Task 16.5 above will be repeated for the 2024 Water Year. Project administration and coordination effort associated with Task 16.9 are included in the scope of this task.

Task 17 Assumptions:

- Water Quality monitoring will be removed from the QAPP. Therefore, Otak will not verify or calibrate the basin water quality model.

- The City will provide support for safe confined space entry and gauge installation in the trunkline pipe.
- We assume the measured flow results will be close to the modeled results. We assume no model updates or calibration efforts will be required.
- Adaptive Management is considered a contingency item.

Task 17 Deliverables:

- Record Drawing Package for NE 40th St. Stormwater Trunkline Extension Project
- Operations and Maintenance Manual
- Draft and final QAPP
- Draft and final Outfall Monitoring and Modeling Memo for each year of study, due in October of each year (size (6) total)

Optional Task 18 - Construction Engineering Support Services (New)

Construction engineering support services may be provided through this contract for the RTS Pump Station and Water Quality Facility, if requested by Redmond. If requested, Otak and/or BHC will provide a more detailed scope and level of effort (LOE) for a Supplement.

The engineering services during construction will address RFI responses, submittal review, preparation of the Electronic Operations and Maintenance (EO&M) manual, record drawing preparation, and other engineering construction services.

Exhibit D-2

Consultant Fee Determination

Project Name: NE 40th Street Stormwater Trunkline Extension - Supplement 02
Project Number: 20021607
Consultant: OTAK

NEGOTIATED HOURLY RATES

Classification	Hours	DSC	Overhead 153.21%	Fee (Profit) 30%	Total Hourly Rate	Total
Sr. PIC/Sr. Project Manager Civil	102	$ 85.10	$130.38	$25.19	$225	$22,950
PIC/Sr. PM Civil		$ 74.52	$114.17	$22.06	$211	
Civil Engineer X		$ 60.10	$92.07	$17.79	$170	
Civil Engineer IX	620	$ 57.69	$88.39	$17.08	$163	$101,159
Civil Engineer VIII		$ 52.88	$81.02	$15.65	$150	
Civil Engineer VII		$ 47.12	$72.19	$13.95	$133	
Civil Engineer VI		$ 44.76	$68.58	$13.25	$127	
Civil Engineer V		$ 43.27	$66.29	$12.81	$122	
Civil Engineer IV	246	$ 41.25	$63.20	$12.21	$117	$28,698
Civil Engineer III		$ 39.90	$61.13	$11.81	$113	
Civil Engineer II		$ 35.00	$53.62	$10.36	$99	
Civil Engineer I		$ 30.00	$45.96	$8.88	$85	
Engineering Designer V	874	$ 36.54	$55.98	$10.82	$103	$90,318
Engineering Designer IV	758	$ 33.65	$51.56	$9.96	$95	$72,135
Engineering Designer III		$ 28.85	$44.20	$8.54	$82	
Engineering Designer II		$ 25.00	$38.30	$7.40	$71	
Engineering Designer I		$ 23.00	$35.24	$6.81	$65	
Engineering Technician VII		$ 45.19	$69.24	$13.38	$128	
Engineering Technician VI		$ 38.00	$58.22	$11.25	$107	
Engineering Technician V		$ 32.69	$50.09	$9.68	$92	
Engineering Technician IV	138	$ 28.80	$44.12	$8.52	$81	$11,240
Engineering Technician III		$ 26.00	$39.83	$7.70	$74	
Engineering Technician II		$ 23.10	$35.39	$6.84	$65	
Engineering Technician I		$ 22.50	$34.47	$6.66	$64	
PIC/Sr. PM LA/Master Planner		$ 59.62	$91.34	$17.65	$169	
Landscape Architect VI	78	$ 46.39	$71.08	$13.73	$131	$10,234
Landscape Architect V		$ 41.35	$63.35	$12.24	$117	
Landscape Architect IV		$ 38.94	$59.66	$11.53	$110	
Landscape Architect III		$ 35.58	$54.51	$10.53	$101	
Landscape Architect II	108	$ 32.21	$49.35	$9.53	$91	$9,838
Landscape Architect I		$ 30.00	$45.96	$8.88	$85	
Landscape Technician III		$ 33.00	$50.56	$9.77	$93	
Landscape Technician II		$ 28.85	$44.20	$8.54	$82	
Landscape Technician I		$ 24.04	$36.83	$7.12	$68	
Urban Designer V		$ 52.88	$81.02	$15.65	$150	
Urban Designer IV		$ 49.00	$75.07	$14.50	$139	
Urban Designer III		$ 45.00	$68.94	$13.32	$127	
Urban Designer II		$ 40.50	$62.05	$11.99	$115	
Urban Designer I		$ 35.00	$53.62	$10.36	$99	
Graphics Specialist		$ 33.65	$51.56	$9.96	$95	
Planner III		$ 45.00	$68.94	$13.32	$127	
Planner II		$ 37.98	$58.19	$11.24	$107	
Planner I		$ 28.00	$42.90	$8.29	$79	
Planner Associate IV		$ 37.55	$57.53	$11.11	$106	
Planner Associate III		$ 29.33	$44.94	$8.68	$83	
Planner Associate II		$ 27.40	$41.98	$8.11	$77	
Planner Associate I		$ 21.63	$33.15	$6.40	$61	
Sr. GIS Specialist Planner		$ 33.00	$50.56	$9.77	$93	
Scientist VI	48	$ 60.50	$92.69	$17.91	$171	$8,213

Scientist V	14	$ 45.67	$69.98	$13.52	$129	$1,808
Scientist IV	118	$ 44.78	$68.61	$13.26	$127	$14,945
Scientist III		$ 38.46	$58.93	$11.38	$109	
Scientist II	152	$ 25.00	$38.30	$7.40	$71	$10,747
Scientist I		$ 20.00	$30.64	$5.92	$57	
Water Resource Analyst		$ 60.50	$92.69	$17.91	$171	
PIC/PLS Sr. Manager		$ 67.31	$103.13	$19.92	$190	
Professional Land Surveyor IV		$ 48.08	$73.66	$14.23	$136	
Professional Land Surveyor III	32	$ 44.47	$68.13	$13.16	$126	$4,025
Professional Land Surveyor II		$ 35.00	$53.62	$10.36	$99	
Professional Land Surveyor I		$ 30.00	$45.96	$8.88	$85	
Survey Crew Chief III	84	$ 36.50	$55.92	$10.80	$103	$8,671
Survey Crew Chief II		$ 30.30	$46.42	$8.97	$86	
Survey Crew Chief I		$ 26.40	$40.45	$7.81	$75	
Survey Office Technician III		$ 31.30	$47.95	$9.26	$89	
Survey Office Technician II	132	$ 28.50	$43.66	$8.44	$81	$10,639
Survey Office Technician I		$ 25.00	$38.30	$7.40	$71	
Survey Field Technician III		$ 23.10	$35.39	$6.84	$65	
Survey Field Technician II		$ 20.00	$30.64	$5.92	$57	
Survey Field Technician I		$ 18.80	$28.80	$5.56	$53	
Contract Administrator		$ 35.00	$53.62	$10.36	$99	
Project Administrative Assistant		$ 26.00	$39.83	$7.70	$74	
Project Coordinator	226	$ 35.00	$53.62	$10.36	$99	$22,370
Total Hours	3,730				**Subtotal:**	$427,991

REIMBURSABLES		
Mileage		$1,000
Reproduction (copies, plots, etc.)		$5,000
Miscellaneous (monitoring equipment)		$6,500
	Subtotal:	$12,500

SUBCONSULTANT COSTS (See Exhibit E-2)		
BHC		$220,740
GeoEngineers		$7,400
	Subtotal:	$228,140

Total:	$668,631
Contingency:	$30,000
GRAND TOTAL:	$698,631

EXHIBIT E-2

Subcontracted Work

Project Name: NE 40th Street Stormwater Trunkline Extension - Supplement
Project Number: 20021607
Consultant: OTAK

The City permits subcontracts for the following portions of work of the Agreement:

Subconsultant	Work Description	Amount
BHC	Pump Station Design	$220,740
GeoEngineers	Finalize Geotech Report and Design Review	$7,400
	Total:	$228,140

Exhibit E-2a

Consultant Fee Determination

Project Name: NE 40th Stormwater Treatment Retrofit
Project Number: 20021607
Consultant: BHC

NEGOTIATED HOURLY RATES

Classification	Hours	DSC	Overhead 144%	Fee (Profit) 27%	Total Hourly Rate	Total
PIC, QA/QC (Dorn)	58	$ 88.00	$126.82	$23.58	$238	$13,827
Sr Elect Engr (Gibson)	137	$ 77.00	$110.96	$20.64	$209	$28,578
Struct. Engr (Franco)	80	$ 69.00	$99.44	$18.49	$187	$14,954
Project Mgr (Allen)	201	$ 63.00	$90.79	$16.88	$171	$34,305
Project Engr (Miller)	269	$ 38.00	$54.76	$10.18	$103	$27,692
Drafting (Simon)	254	$ 54.00	$77.82	$14.47	$146	$37,158
Admin (Pierson)	69	$ 40.00	$57.64	$10.72	$108	$7,477
Total Hours	1,068				**Subtotal:**	$163,993

REIMBURSABLES

Mileage	$136
Reproduction (copies, plots, etc.)	$2,500
Miscellanous	
Subtotal:	$2,636

SUBCONSULTANT COSTS (See Exhibit E-2b)

TSI	$54,111
Subtotal:	$54,111

Total:	$220,740
Contingency:	
GRAND TOTAL:	$220,740

EXHIBIT E-2b

Subcontracted Work

Project Name: NE 40th Stormwater Treatment Retrofit
Project Number: 20021607
Consultant: BHC

The City permits subcontracts for the following portions of work of the Agreement:

Subconsultant	Work Description	Amount
TSI	Electrical and Control Panel Design	$54,111
	Total:	$54,111