

## AM NO. 10-210 (C.10)

MEMO TO: City Council

FROM: John Marchione, Mayor

DATE: October 19, 2010

SUBJECT: **APPROVAL OF SUPPLEMENTAL CONSULTANT AGREEMENT NO. 2 FOR ENGINEERING SERVICES, VALLEY ESTATES BANK STABILIZATION AND CULVERT REPLACEMENT, PROJECT NO. 100392**

### I. RECOMMENDED ACTION:

Approve Supplemental Consultant Agreement No. 2 with Otak for final design services for the Valley Estates Bank Stabilization and Culvert Replacement, Project No. 100392, in an amount not to exceed \$101,258 including contingencies, and authorize the Mayor to sign the agreement.

### II. DEPARTMENT CONTACT PERSONS:

Bill Campbell, Director of Public Works	425-556-2733
Ron Grant, Assistant Public Works Director/City Engineer	425-556-2742
Mike Haley, Construction Engineer	425-556-2843
Roger Dane, Stream Enhancement Planner	425-556-2815

### III. DESCRIPTION:

#### **Background**

The project area extends from the Sammamish River to just upstream of Redmond-Woodinville Road (see Attachment A). This includes a culvert crossing under the Sammamish River Trail and approximately 2,000 feet of stream channel up to the culvert under Redmond-Woodinville Road (expected to remain in its current configuration). This Class 2 stream through the Valley Estates and Redmond 74 / Mondavio / Verona plats is eroded, limiting in-stream habitat and contributing sediment to the Sammamish River. Erosion in the upstream reaches has created cut banks and an incised channel, resulting in sediment deposition in the valley floor. The stream enters the Sammamish River through a steeply sloped culvert with an outlet at least four feet above the low flow water surface of the river, isolating the stream from salmon and trout.

The City Council approved a preliminary design contract for this project on July 1, 2008, and final design contract (Supplement No. 1) on May 5, 2009. Subsequently, the consultant team refined a preferred design for phased construction, but unfortunately property agreements needed to construct the design could not be secured. Recently property agreements have been secured for an alternative bypass alignment that offers similar performance for the same or lower cost. Modifying the design for the new bypass pipe alignment will require additional site investigation and design time to update the construction documents for summer 2011 construction.

City staff conducted two public open house events, and met individually with many of the affected property owners several times. Fliers describing the project concept were distributed to over 200 households (including Valley Estates and Mondavio plats) to obtain public comment. Meetings with individual affected property owners have resulted in a revised design.

### **Project Description**

The project design includes:

- Installing a high-flow bypass to control peak flows through the stream channel and reduce erosion.
- Replacing the outfall culvert with a larger fish-passable box culvert under the Sammamish River Trail, replacing an existing crossing with a fish passable culvert, and removing a weir that blocks fish movement.
- Re-grading the lower channel near the outfall to step up using weirs, restoring the channel mouth and providing fish passage to the stream.
- Providing stabilization and in-stream habitat complexity for fish and aquatic life using small logs, boulders, bioengineering (stabilizing with live plants), and buffer vegetation. These techniques will be implemented to direct erosive flows away from steep banks; diversify in-stream habitat by creating pools; and restore native trees and other vegetation in the adjacent open space.
- Stabilizing the area around the pipe outfall under Redmond-Woodinville Road.

This strategy will allow all flow to remain in the channel during low flow conditions, while peak flows will be diverted into the high flow bypass during storm events. Reducing peak flows through the channel is expected to limit erosion, improve water quality, and contribute to restoring the in-stream habitat. Successful design approaches from similar completed projects on nearby streams will be used as templates for detailed design for in-stream elements on this project.

**IV. IMPACT:**

- A. Service/Delivery: This project will reduce erosion, enhance habitat for salmon and other wildlife, provide fish passage into the stream system and improve aesthetics for users of the Sammamish River Trail and homeowners adjacent to the stream.
- B. Fiscal: Estimated costs for final design and construction are shown below. After completion of final design, the consultant agreement will be supplemented to provide for construction and post-construction services.

Estimated Project Costs:

Design

Preliminary Engineering - Otak	\$ 484,743
Supplemental Agreement No. 2 – Final Design	101,258
City Administration	<u>100,000</u>
Subtotal	\$ 686,001

Construction

Construction	\$1,834,000
Contingencies	555,280
City Administration	<u>80,000</u>
Subtotal	\$2,469,280

Total Estimated Cost \$3,155,281

Project Funding

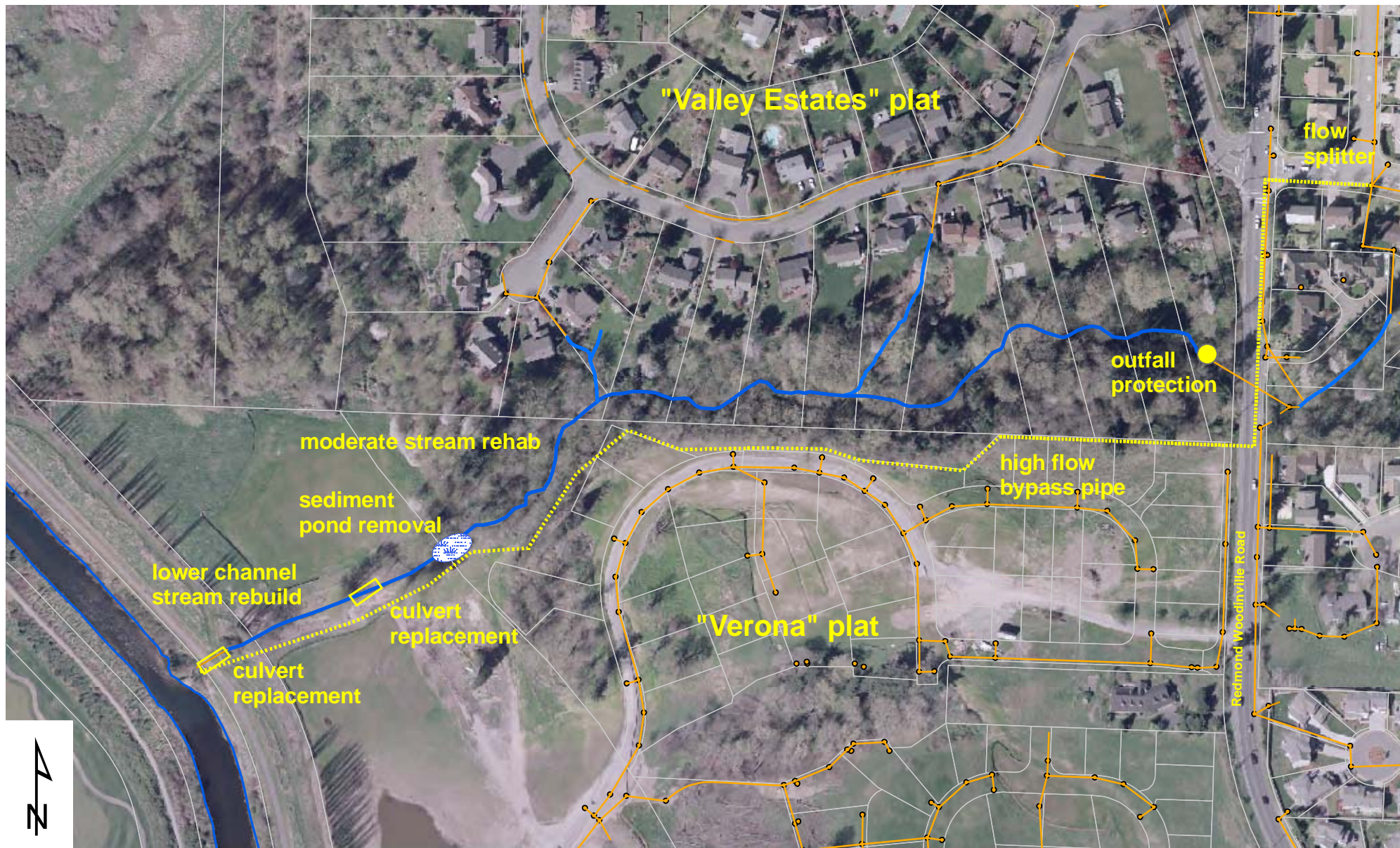
Stormwater CIP	\$2,928,223
King County Regional Flood District	133,320
King Conservation District	<u>93,738</u>
Total	\$3,155,281

**V. ALTERNATIVES:**

City Council could choose to not approve the agreement; however, this action would stop the project from advancing toward construction.



ATTACHMENT A



"Valley Estates" Stream

## ATTACHMENT B

### Valley Estates Bank Stabilization and Culvert Replacement Project No. 100392 (03-NR-46)

#### SUPPLEMENTAL AGREEMENT NO. 2

This SUPPLEMENTAL AGREEMENT, made and entered into this \_\_\_\_ day of \_\_\_\_\_, 2010, between the City of Redmond, Washington, hereinafter called the CITY, and Otak, hereinafter called the CONSULTANT, amends an earlier Agreement (AGREEMENT) dated July 5, 2008.

WHEREAS the CITY desires to supplement the original AGREEMENT;

NOW THEREFORE, it is mutually agreed that the terms, stipulations, and conditions of the original AGREEMENT shall be binding upon the parties hereto except insofar as amended by this SUPPLEMENTAL AGREEMENT as follows:

#### I

Section II, SCOPE OF WORK, is amended by the additional tasks summarized in Exhibit A-2 attached hereto.

#### II

Section IV, TIME FOR BEGINNING AND COMPLETION, is amended to change the completion date for all work to read December 31, 2011.

#### III

Section V, PAYMENT, shall be amended to compensate the CONSULTANT for the work described in Exhibit A-2.

A breakdown of the CONSULTANT'S cost proposal is attached hereto as Exhibit B-2. By this reference the exhibit is made a part of this SUPPLEMENTAL AGREEMENT.

Summarized below are the costs as listed in the original AGREEMENT and as modified by this SUPPLEMENTAL AGREEMENT.

Summary				
Description	Original Agreement	Supplement No. 1	Supplement No. 2	Total
Labor Cost	\$202,037	\$221,806	\$87,758	\$511,601
Reimbursables	8,900	8,000	4,500	21,400
Total	210,937	229,806	92,258	533,001
Contingency	21,000	23,000	9,000	53,000
<b>Grand Total</b>	<b>\$231,937</b>	<b>\$252,806</b>	<b>\$101,258</b>	<b>\$586,001</b>

**EXECUTION**

IN WITNESS WHEREOF, the parties have executed this SUPPLEMENTAL AGREEMENT by having their representatives affix their signatures below.

*OTAK*

CITY OF REDMOND

By \_\_\_\_\_

By \_\_\_\_\_  
John Marchione, Mayor

\_\_\_\_\_  
(Title)

Attested:

By \_\_\_\_\_  
City Clerk

Approved as to Form:

By \_\_\_\_\_  
City Attorney

## EXHIBIT A-2

### SCOPE OF WORK

#### **Valley Estates Bank Stabilization and Culvert Replacement**

City of Redmond Project No. 100392 (03-NR-46)

Final Design and Construction Documents

This Supplemental Contract provides the City of Redmond (City) with final plans, special provisions, and cost estimate for the construction of the Valley Estates Bank Stabilization and Culvert Replacement. The improvements were initially divided into two Phases, but are now being combined into a single package with a modified layout for the proposed high flow bypass pipe.

A high flow bypass pipe intended to divert erosive flows from the channel is proposed from an existing stormwater pipe in NE 109<sup>th</sup> Street, south along Redmond-Woodinville Road, then west along the north edge of the Verona Plat to the valley floor and an outfall near the Sammamish River. The original high flow bypass alignment started at the upstream end of the stream culvert under Redmond-Woodinville Road, and was to be bored under the road and through a portion of the Valley Estates properties. However, the City was not able to obtain easements to install pipe on the previous alignment, and decided to implement a different alternative developed in the project's alternatives analysis task. This new alternative has the bypass alignment starting in NE 109<sup>th</sup> Street, with a flow splitter that continues to send fish friendly flows to the stream and bypass high flows in a 24-inch diameter bypass pipe that would be installed by open-cut trenching in Redmond-Woodinville Road, then through the Verona and Mondavio Plats to the Sammamish River.

In-stream improvements include habitat enhancement features in the channel; bank stabilization in portions of the stream; outfall protection for the existing culvert under Redmond-Woodinville Road; replacement of an existing culvert under the Sammamish River Trail with a fish passable culvert; installing another fish passable culvert approximately 300 feet upstream of the river on the Mondavio Plat.

### **Task 12—PS&E**

#### **Task 12.1—Project Management and Coordination**

Otak will provide project management to satisfactorily complete this task. We will plan and manage the activities of the design team and prepare project progress reports and documentation. Project management will be provided continuously for the duration of this task (approximately two months).

##### **12.1.A—Coordination with City of Redmond**

Otak will coordinate execution of the project with the City of Redmond project manager and City staff. Otak will establish and maintain effective communications for keeping the City well-informed of progress, unanticipated design issues that may arise, and issues requiring decisions and direction from the City. Otak will prepare meeting agendas and summaries for coordination meetings. Design meetings will be held on a regular basis with



City staff to discuss project issues.

#### **12.1.B—Design Team Management**

Otak will direct and supervise internal team members and their activities to ensure successful completion of design documents and other services provided. Progress meetings will be held with the project team on a monthly basis during the design phase of this task.

Otak will coordinate and manage subconsultants and direct as necessary to ensure the timely, seamless integration of their data and work products. We will review and monitor subconsultants' scope activities and budget expenditures.

#### **12.1.C—Project Monitoring and Reporting**

Otak will document all design criteria, significant findings, and determinations made throughout the project. We will prepare monthly project status reports and invoices with sufficient detail to reflect progress over the last billing period and anticipated activities over the next billing period. The status report will also discuss issues that have arisen and plans to resolve them. Otak will coordinate with subconsultants to ensure timely receipt of invoices and make sure they contain sufficient detail to document progress.

#### **Assumptions:**

- 14 months task duration
- Bi-Weekly, half hour meetings with the City will be held via teleconference or at the Otak office

#### **Deliverables:**

- Schedule with periodic updates as necessary
- Meeting agendas and summaries
- Miscellaneous design documentation and correspondence
- Monthly progress reports and invoicing

#### **Task 12.2—Survey and Base Mapping**

- Survey geotechnical boring and utility pothole locations and add to the base map. The existing basemap will be updated with the survey data listed above.
- Complete survey of three (3) Valley Estates parcels if permission given to access properties and add to the existing basemap.

#### **Assumptions:**

- We assume two (2) boring locations will be surveyed.
- We assume that up to twenty (20) utility potholes will be surveyed.
- Property access will be obtained by the City for all properties.

#### **Deliverables:**

- Updated base map, hard copy and electronic (PDF and CAD)

### **Task 12.3—Utility Coordination**

Otak will coordinate meetings with affected utilities to discuss the potential relocation of their facilities to accommodate the project.

Regular coordination meetings will occur with City staff throughout the course of the project as described below. Otak will attempt to utilize the City's regular monthly utility coordination meeting to avoid multiple meetings. We will prepare a spreadsheet/matrix summarizing utility conflict locations and actions for each of the utility conflict locations. This document will be updated whenever new information becomes available to assure that all utility coordination activities are tracked. For budgeting purposes, Otak will prepare for and attend one two-hour meeting regarding preliminary design issues.

#### **Task 12.3.A—Utility Potholing - APS**

Otak will use APS, Inc. to refine utility locations. APS will air/vacuum excavate approximately 19 test-holes on various utilities and at various locations to obtain depth for engineering design. APS will jackhammer and remove existing asphalt road bed locations (approx. 12"x 12" square removal). APS will patch these locations with EZ-Street (Cold mix) and finish as neatly as possible such that the holes will not be a safety hazard. APS, Inc. shall backfill all test holes with a material approved by the City (5/8" select backfill, sand, pea gravel, etc.). Information gathered on all utilities encountered during the excavation (including top, bottom, width, general soil conditions and asphalt/concrete thickness, etc.) shall be provided to Otak in an excel format along with accompanying sketches that detail the findings.

#### **Assumptions:**

- We assume that up to twenty (20) utility potholes will be necessary.
- One Otak representative will attend up to one (1) utility meeting.
- The bypass pipe is anticipated to be open excavation trenching in the Redmond-Woodinville Road prism at a depth that will minimize excavation. Coordination with utilities in this area is to confirm that there is not a conflict with this project and if a conflict is unavoidable, to coordinate with the utility company so the utility company can relocate their utility.
- Utilities will be between 0' and 9' in depth.
- CDF backfill or permanent asphalt restoration is excluded from this proposal. In the event that the City requires CDF backfill or permanent asphalt, additional fees may be required.

#### **Deliverables:**

- Spreadsheet matrix of utilities, pothole data and potential conflicts
- Meeting minutes

### **Task 12.4—Final Design**

#### **12.4.A—Updated Hydraulic Analysis**

Otak will update the HEC-RAS model of the Class II stream (created during task 6) to analyze the updated flows and verify the hydraulic performance of the proposed bank stabilization efforts and fish passable culvert. Design flows will be based on the results of the

updated WWHM model prepared in Task 9. Final design of the culvert will be in accordance with the WDFW guidelines. Stream power and water surface elevations will be computed in the model for the existing and proposed conditions and used to design a stable channel.

Otak will update the XP-SWMM hydraulic model of the final high flow bypass system for the preferred pipe alignment in the Redmond-Woodinville Road.

#### **12.4.B—Update Summary Memorandum for Basis of Design Report**

Otak will update the summary memorandum prepared under task 6 to be a basis of design report.

The basis of design report will document the final design process for the project. A brief (6-10 page) Executive Summary that is written for the public and City Council will be included. A final design report will be provided, based on feedback received from the City.

#### **Deliverables:**

- Electronic copies of the HEC-RAS and XP-SWMM hydraulic models
- Provide ten copies of Final Basis of Design Report (and electronic PDF copy)

#### **Task 12.5—Construction Documents**

Plans will be based on the City's standard plan format, title, and border. Plans will be prepared in AutoCAD. The horizontal scale of the plan drawings will vary depending on the appropriate level of detail required (assume 1"=20').

##### **12.5.A—Construction Plan Set (60 Percent Design)**

Otak will update the permit plan set for Phase 2 to a 60 percent design level and combine the Phase 1 and Phase 2 plan sets into a single package. The 60 percent design submittal will include five sets of 11"x17" plans, PDF with draft specifications and Bid Schedule and cost estimate.

##### **12.5.A.1—Tree Preservation**

Otak will perform a site visit to walk the proposed pipe alignment and document current condition of trees, prepare a tree protection plan sheet showing tree protection areas with details and notes, and prepare a tree replacement plan sheet for those trees that are required to be removed based upon reasonable assumptions using the plans and survey. Otak will also complete a Tree Preservation Table and a brief report documenting the significance and landmark trees being removed and/or replaced as part of this project and

##### **12.5.B—Construction Plan Set (90 Percent Design)**

Otak will address comments from the City's review of the 60 percent design, and the plans will be revised to represent a 90 percent level of detail. The 90 percent design submittal will

include five sets of 11"x17" plans, PDF with draft specifications and Bid Schedule and cost estimate.

The content of the plans will be directed towards addressing the 60 percent review comments and include all necessary construction details.

#### **12.5.C—Construction Plan Set (100 Percent Design)**

Otak will address comments from the City's review of the 90 percent design, and the plans will be revised to represent a 100 percent level of detail. The 100 percent design submittal will include five sets of 11"x17" plans, PDF with draft specifications and Bid Schedule and final cost estimate.

The content of the plans will be directed towards addressing the 90 percent review comments and include all necessary construction details.

#### **12.5.D Final Construction Plans**

Otak will address comments from the City's review of the 100 percent design to represent a final design. The final design submittal will include one set of signed 22"x34" on Mylar and five sets of signed 11"x17" plans on bond, final specifications and Contract Documents.

#### **Assumptions:**

- It is understood that the project will be bid as a single package.
- 60 Percent – COE Permit Set for Phase 1 and Phase 2 Deliverable was completed in Task 6.

#### **Deliverables:**

- 60 Percent plans (5, half size 11"x17" plan sets) and electronic copies (PDF, CAD, and MS Excel).
- 90 Percent plans (5, half size 11"x17" plan sets) and electronic copies (PDF, CAD, and MS Excel).
- 100 Percent plans (5, half size 11"x17" plan sets) and electronic copies (PDF, CAD and MS Excel).
- Final plans (1, 22"x34", and 5, half size 11"x17" plan sets) and electronic copies (PDF, CAD and MS Excel).

#### **Task 12.6—Project Manual**

Otak will prepare specification documents to include City standard bid items, contract and general special provisions documents, bid proposal, Amendments and General Special Provisions to the 2010 Edition of the Washington State Department of Transportation Standard Specifications for Road, Bridge, and Municipal Construction. The City shall supply the Consultant with an electronic version (MS Word) of standard boilerplate of its bid, contract, and other relative standard specifications. The Consultant will modify City documents to include project specific boilerplate information and prepare special provisions in accordance with City and WSDOT/APWA format.

Otak will first submit a project manual outline and list of special provisions. A draft project manual will be submitted with the 90 percent plans. The draft project manual will be revised to a higher level of design completion, including incorporating the comments from the City for the 100 percent and final submittal.

**Assumptions:**

- Otak will use the project manual for Phase 1, completed under task 9.8, as a start to the 90 percent project manual.

**Deliverables:**

- A list of special provisions will be submitted with the 60 percent plans.
- A draft Project Manual will be submitted with the 90 percent plans.
- A draft Project Manual will be submitted with the 100 percent plans.
- A final Project Manual will be submitted with the final plans and in electronic format (MS Word).

**Task 12.7—Cost Estimate**

Otak will prepare construction cost estimates. Using the design drawings, we will calculate quantities and develop an itemized estimate of quantities and unit costs. Unit costs will be estimated from experience and previous bid tabs on similar current City, King County, and WSDOT unit prices. The cost estimate will include appropriate contingencies to reflect the level of design complete. The City will make available to Otak unit costs from recent City construction projects, where applicable, to assist in developing construction cost estimates.

**Deliverables:**

- 60 percent construction cost estimate.
- 90 percent construction cost estimate.
- 100 percent construction cost estimate.
- Final construction cost estimate.
- Electronic copies of the cost estimates will also be delivered in electronic format (MS Excel) at each submittal.

**Task 12.8—Geotechnical Investigation**

GeoEngineers will provide geotechnical services to explore the subsurface conditions at the proposed high-flow bypass flow splitter structure on NE 109th Street, east of Redmond Woodinville Road NE (SR 202). They will also explore subsurface conditions at a second proposed culvert on the lower Valley Estates Creek. Based on these explorations, they will provide geotechnical recommendations for the design and construction of these facilities.

GeoEngineers scope of services will include the following:

1. Conduct a geotechnical reconnaissance of the revised pipeline corridor, at the flow splitter structure and at the culvert location. On the basis of the reconnaissance, they will select locations for explorations.

2. Prepare an exploration plan for submittal to the City of Redmond. The boring for the flow splitter structure will be completed within the City's ROW corridor. The boring for the culvert will be on private property.
3. Locate and clear existing utilities at proposed boring locations. GeoEngineers will contact the One Call Utility Locate Service before beginning our explorations. They will also have a private locate service on site prior to drilling to clear exploration locations for underground utility conflicts.
4. Perform a subsurface exploration program that will include two borings to depths up to 20 to 25 feet each drilled with a power, hollow-stem auger drill rig. One boring will be advanced at the proposed flow splitter structure location and one boring at the culvert location on the Mondavio Plat. The boring on the street will require temporary traffic control. GeoEngineers will coordinate the locations of the borings with Otak and the City of Redmond prior to performing the investigation.
5. Evaluate pertinent physical and engineering characteristics of the soils based on laboratory tests performed on samples obtained from the borings. The laboratory tests may include moisture content and grain size analyses, as appropriate.
6. Complete engineering analyses and develop conclusions and recommendations for the following:
  - Conventional trenching techniques including geotechnical parameters for trench shoring design, trench excavation considerations, bedding and backfilling of pipelines, and dewatering requirements.
  - Recommendations for earthwork and site preparation will include the suitability of on-site soils for reuse in trench backfill, placement and compaction of trench backfill, mitigation of unsuitable soil conditions, and an evaluation of the effects of weather and/or construction equipment on site soils.
  - Recommendations for foundation support of the flow splitter structure and the proposed culvert.
7. Provide recommendations for sedimentation and erosion control during and following construction, and permanent site drainage.
8. Address City of Redmond sensitive areas ordinance issues as they pertain to geotechnical and geological considerations.
9. GeoEngineers will prepare a draft geotechnical engineering report summarizing the results of this evaluation. A final report will be issued which will include comments from the project team.
10. Provide consultation and attend meetings, as requested.

**Deliverables:**

Draft and Final Geotechnical engineering report

**EXHIBIT B-2**

**CONSULTANT FEE DETERMINATION**

**PROJECT:** Valley Estates Bank Stabilization & Culvert Replacement

**NEGOTIATED HOURLY RATES:**

<u>Classification</u>	<u>Hours</u>	x	<u>Rate</u>	=	<u>Cost</u>
Sr PIC/Sr PM	59	x	\$185	=	\$10,915
Civil Engineer VII		x	134	=	
Civil Engineer III	188	x	97	=	18,236
Engineering Designer III	144	x	89	=	12,816
Engineering Technician IV	136	x	80	=	10,880
Landscape Arch V	59	x	113	=	6,667
Principal/Scientist		x	159	=	
Scientist III		x	105	=	
PLS Sr Manager	1	x	128	=	128
Survey Technician	4	x	86	=	344
Sr. Fld Pr Ch	8	x	72	=	576
Sr. Field Survey Tech II	8	x	64	=	512
Project Admin Asst	42	x	71	=	2,982

TOTAL = \$ 64,056

**REIMBURSABLES:**

*"mileage, reproduction, utility locates, traffic control"* = \$ 4,500

**SUBCONSULTANT COSTS (see C-1)** = \$ 23,702

**TOTAL** = \$ 92,258

**CONTINGENCIES:** = \$ 9,000

**GRAND TOTAL:** = \$ 101,258

**EXHIBIT C-2**

**SUBCONTRACTED WORK**

The CITY permits subcontracts for the following portions of the work of the AGREEMENT:

SUBCONTRACTOR	WORK DESCRIPTION	AMOUNT
GeoEngineers	Geotechnical investigation, traffic control, laboratory testing and reporting	\$12,522
APS Utility Potholing	Utility potholing	\$11,180
	<b>TOTAL</b>	<b>\$23,702</b>