PARKS & PUBLIC WORKS COUNCIL COMMITTEE & COMMITTEE OF THE WHOLE REGULAR MEETING

Wednesday, September 07, 2022, at 5:00 PM

Snoqualmie City Hall, 38624 SE River Street & Zoom

COMMITTEE MEMBERS
Bryan Holloway, Chair
Jolyon Johnson, Councilmember
Ethan Benson, Councilmember

This meeting will be conducted in person and remotely using teleconferencing technology provided by Zoom.

Join by Telephone at 5:00 PM: To listen to the meeting via telephone, please call **253.215.8782** and enter Webinar ID **867 8554 3964** and Password **1700050121** if prompted.
Press *9 to raise your hand to speak. Raising your hand signals the meeting moderator that you have a comment.
Press *6 to mute and unmute.

Join by Internet at 5:00 PM: To watch the meeting over the internet via your computer, follow these steps:

1) Click this link.
2) If the Zoom app is not installed on your computer, you will be prompted to download it.
3) If prompted for Webinar ID, enter **867 8554 3964**; Enter Password **1700050121**
4) Please confirm that your audio works prior to participating.

CALL TO ORDER & ROLL CALL

PUBLIC COMMENTS

MINUTES

1. Approval of minutes:

    a) August 16, 2022

AGENDA BILLS

2. AB22-115: Awarding an Engineering Contract with Parametrix for the 384th Avenue SE Sewer Replacement
3. AB22-125: Sandy Cove Park Bank Protection and Restoration - Phase 2 Rescoping; Contract Amendment with NHC
4. AB22-126: Amendment #4 with Aspect Consulting for Water Rights Permitting Support and Geotechnical Monitoring

DISCUSSION

5. a) Promotion of Matt Hedger to Water Superintendent

ADJOURNMENT

PARKS & PUBLIC WORKS COUNCIL COMMITTEE & COMMITTEE OF THE WHOLE REGULAR MEETING MINUTES AUGUST 16, 2022

This hybrid meeting was conducted in-person and remotely using teleconferencing technology provided by Zoom in accordance with Governor Inslee's Proclamation 20-28.

CALL TO ORDER & ROLL CALL

Committee Chair Holloway called the meeting to order 5:01 PM

Committee Members:
Committee Chair Bryan Holloway, Councilmember Ethan Benson, and Councilmember Jolyon Johnson were present.

Mayor Katherine Ross was also present.

City Staff:

Mike Chambless, Parks & Public Works Director
Joan Quade, Administrative Assistant
Pat Fry, P.E., Project Engineer
Mike Sauerwein, City Administrator
Andrew Vining, P.E., Project Engineer
Deb Estrada, City Clerk
Mark Gerkin, IT Support
Christopher Miller, IT Support
Phil Bennett, Interim Parks & Maint. Supervisor

AGENDA APPROVAL: Approved as written

PUBLIC COMMENTS

None

MINUTES

July 6, 2022 minutes were approved as written.

AGENDA BILLS

AB22-108	Water Reclamation Facility Phase 3 Update and Amendment to RH2 Services Agreement
Recommendation:	Add to Council agenda, off-consent
AB22-113	Resolution 1621 Adopting the General Sewer Plan and Authorizing Final Submittal to Agencies
Recommendation:	Add to Council consent agenda, off-consent

DISCUSSION ITEMS

1. Emerald Ash Borer Beetle information was presented by Phil Bennett.
2. Pat Fry provided an update and presentation on the sidewalk project status.

ADJOURNMENT

There being no further business to come before the Committee, Committee Chair Holloway adjourned the meeting at 6:07 PM.

_____

Bryan Holloway, Committee Chair

Attest:

_____

Joan Quade, Administrative Assistant

BUSINESS OF THE CITY COUNCIL
CITY OF SNOQUALMIE

AB22-115
September 12, 2022
Consent Agenda

AGENDA BILL INFORMATION

TITLE:	AB22-115: Awarding an Engineering Contract to Parametrix for the 384th Avenue SE Sewer Replacement (Resolution No. 1622)	☐ Discussion Only ☒ Action Needed:
PROPOSED COUNCIL ACTION:	Adopt Resolution No. 1622 Awarding an Engineering Contract to Parametrix for the 384th Avenue SE Sewer Replacement Project	☐ Motion ☐ Ordinance ☒ Resolution

REVIEW:	Department Director/Peer	Mike Chambless	8/26/2022
	Finance	Drew Bouta	8/9/2022
	Legal	Anna Astrakhan	8/3/2022
	City Administrator	Mike Sauerwein	8/29/2022

DEPARTMENT:	Parks & Public Works	
STAFF:	Patrick Fry, Project Engineer	
COMMITTEE:	Parks & Public Works	**COMMITTEE DATE:** September 7, 2022
MEMBERS:	Ethan Benson Bryan Holloway Jo Johnson	
EXHIBITS:	1. Resolution 1622 2. Contract 3. Scope of Work 4. CIP Excerpts 5. Project Extents	

AMOUNT OF EXPENDITURE	$ 479,986.69
AMOUNT BUDGETED	$ $764,300 (2021-22 biennium) $431,000 (2023-2024 biennium)
APPROPRIATION REQUESTED	$ 479,986.69

SUMMARY

INTRODUCTION

This Agenda Bill seeks approval to select Parametrix for the 384th Avenue SE Sewer Replacement and Corridor Re-Design Project and authorize the mayor to sign the Services Agreement. The City sent Request for Qualifications (RFQ's) for the design phase of the project to six on-call engineering firms. Proposals were received from four engineering design firms. Parks & Public Works determined Parametrix to be most qualified. The sewer main replacement will replace the undersized, insufficiently sloped sewer main that has

frequent surcharges. The replacement will correct the aforementioned issues as well as overhaul the road corridor in order to add a sidewalk along the east side of the road from SE Kimball Creek Drive to SE Newton Street.

BACKGROUND

The City of Snoqualmie's Amended 2021-2026 Capital Improvement Plan (CIP) passed in resolution 1578 identifies the need to replace existing utility mains that have reached or exceeded their useful life with new service mains. The stretch of 384th Ave SE from SE Kimball Creek Drive to SE Newton St is insufficient for the current flows with the existing slope and size of the main resulting in regular surcharges to the system. With the Casino expansion planned to be completed in 2025 the system will be inadequate and likely result in failure. The proposal is to replace the limiting 2,000 linear foot section. The construction of the proposed sewer line will result in trenching the length of applicable section of road requiring rebuilding the road. In overhauling the road, a sidewalk is proposed on the east side of the corridor to allow pedestrians from adjacent homes and neighborhoods to safely access the business district. The CIP budgeted a total of $12,763,000 over the 6-year period, with costs starting in 2023.

In Summer of 2022 staff sent out a request for qualifications to six on-call design engineers for professional services for the design of the 384th Avenue SE Sewer Main Replacement. Qualifications were provided by Parametrix, KPG, Gray and Osborne, and TetraTech. A panel of three Parks & Public Works staff reviewed the provided qualifications and selected Parametrix to be the most qualified. City staff worked with Parametrix to prepare a scope of work to complete the design and permitting of the sewer main replacement, the total fee for this work is $479,986.69. Scope of work is provided as Exhibit 4.

Therefore, Parks and Public Works seeks Council approval of selecting Parametrix for the design of the 384th Avenue SE Sewer Main Replacement Project and authorize the mayor to sign the A&E Services Agreement.

BUDGET IMPACTS

Administration recommends approving a contract with Parametrix in the amount of $479,986.69 to complete the design of the 384th Avenue Sewer Main Replacement Project, which is a subproject of the larger Utility Main & Drainage System Replacement Program and Sidewalk Replacement Program. The estimated cost to the Utility Main & Drainage System Replacement Program is approximately $389,986.69 and the estimated cost to the Sidewalk Replacement Program is roughly $90,000.00.

The Utility Main & Drainage System Replacement Program was recently approved as part of the 2023-2028 Capital Improvement Plan (CIP) for $12,763,000 over the six-year period and $3,121,000 during the 2023-2024 biennium (August 2022). However, the City was not expected to incur expenditures for the Utility Main & Drainage System Replacement Program within the 2021-2022 biennium and consequently did not appropriate for such work. In order to accommodate the 384th Avenue Sewer Main Replacement Project within the 2021-2022 biennium, the City proposes offsetting the cost of this contract by reappropriating $389,986.69 from the Water Reclamation Facility Phase 3 improvements for any expenditures incurred this biennium (2021-2022). If Council approves AB22-108, then the City will have a remaining Water Reclamation Facility Phase 3 improvements budget of $3,803,046 which is unlikely to be completely encumbered with approximately five months left to go in the 2021-2022 biennium.

The Sidewalk Replacement Program was also recently approved as part of the 2023-2028 Capital Improvement Plan for $1,367,000 over the six-year period and $431,000 during the 2023-2024 biennium (August 2022). In addition, the Sidewalk Replacement Program was budgeted for $764,300 within the 2021-2022 Biennial Budget. $360,888 has been incurred against the Sidewalk Replacement Program this biennium

to-date with $299,869 in outstanding contractual value. Therefore, the Sidewalk Replacement Program has a remaining budget of $103,542 this biennium.

Given the recommended transfer of appropriation from the Water Reclamation Facility Phase 3 improvements to this project as described above, as well as the remaining Sidewalk Replacement Program budget this biennium, sufficient appropriation exists within the current 2021-2022 Biennial Budget (Utilities Capital Fund (#417) and Transportation Capital Fund (#310)) to fund the contract.

NEXT STEPS

Following Council approval staff will work with the Mayor to execute the final contract agreement with Parametrix. Design of the sewer main replacement & corridor overhaul will commence and be completed by winter 2023. Upon completion of the final design, the 384th Avenue SE Sewer Main Replacement will be advertised for bid and construction. Construction is expected to be completed in Fall 2023.

PROPOSED ACTION

Move to adopt Resolution No. 1622 Awarding an Engineering Contract with Parametrix, Inc. for the 384th Avenue SE Sewer Main Replacement Project and authorize the Mayor to sign.

RESOLUTION NO. 1622

A RESOLUTION OF THE CITY COUNCIL OF CITY OF SNOQUALMIE, WASHINGTON AWARDING AND AUTHORIZING EXECUTION OF AN ENGINEERING CONTRACT WITH PARAMETRIX, INC. FOR THE 384th AVENUE SE SEWER REPLACEMENT AND CORRIDOR RE-DESIGN PROJECT

WHEREAS, pursuant to Ordinance No. 448 as codified in Snoqualmie Municipal Code Section 1.08.010, the City of Snoqualmie has adopted the classification of non-charter code city, retaining the mayor-council plan of government as provided for in Chapter 35A.12 RCW; and

WHEREAS, pursuant to RCW 39.80, agencies contracting for architectural and engineering services must publicly announce requirements for such services, and negotiate contracts for these services on the basis of demonstrated competence and qualification, and at fair and reasonable prices; and

WHEREAS, in the summer of 2022, City staff sent out a request for qualifications for the 384th Avenue SE Sewer Replacement and Corridor Re-design Project (the "Project") to six engineering firms, and received responses from Parametrix, Inc., TetraTech, Inc., Gray and Osborne, Inc., and KPG Psomas.

WHEREAS, after careful evaluation of the four proposals, a three-member panel of City staff selected Parametrix, Inc. as the most qualified firm to work on the Project;

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF SNOQUALMIE, WASHINGTON AS FOLLOWS:

Section 1. Award of Engineering Contract.

The contract for the 384th Avenue SE Sewer Replacement and Corridor Re-design Project is hereby awarded to Parametrix, Inc.

Section 2. Authorization for Contract Execution.

The Mayor is authorized to execute an engineering contract in the amount of $479,986.69 with Parametrix, Inc. in substantially the form attached hereto as Exhibit A.

PASSED by the City Council of the City of Snoqualmie, Washington, this _____ day of _____, 2022.

_____

Katherine Ross, Mayor

Attest:

_____

Deborah A. Estrada, City Clerk

Approved as to form:

_____

Bob C. Sterbank, City Attorney

CITY OF SNOQUALMIE
AGREEMENT FOR CONSULTANT SERVICES
Contract Title: 384th Avenue SE Sewer Replacement

THIS AGREEMENT made and entered into by and between the CITY OF SNOQUALMIE, a Washington municipal corporation (the "City"), and Parametrix, Inc. a Washington corporation ("Consultant") is dated this ____ day of _____ 2022.

Consultant Business: Parametrix, Inc.
Consultant Address: 1019 39th Avenue SE, Ste 100
Puyallup, WA 98374
Consultant Phone: 2 0 6 - 6 0 4 - 6 6 0 0
Consultant Fax: 855.542.6353
Contact Name: Randy Raymond
Contact e-mail: rraymond@parametrix.com
Federal Employee ID No.:

Authorized City Representative for this contract: Michael Chambless, Department Director

WHEREAS, the City desires to replace a sewer main at 384th Ave SE from SE Kimball Creek Drive to SE Newton Street and to construct a sidewalk in the same location;

WHEREAS, public convenience and necessity require the City to obtain the services of a consultant with expertise in the area of sewer main design, sidewalk construction, and permit acquisition; and

WHEREAS, the City finds that Consultant is qualified to perform and is experienced in performing the required services; and

NOW, THEREFORE, the parties herein do mutually agree as follows:

1. Employment of Consultant.

A. The City retains the Consultant to provide the services described in "Exhibit A" (the "Work"). Any inconsistency between this Agreement and the Scope of Work shall be resolved in favor of this Agreement. The Consultant shall perform the Work according to the terms and conditions of this Agreement.

B. The City may revise the Work and the compensation only by a written Change Order signed by the authorized City representative that shall become a part of this Agreement.

C. The project manager(s) of the Work shall be Randy Raymond. The project manager(s) shall not be replaced without the prior written consent of the City.

D. Work shall commence when the City issues a notice to proceed and it shall be completed no later than December 31, 2023, unless the completion date is extended in writing by the City.

2. Compensation.

A. The total compensation to be paid to Consultant, including all services and expenses, shall not exceed $ 479,986.69 as shown on Exhibit B, which shall be full compensation for the Work. Consultant shall notify the City when its requests for payment reach eighty-five percent of the total compensation.

B. The Consultant shall be paid in such amounts and in such manner as described in Exhibit B.

C. Consultant shall be reimbursed for Eligible Expenses actually incurred. "Eligible Expenses" means those types and amounts of expenses that are approved for reimbursement by the City in writing before the expense is incurred. If travel and/or overnight lodging is authorized, Consultant shall lodge within the corporate limits of City.

3. Request for Payment.

A. Not more than once every thirty days the Consultant shall file its request for payment, accompanied by evidence satisfactory to the City justifying the request for payment, including a report of Work accomplished and tasks completed, and an itemization of Eligible Expenses with copies of receipts and invoices.

B. All requests for payment should be sent to

City of Snoqualmie
Attn: Patrick Fry
38624 SE River Street
P.O. Box 987
Snoqualmie, WA 98065

4. Work Product.

A. The Consultant shall submit all reports and other documents specified in Exhibit A according to the schedule established in Exhibit A. If, after review by the City, the information is found to be unacceptable, Consultant, at its expense, shall expeditiously correct such unacceptable work. If Consultant fails to correct unacceptable work, the City may withhold from any payment due an amount that the City reasonably believes will equal the cost of correcting the work.

B. All reports, drawings, plans, specifications, and intangible property created in furtherance of the Work, and any intellectual property in such documents, are property of the City and may be used by the City for any purpose; provided that re-use without Consultant's permission shall be at the City's sole risk.

5. Termination of Contract. City may terminate this Agreement by sending a written notice of termination to Consultant ("Notice") that specifies a termination date ("Termination Date") at least fourteen (14) days after the date of the Notice; provided, however, that in the event of a material breach of this Agreement, termination may be effective immediately or upon such date as determined by the City in its sole discretion. For purposes of this Agreement, "material breach" is defined as misfeasance, malfeasance or violation of any criminal law, ordinance or regulation.. Upon receipt of the Notice, the Consultant shall acknowledge receipt to the City in writing and immediately commence to end the Work in a reasonable and orderly manner. Unless terminated for Consultant's material breach, the Consultant shall be paid or reimbursed for all hours worked and Eligible Expenses incurred up to the Termination date, less all payments previously made; provided that work performed after date of the Notice is reasonably necessary to terminate the Work in an orderly manner. The Notice may be sent by any method reasonably believed to provide Consultant actual notice in a timely manner

6. Assignment of Contract – Subcontractors. Consultant shall not assign this contract or sub-contract or assign any of the Work without the prior written consent of the City.

7. Indemnification.

A. To the extent provided by law and irrespective of any insurance required of the Consultant, the Consultant shall defend and indemnify the City from any and all Claims arising out of or in any way relating to this Agreement; provided, however, the requirements of this paragraph shall not apply to that portion of such Claim that reflects the percentage of negligence of the City compared to the total negligence of all persons, firms or corporations that resulted in the Claim.

B. Consultant agrees that the provisions of this paragraph 7 apply to any claim of injury or damage to the persons or property of consultant's employees. As to such claims and with respect to the City only, consultant waives any right of immunity, which it may have under industrial insurance (Title 51 RCW and any amendment thereof or substitution therefore). THIS WAIVER IS SPECIFICALLY NEGOTIATED BY THE PARTIES AND IS SOLELY FOR THE BENEFIT OF THE CITY AND CONSULTANT.

C. As used in this paragraph: (1) "City" includes the City's officers, employees, agents, and representatives; (2) "Consultant" includes employees, agents, representatives sub-consultants; and (3) "Claims" include, but is not limited to, any and all losses, claims, causes of action, demands, expenses, attorney's fees and litigation expenses, suits, judgments, or damage arising from injury to persons or property.

D. Consultant shall ensure that each sub-consultant shall agree to defend and indemnify the City to the extent and on the same terms and conditions as the Consultant pursuant to this paragraph.

8. Insurance.

A. Consultant shall comply with the following conditions and procure and keep in force at all times during the term of this Agreement, at Consultant's expense, the following policies of insurance with companies authorized to do business in the State of Washington. The Consultant's insurance shall be rated by A. M. Best Company at least "A" or better with a numerical rating of no less than seven (7) and otherwise acceptable to the City.

1. Workers' Compensation Insurance as required by Washington law and Employer's Liability Insurance with limits not less than $1,000,000 per occurrence. If the City authorizes sublet work, the Consultant shall require each sub-consultant to provide Workers' Compensation Insurance for its employees, unless the Consultant covers such employees.
2. Commercial General Liability Insurance on an occurrence basis in an amount not less than $1,000,000 per occurrence and at least $2,000,000 in the annual aggregate, including but not limited to: premises/operations (including off-site operations), blanket contractual liability and broad form property damage.
3. Business Automobile Liability Insurance in an amount not less than $1,000,000 per occurrence, extending to any automobile used by Consultant in the course of the Work. A statement by Consultant and approved by the City Administrator, certifying that no vehicle will be used in accomplishing this Agreement, may be substituted for this insurance requirement.
4. Professional Errors and Omissions Insurance in an amount not less than $1,000,000 per occurrence and $1,000,000 in the annual aggregate. Coverage may be written

on a claims made basis; provided that the retroactive date on the policy or any renewal policy shall be the effective date of this Agreement or prior, and that the extended reporting or discovery period shall not be less than 36 months following expiration of the policy. The City may waive the requirement for Professional Errors and Omissions Insurance whenever the Work does not warrant such coverage or the coverage is not available.

5. Each policy shall contain a provision that the policy shall not be canceled or materially changed without 30 days prior written notice to the City.

Upon written request to the City, the insurer will furnish, before or during performance of any Work, a copy of any policy cited above, certified to be a true and complete copy of the original.

B. Before the Consultant performs any Work, Consultant shall provide the City with a Certificate of Insurance acceptable to the City Attorney evidencing the above-required insurance and naming the City of Snoqualmie, its officers, employees and agents as Additional Insured on the Commercial General Liability Insurance policy and the Business Automobile Liability Insurance policy with respect to the operations performed and services provided under this Agreement and that such insurance shall apply as primary insurance on behalf of such Additional Insured. Receipt by the City of any certificate showing less coverage than required is not a waiver of the Consultant's obligations to fulfill the requirements.

C. Consultant shall comply with the provisions of Title 51 of the Revised Code of Washington before commencing the performance of the Work. Consultant shall provide the City with evidence of Workers' Compensation Insurance (or evidence of qualified self-insurance) before any Work is commenced.

D. In case of the breach of any provision of this section, the City may provide and maintain at the expense of Consultant insurance in the name of the Consultant and deduct the cost of providing and maintaining such insurance from any sums due to Consultant under this Agreement, or the City may demand Consultant to promptly reimburse the City for such cost.

9. Independent Contractor. The Consultant is an independent Contractor responsible for complying with all obligations of an employer imposed under federal or state law. Personnel employed by Consultant shall not acquire any rights or status regarding the City.

10. Employment. The Consultant warrants that it did not employ or retain any company or person, other than a bona fide employee working solely for the Consultant, to solicit or secure this Agreement or pay or agree to pay any such company or person any consideration, contingent upon or resulting from the award or making of this Agreement. For breach or violation of this warranty, the City shall have the right either to terminate this Agreement without liability or to deduct from the Agreement price or consideration or to otherwise recover, the full amount of such consideration.

11. Audits and Inspections. The Consultant shall make available to the City during normal business hours and as the City deems necessary for audit and copying all of the Consultant's records and documents with respect to all matters covered by this Agreement.

12. City of Snoqualmie Business License. Consultant shall obtain a City of Snoqualmie business license before performing any Work.

13. Compliance with Federal, State and Local Laws. Consultant shall comply with and obey all federal, state and local laws, regulations, and ordinances applicable to the operation of its business and to its performance of the Work.

14. Waiver. Any waiver by the Consultant or the City of the breach of any provision of this Agreement by the other party will not operate, or be construed, as a waiver of any subsequent breach by either party or prevent either party from thereafter enforcing any such provisions.

15. Complete Agreement. This Agreement contains the complete and integrated understanding and agreement between the parties and supersedes any understanding, agreement or negotiation whether oral or written not set forth herein.

16. Modification of Agreement. This Agreement may be modified by a Change Order as provided in Paragraph 1, or by a writing that is signed by authorized representatives of the City and the Consultant.

17. Severability. If any part of this Agreement is found to be in conflict with applicable laws, such part shall be inoperative, null and void, insofar as it is in conflict with said laws, the remainder of the Agreement shall remain in full force and effect.

18. Notices.

A. Notices to the City of Snoqualmie shall be sent to the following address:

City of Snoqualmie
Attn: Patrick Fry
38624 SE River Street
P.O. Box 987
Snoqualmie, WA 98065

B. Notices to the Consultant shall be sent to the following address:

19. Venue. This Agreement shall be governed by the law of the State of Washington and venue for any lawsuit arising out of this Agreement shall be in King County.

IN WITNESS WHEREOF, the City and Consultant have executed this Agreement as of the date first above written.

	CONSULTANT: Please fill in the spaces and sign in the box appropriate for your business entity.
CITY OF SNOQUALMIE, WASHINGTON By:_____ Its: Mayor Date:_____	Corporation [Consultant's Complete Legal Name] By:_____ Typed/Printed Name:_____ Its:_____ Date:_____
ATTEST: Deborah Estrada, City Clerk Date:	
APPROVED AS TO FORM: Bob C. Sterbank, City Attorney Date:_____	

SCOPE OF WORK

City of Snoqualmie
384th Avenue SE Sewer Replacement

PROJECT OVERVIEW

The City of Snoqualmie (City) desires to replace approximately 2,100 linear feet of 10-inch-diameter gravity sanitary sewer pipe with new 12-inch-diameter pipe on 384th Avenue SE between SE Newton Street and Kimball Creek Drive. The City also desires to construct a sidewalk on the easterly side of the roadway between SE Newton Street and Kimball Creek Drive. The project is located entirely in King County (County) rights-of-way. This scope of work includes services for field investigation, design, permitting, and bidding phase support for this project.

GENERAL ASSUMPTIONS

The following assumptions apply to this entire scope of work. Any deviations from these assumptions may require an amendment to the portion of the scope and budget that is impacted by changes:

- The total project duration will not exceed 15 months from the Notice to Proceed date.
- Plans, Specifications, and Estimates will be provided by Parametrix in City Standard formats where available. Technical special provisions will be prepared in WSDOT format.
- The City will directly pay any permit fees required for the project.
- The City will be responsible for any advertisements associated with the permitting process.
- This scope of work does not include acquisition of right-of-way or temporary construction easements.
- While Parametrix will endeavor to expedite permitting, Parametrix does not control agency permitting timelines and is not responsible for delays to the project or related impacts resulting from agency permit review timelines.
- This scope does not include services during construction. These services will be provided under a separate scope of work to be developed once the details of the construction project and permit requirements are more fully developed.

Parametrix will provide the following services:

PHASE 1 –DESIGN

TASK 01 – Project Management and Meetings

Objective

Monitor and manage scope, schedule, and budget, and periodically meet with the project team and City to review project status.

Activities

- Manage and direct Parametrix project design team.
- Provide routine internal project management and communications (scope, schedule, budget, invoicing, etc.).
- Prepare and submit progress reports and progress billings.
- Schedule, prepare for, attend, and document the project kickoff meeting.
- Schedule, prepare for, and attend biweekly coordination and check-in meetings.

Assumptions

- The project kickoff meeting will be conducted in person at the City and will include up to three Parametrix staff for up to 5 hours each, including travel time.
- Internal quality assurance/quality control (QA/QC) and addressing internal QC comments is included in each task. QA/QC documentation will be retained by Parametrix.
- Coordination and check-in meetings will be conducted virtually.

Deliverables

- Project Schedule (electronic only, Microsoft Project format).
- Monthly progress reports including a progress letter and invoice complying with City of Snoqualmie format requirements.

TASK 02 – Data Collection

Objective

Collect and review documentation of the existing project site. Obtain geotechnical data, utility locates, critical area delineation, stormwater design requirements, and topographic survey to support design.

Activities

- Obtain and review existing records of City utilities in the project area.
- Parametrix will hire an underground utility locate firm to mark buried utilities such as gas, power, telephone, TV cable, and storm drainage in the project area, if such utilities have a conductible source or tracer lines attached. Per the assumptions below, the City will provide locates for water and sewer.
- Parametrix will conduct a field delineation of wetlands, streams, and buffers within the study area; perform wetland ratings; and determine Washington State Department of Natural Resources (DNR) water type for streams related to Kimball Creek within the project limits. Wetland delineation and rating forms will be prepared.
    - Delineate wetlands within the study area following the United States Army Corps of Engineers (Corps) Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0) (USACE 2010).

  - Delineate other waters in the study area using the Corps Regulatory Guidance Letter 05-05 for ordinary high water mark (OHWM) identification methods for nontidal waters and jurisdictional ditch centerlines.
  - Assess fish and wildlife habitat.
  - Rate each wetland using the Washington State Wetland Rating System for Western Washington – 2014 Update (Hruby 2014). The applicable King County Critical Areas Ordinance sections will be reviewed for applicable regulatory buffer widths.

- Parametrix surveyors will use existing horizontal and vertical control in the project area. Mapping will consist of locating existing improvements and ground conditions within the right-of-way (ROW). Parcel lines and ROW limits will be based upon the applicable public records. Ground features including tops and toes, breaks, edge of pavement, and ditches will be mapped at sufficient detail to create 1-foot contours. Fences, driveways, power poles, overhead utilities, utility locate marks, water hydrants, utility valves, utility structures, wetland boundary delineation, OHWM, and other physical visible improvements will be mapped. Sanitary and storm structures will be opened and measurements will be made identifying size, type, and invert elevation of incoming and outgoing pipes. Valve boxes will be opened and measure-downs to top of valves will be made. The survey will include the edge of asphalt and the edge of gravel shoulders, pavement markings, edges and types of driveway surfacing, and existing curbs, sidewalks, and sidewalk ramps. Once the field work has been completed, a survey technician will process the data and prepare a base map using AutoCAD Civil 3D.
- Parametrix will coordinate with King County to determine project-specific stormwater design requirements and floodplain management requirements.
- Subconsultant Aspect Consulting, will perform geotechnical exploration and groundwater monitoring and analyze dewatering and subgrade conditions for sewer construction, as well as infiltration characteristics for stormwater management design in accordance with the attached scope of work (Exhibit C).

Assumptions

- The City will provide available record drawings, the existing sewer television inspection video, and other available data regarding the existing sewer and water utilities on the project site within 2 weeks of Notice to Proceed.
- The wetland/critical areas site visit will include delineation of wetland boundaries and the OHWM of Kimball Creek on lands between the road and the creek along the roadway prism (up to 500 feet). Wetland delineation forms will be incorporated in the deliverables provided under Task 04. The site visit does not include any off-site delineation work.
- The City will provide utility locates for water and sewer prior to survey of the site.
- The County will provide record drawings for existing storm drain systems owned by the County.
- The City will verify that all sanitary sewer manholes are uncovered and can be opened using a standard manhole hook prior to survey of the site.
- Title reports will not be ordered for this work; boundary information will be based upon recorded information researched through the King County Auditor.
- Property corners will not be set, nor will a Record of Survey be prepared.

- The project limits will be contained within existing public rights-of-way. There will be no parcel acquisitions for sidewalk construction or stormwater management facilities.
- Horizontal Datum: North American Datum of 1983 (NAD 83/91) Washington State Plane Coordinate System, North Zone adjusted to Washington State Reference Network (WSRN).
- Vertical Datum: North American Vertical Datum of 1988 (NAVD) 1988 per WSRN.

Deliverables

- Topographic base map prepared in AutoCAD Civil 3D format.
- Preliminary wetlands, waters, and buffers map in AutoCAD Civil 3D format.

TASK 03 – Design

Subtask 03.01 – Basis of Design (10 Percent Design)

Objective

Analyze alternatives for sidewalk construction and prepare a preliminary sewer alignment for review by the City.

Activities

- Using the information acquired under Task 02, analyze up to three alternatives for construction of a sidewalk on the east side of the roadway. Alternatives will consider grade separation (curb and gutter), horizontal separation with barrier, and realignment of the roadway to accommodate the sidewalk. Analysis will include:
  - Maximizing width to accommodate mixed use, if feasible.
  - Maintaining the existing ROW width.
  - Minimizing impacts to existing utility infrastructure and property improvements.
  - Evaluating stormwater requirements by Threshold Discharge Area (TDA) for each alternative, with the goal of minimizing stormwater impacts. Considerations will include use of pervious pavement for the sidewalk, replacement of existing roadway surfacing (as required by the King County ROW permit) and impacts to existing stormwater infrastructure.
  - Preparing a permitting requirement matrix for each alternative with the goal of avoiding wetland impacts and floodplain impacts.
  - Providing planning-level costs for each alternative.
  - Evaluating requirements for compliance with Washington State Transportation Improvement Board (TIB) funding.
- Prepare a draft and final Sidewalk Alternatives Analysis memorandum.
- Prepare a preliminary plan and profile view of the proposed sewer alignment(s).
- Attend a Basis of Design review meeting to discuss the draft Sidewalk Alternatives Analysis memorandum, preliminary sewer plan and profile, and stormwater design approach. Select a preferred sidewalk alternative, sewer alignment, and stormwater design approach. Discuss and resolve any design issues apparent at this level of design, and document comments to be addressed as design moves forward.

Assumptions

- Because the project is located in King County ROW, the stormwater design will be based on the 2021 King County Surface Water Design Manual (KC SWDM).
- Sewer pipe sizing will not be evaluated; sizing will be in accordance with the January 2022 analysis provided by others.
- The preliminary sewer alignment(s) will address main line sewer and existing utilities only; side sewers will not be included.
- The final Sidewalk Alternatives Analysis memorandum will be stamped and signed by a professional engineer licensed in the State of Washington.
- The 10 percent sewer and storm submittal will be stamped by a professional engineer licensed in the State of Washington but will not be signed or dated.
- The Basis of Design review meeting will be conducted at the City and will include three Parametrix staff for up to 5 hours, including travel time.
- Any comments made on the Basis of Design will be addressed in the 50 percent design task.

Deliverables

- Draft and final Sidewalk Alternatives Analysis memorandum.
- Basis of Design roll plots for sidewalk, sanitary sewer, and stormwater in PDF format. Hard copy roll plots will be provided at the review meeting.

Subtask 03.02 – Design Development (50 Percent Design)

Objective

Continue adding detail to the 10 percent Basis of Design, address comments from the Basis of Design review meeting, cut plan sheets, and provide preliminary engineer's opinion of probable construction cost (EOPCC).

Activities

- Develop plan and profile sheets for the sidewalk, storm drainage improvements, and sanitary sewer including side sewers.
- Prepare an EOPCC based on estimated quantities and costs for lump-sum items as determined by the 50 percent plans.
- Perform internal QC review of the 50 percent deliverable package prior to submittal to the City.
- Attend a 50 percent design review meeting to review the 50 percent design with the City, and document comments to be addressed as design moves forward.
- Parametrix staff will meet once either on the site or at the City Public Works Building to review any utility conflicts with the utility companies that provide service in the project limits.

Assumptions

- Grading design for up to 14 driveway and two roadway intersection impacts with up to eight pedestrian ramps will be included. SE 85th Court, SE 86th Place, and SE Roberts Court will be designed as driveway approaches.
- Retaining walls, if required, will consist of gravity block walls less than 4 feet in height.
- TESC BMPs will be shown for submittals following the 50 percent design.
- The 50 percent submittal sheets will be stamped by a professional engineer licensed in the State of Washington but will not be signed or dated.
- The 50 percent design review meeting will be conducted at the City and will include up to three Parametrix staff for up to 5 hours each, including travel time.
- The utility conflict meeting will be conducted at the City and will include up to three Parametrix staff for up to 5 hours each, including travel time.
- Any City or County comments made on the 50 percent design will be addressed in the 90 Percent Design task.

Deliverables

- Comment response log addressing the 10 percent review comments (Electronic only, Excel format).
- 50 percent Draft Drawings, (electronic only, PDF format).
- 50 percent EOPCC (electronic only, PDF and Excel formats).

Subtask 03.03 – Near-Final Design (90 Percent Design)

Objective

Complete 90 percent near-final plans, specifications, and EOPCC for the project.

Activities

- Develop 90 percent near-final plans, including details and traffic control plans, and incorporating comments received on the 50 percent design. The 90 percent Plans are assumed to include:

Cover Sheet, Legend, and Notes	3 Sheets
Survey and Horizontal Control Plans	3 Sheets
TESC Plans	5 Sheets
Sidewalk and Storm Drainage Plan and Profile	5 Sheets
Intersection and Driveway Grading Plans and Details	5 Sheets
Sidewalk and Storm Drainage Details and Sections	4 Sheets
Sewer Plan and Profile	5 Sheets
Sewer Details	3 Sheets
Traffic Control Plans	3 Sheets
Total:	**36 Sheets**

- Develop 90 percent specifications.
- Update the EOPCC to reflect the 90 percent design.

- Prepare a Construction Stormwater Pollution Prevention Plan (CSWPPP), including and Erosion and Sediment Control (ESC) Plan and a Stormwater Pollution Prevention and Spill (SWPPS) Plan.
- Perform internal QC review of the 90 percent deliverable package prior to submittal to the City.
- Attend a 90 percent design review meeting to review the 90 percent design with the City, and document comments to be addressed in the final bid documents.

Assumptions

- The 90 percent submittal sheets will be stamped by a professional engineer licensed in the State of Washington but will not be signed or dated.
- The 90 percent design review meeting will be conducted at the City and will include up to two Parametrix staff for up to 5 hours each, including travel time.
- Any City or County comments made on the 90 percent submittal will be addressed in the Final Design submittal.

Deliverables

- Comment response log addressing the 50 percent review comments (electronic only, Excel format).
- 90 percent Plans (electronic only, PDF format).
- 90 percent Specifications (electronic only, PDF and Word formats).
- 90 percent EOPCC (electronic only, PDF and Excel formats).

Subtask 03.04 – Final Bid Documents

Objective

Complete bid-ready Final plans, specifications, and EOPCC for the project.

Activities

- Parametrix will develop 99 percent Check-Set plans, specifications including contract form and proposal, and EOPCC for the project. Comments received on the 90 percent Check Set will be addressed in the 99 percent documents.
- Parametrix will develop Final plans, specifications including contract form and proposal, and EOPCC for the project. Comments received on the 99 percent Check Set will be addressed in the Final documents.
- Any King County permitting requirements or comments received after the 90 percent submittal will be reviewed with the City and incorporated in the 99 percent and Final documents.
- Perform internal QC review of the 99 percent Final documents prior to submittal to the City.

Assumptions

- The 90 percent submittal sheets will be stamped by a professional engineer licensed in the State of Washington but will not be signed or dated.
- The Final documents will be stamped and signed by a professional engineer licensed in the State of Washington.

Deliverables

- Comment response log addressing the 90 percent review comments (electronic only, Excel format).
- 99 percent Specifications (electronic only, PDF and Word formats).
- 99 percent EOPCC (electronic only, PDF and Excel formats).
- 99 percent Check-Set Plans (electronic only, PDF format).
- Comment response log addressing the 99 percent review comments (electronic only, Excel format).
- Final Plans (One hard copy on 22 x 34 bond and electronic, PDF, and AutoCAD formats).
- Final Specifications (electronic only, PDF and Word formats).
- Final EOPCC (electronic only, PDF and Excel formats).

Task 04 – Permitting

Objective

Lead the process to apply for and receive a King County Right-of-Way permit and any environmental permits required to construct the project.

Subtask 04.01 – King County Right-of-Way Permit Application

Objective

Obtain a King County Right-of-Way Permit for Franchised Utilities covering the utility and sidewalk construction activities included in the project.

Activities

- Review the King County franchise agreement covering the 384th Avenue SE Sewer.
- Prepare a King County Right-of-Way Permit application.
- Coordinate with King County for processing of the Right-of-Way Permit application.

Assumptions

- The sewer and sidewalk work will be covered under a single Right-of-Way Permit application.
- The project will not require an update to the King County franchise agreement.
- The project plans will be provided with the permit application. No additional figures will be required to complete the application.

Deliverables

- Draft and final King County Right-of-Way Permit application (electronic only, PDF format).

Subtask 04.02 – SEPA Checklist

Objective

Prepare a State Environmental Policy Act (SEPA) checklist to help the City determine whether the project will have significant adverse environmental impacts.

Activities

- Prepare SEPA checklist.

Assumptions

- No additional studies beyond this scope of work or additional information provided by the City will be required to complete the SEPA checklist.
- The City is the Lead Agency for SEPA.
- The City will be responsible for publishing of the public notification and managing the SEPA process.

Deliverables

- Draft and final SEPA checklist.

Subtask 04.03 – Critical Areas Report

Objective

Using the delineations performed in Task 02, prepare a report documenting wetland and water boundaries and applicable critical area buffers. Because the critical area buffers can be reduced to the edge of the roadway, this technical memorandum will include a buffer reduction plan.

- Kimball Creek and associated wetlands along with residential development are present on the east side of the road beyond the roadway prism. The west side of the road is residential development. Per King County's Critical Areas Ordinance, where a legally established road transects a critical area buffer for wetlands and waters, the minimum required buffer width may be reduced to the edge of the roadway (including all maintained and traveled areas, shoulders, pathways, sidewalks, ditches and cut and fill slopes) (per King County Critical Area Ordinance [KCCAO] 21A.24.325,C.4 for wetland buffers and 21A.24.358.E.1.d for aquatic areas).

Activities

- Prepare a critical areas report documenting field methodologies, results, wetland ratings, and a buffer reduction plan.

Assumptions

- This task does not include assessment of geologic hazard or floodplain critical areas.
- Resource boundaries will be flagged, recorded using GPS, and surveyed.

- Buffer rating and wetland determination forms, appropriate maps, and other required attachments will be included in the technical memorandum.
- Critical area buffers may be reduced to the edge of maintained roadway prism by King County with no requirements for additional mitigation.

Deliverables

- Draft and final wetland and critical areas and buffer reduction plan report.

Subtask 04.04 – Cultural Resources Services

Objective

The project will disturb earth below the existing road fill prism for construction of the sewer line. It is anticipated that Tribal coordination, a cultural resources study, and reporting will likely be required for compliance with the Governor's Executive Order 21-02 (GEO 21-02) based on the project receiving State funding (TIB funds).

Activities

- Prepare GEO 21-02 EZ Project Form for submittal to Department of Archaeology and Historic Preservation (DAHP) early in the project process.
- City and Parametrix will conduct limited coordination with local Tribes.
- Cultural resources subconsultant Cultural Resource Consultants, LLC will conduct cultural resources background review and site investigation including:
  - Literature research and review of the Washington Information System for Architectural and Archaeological Records Data (WISAARD) database.
  - A systematic pedestrian survey of all areas to be affected by ground disturbance by proposed construction activity.
  - Archaeological monitoring of preconstruction ground disturbance anticipated to exceed depth of fill, such as geotechnical explorations.
- Prepare a cultural resources report for GEO 21-02 compliance and per requirements for DAHP and Tribal coordination.

Assumptions

- The cultural resources field study area **will consist of the project limits.**
- No more than two days of archaeological monitoring will be required during preconstruction ground disturbance.
- No more than **one archaeological resource and no historic resources** will be recorded.
- No federal permits or funding will be required; therefore, compliance with Section 106 of the National Historic Preservation Act will not be required.

Deliverables

- GEO EZ 21-02 Form provided as a PDF.

- Draft and final Cultural Resource Survey Report provided as Word and PDF documents.

Subtask 04.05 – Critical Areas Permitting

Objective

Prepare critical area permit applications for the County noted below to account for construction and mitigation of the project on the site.

Activities

Anticipated permits required for the design and mitigation portion of this project include the following critical area permits:

- Floodplain Permit – Floodplain technical memorandum will be submitted with the Critical Areas permit submittal
- Wetlands and Fish and Wildlife Critical Areas Permit – Critical areas report and buffer reduction plan will be submitted with the Critical Areas permit submittal.

Following 30 percent design, Parametrix will coordinate with City and County to verify permitting and design assumptions, options for variances, or expedited permitting at a pre-application meeting.

Parametrix will prepare draft and final permit applications and required supporting documentation as listed in the "Deliverables" section below for submittal to the County. All applications and documentation will be provided to the City for draft review and final application to the City and County in electronic format only.

Assumptions

- Due to the variable nature of permitting requirements as the design progresses, any permitting requirements beyond the typical scope of work may require a change order.
- The project will have "no effect" on Endangered Species Act (ESA) listed species or direct wetland or waters impacts; therefore, no federal permits will be required.
- The construction contractor will be responsible for obtaining and complying with an Ecology National Pollutant Discharge Elimination System (NPDES) Construction Stormwater Permit.
- This scope does not include tasks associated with compliance during construction.
- Minimal impacts to the floodplain are anticipated, so a technical memorandum documenting compliance with the County's floodplain ordinance will be sufficient for permitting.
- Aside from a Right-of-Way Permit and critical areas permitting for floodplains, wetlands, and fish and wildlife areas, no other local land-use approvals will be required.
- The project area is not within or adjacent to a Shoreline Management area.
- This task does not include permitting of geologic hazard critical areas.
- All other State and Federal permits will not be required.

Deliverables

Draft and final deliverables include:

- Critical Areas Application
  - Pre-application packet
  - Critical Areas Report and Buffer Mitigation Plan (prepared under separate Subtask 04.03)
  - Floodplain Memorandum
  - Critical Areas Permit Application Form

Task 05 – Bid Support

Objective

Assist the City as needed in the bidding process.

Activities

- Upload the Bid documents to the Builder's Exchange.
- Attend a pre-bid walkthrough with bidders.
- Assist the City in responding to bidder inquiries as needed.
- Prepare a bid tabulation.
- Check bidder references and qualifications.

Assumptions

- Parametrix will provide bid clarifications and addenda for the project up to the hour limit identified in Exhibit B.
- The City will be responsible for advertising the project and maintaining the plan holder list.
- The pre-bid walkthrough will include two Parametrix staff for up to 5 hours each, including travel time.

Deliverables

- Responses to bidder inquiries in appropriate electronic format.
- Bid Tabulation (electronic only, PDF and Excel formats).

Task 06 – Management Reserve

A management reserve of $25,000.00 is included in the overall project budget. The management reserve will be used to address minor changes to the project scope and will only be used with specific written authorization from the City.

Budget

The total compensation for this work shall not exceed $479,986.69, including management reserve, as outlined in the attached budget spreadsheet (Exhibit B).

Client: City of Snoqualmie
Project: Snoqualmie 384th Ave SE Sewer/Sidewalk
Project No: 216-3809-820

2 weeks of mtgs?

Seems high

Task	SubTask	Description	Labor Dollars	Labor Hours	Randolph S. Raymond	Dmitri V. Suslikov	Jeffrey L. Coop	Cindy Clark	Armando Mendoza	Justin Emery	Steven N. Sharpe	Michael D'Agostino	Taylor E. Walcker	Taya K. MacLean	M. Younis Mahmoodi	Kaylee Moser	Claire Hoffman	Jennifer Hughes	Courtney Ziegler	Christopher E. Hiatt	Sandra L. Cosgrove	Sarah A. Crackenberger	Amanda Lucas
				Rates:	Sr Consultant $256.09	Sr Engineer $199.92	Sr Engineer $219.33	Sr. Consultant $301.51	Engineer III $136.40	Survey Supervisor $191.21	Technical Lead $134.76	Surveyor III $122.95	Surveyor I $78.99	Sr Scientist/Biologist $204.35	Engineer III $145.76	Scientist/Biologist III $123.60	Sr Scientist/Biologist $178.87	Senior Planner $183.33	GIS Analyst $96.10	Sr Engineer $193.75	Project Controls Specialist $124.99	Project Accountant $113.55	Publications Supervisor $125.74
01		**Project Management & Meetings**	**$35,953.99**	**199**	**64**	**10**	**16**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**8**	**0**	**0**	**0**	**0**	**0**	**76**	**12**	**8**
	01	Project Management	$20,111.68	120	40																60	12	8
	02	Meetings	$15,842.30	79	24	10	16							5	8						16		
02		**Data Collection**	**$31,330.52**	**224**	**10**	**14**	**8**	**0**	**0**	**8**	**40**	**40**	**40**	**4**	**16**	**18**	**12**	**0**	**2**	**0**	**4**	**0**	**8**
	01	Data Collection	$9,434.35	50	8	14	8								16						4		
	02	Critical Areas Delineation	$6,386.68	44										4		18	12		2				8
	03	Survey	$15,509.49	130	2					8	40	40	40										
03		**Design**	**$267,884.64**	**1,439**	**156**	**398**	**148**	**47**	**68**	**0**	**0**	**0**	**0**	**12**	**488**	**0**	**0**	**0**	**0**	**52**	**0**	**0**	**70**
	01	Basis of Design (10% Design)	$43,901.33	224	28	80	32	4	8					12	44					8			8
	02	Design Development (50% Design)	$88,902.98	487	48	128	44	15	32						200					12			8
	03	Near-Final Design (90% Design)	$92,126.23	494	60	110	60	20	24						164					20			36
	04	Final Bid Documents	$42,954.10	234	20	80	12	8	4						80					12			18
04		**Permitting**	**$34,918.00**	**212**	**10**	**8**	**24**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	**20**	**45**	**8**	**49**	**18**	**0**	**0**	**0**	**16**
	01	King Co. ROW	$7,551.35	42	4	8	4								16			8					2
	02	SEPA Checklist	$5,081.37	29	1		2							4				16	4				2
	03	Critical Areas Report	$11,247.11	84	1		2							4	4	45	8		12				8
	04	Cultural Resources	$817.41	4										4									
	05	Critical Areas Permitting	$10,220.76	53	4		16							2				25	2				4
05		**Bid Support**	**$14,456.79**	**80**	**12**	**16**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**16**	**0**	**0**	**0**	**0**	**4**	**12**	**0**	**8**
	01	Bid Support	$14,456.79	80	12	16	8							4	16					4	12		8
06		**Management Reserve**	**$25,000.00**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	MR	Management Reserve	$25,000.00	0																			
		Labor Totals:	$409,543.93	2,154	252	446	204	47	68	8	40	40	40	39	548	63	20	49	20	56	92	12	110
		Escalation Amt:			$2,581.40	$3,566.55	$1,789.69	$566.83	$371.01	$61.19	$215.61	$196.71	$126.38	$318.79	$3,195.10	$311.46	$143.10	$359.33	$76.88	$434.00	$459.97	$54.51	$553.24
		Totals:	**$424,925.69**		**$67,116.33**	**$92,730.43**	**$46,531.99**	**$14,737.61**	**$9,646.21**	**$1,590.85**	**$5,605.89**	**$5,114.55**	**$3,285.90**	**$8,288.52**	**$83,072.68**	**$8,098.08**	**$3,720.50**	**$9,342.70**	**$1,998.88**	**$11,284.00**	**$11,959.23**	**$1,417.14**	**$14,384.20**

Also seems high

Subconsultants	
Applied Professional Services Inc	$2,112.00
Aspect Consulting, LLC	$45,540.00
Cultural Resource Consultants, LLC	$5,269.00
Subconsultants Total:	**$52,921.00**

Other Direct Expenses	
Mileage @ .625/mile	$1,500.00
Survey Equipment ($160/Day)	$640.00
Other Direct Expenses Total:	**$2,140.00**

Project Total **$479,986.69**


Snoqualmie City Hall
Newton Ave
Downtown Business Distric
St. Joseph Elementary School
2100'
Encompass Child Devolopment Center
SE Kimball Creek Drive
Encompass Child Development Center
Northwest Railway Museum
Snoqualmie River
Riverview Park
Rooster Valley Farm School
our lady of sorrows snoqualmie
Mt Si High School
Imagination Learning Center
SE Northern St
SE Fir St
SE River St
Boone Ave SE
384th Ave SE
SE Park St
SE Gamma St
SE Beta St
SE 84th St
SE 86th Pl
SE 85th St
SE 88th St
382nd Ave SE
381st Pl SE
Kimball Creek
SE Roberts Ct
2D
100 m
Camera: 453 m 47°31'40"N 121°49'44"W 123 m
Google
100%
Landsat / Copernicus

BUSINESS OF THE CITY COUNCIL
CITY OF SNOQUALMIE

AB22-125
September 12, 2022
Committee Report

AGENDA BILL INFORMATION

TITLE:	AB22-125: Sandy Cove Park Bank Protection and Restoration - Phase 2 Rescoping; Contract Amendment with NHC	☐ Discussion Only ☒ Action Needed:
PROPOSED ACTION:	Approve the amendment to Task Order 38 agreement with Northwest Hydraulic Consultants (NHC) for Final Design of the Sandy Cover Bank Stabilization Project	☒ Motion ☐ Ordinance ☐ Resolution

REVIEW:	Department Director/Peer	Mike Chambless	8/30/2022
	Finance	Drew Bouta	8/30/2022
	Legal	Bob Sterbank	8/30/2022
	City Administrator	Mike Sauerwein	8/30/2022

DEPARTMENT:	Parks & Public Works	
STAFF:	Jeff Hamlin, PE; City Engineer	
COMMITTEE:	Parks & Public Works	**COMMITTEE DATE:** September 6, 2022
MEMBERS:	Bryan Holloway Ethan Benson Jo Johnson	
EXHIBITS:	1. Amendment No. 1 to NHC Task Order 38 2. Scope Proposal; Sandy Cove Park Bank Protection and Restoration – Phase 2 Rescoping 3. Original Task Order; Sandy Cover Park Bank Protection and Restoration – Phase 2; dated January 29, 2019 4. CIP Project Page	

AMOUNT OF EXPENDITURE	$ 487,168.00
AMOUNT BUDGETED	$ 5,919,364.00
APPROPRIATION REQUESTED	$ 487,168.00

SUMMARY

INTRODUCTION

The Preliminary Design and permitting budget for the riverbank stabilization project is nearly expended. This agenda bill provides for the final design and bid support for the project.

LEGISLATIVE HISTORY

AB19-011 – Northwest Hydraulic Consultants Task Order 38, Sandy Cove Design and Permitting Phase 2

BACKGROUND

The PSE weir modifications were made during the 2014 NHC study (first issued in April 2013), and NHC made

several recommendations related to the resulting changes to the hydraulics and geomorphology of the project reach:

- At the time of NHC (2014), the most recent hydraulic model calibration that had been performed was documented in 2008, before the weir at Snoqualmie Falls was lowered. NHC (2014) recommended that new calibration be performed after water-level data is collected from a post weir modification flood.
- The NHC (2014) geomorphic assessment noted the growing influence of significant gravel bars in the Snoqualmie River reach. In particular, erosion at the project site is likely the result of mid-channel gravel bar growth in the channel at Sandy Cove Park. The lowering of the PSE weir at Snoqualmie Falls lowered the water surface through the river reach and this is expected to further increase the relative prominence of gravel bars and their hydraulic impact on the flow. Additionally, lowering the weir will increase the hydraulic power and gravel bedload transport into the reach. Since sand and gravel have a direct impact on the stability of the river and riverbanks, this transition has a major impact on banks at the Park.

ANALYSIS

A continuation of the Phase 2 scope of work is needed to continue the federal, state, and local permitting process for the bank protection and restoration project at Sandy Cove Park. NHC prepared and submitted a Joint Aquatic Resources Permitting Application (JARPA) for a Nationwide Permit (NWP) in January 2020 under the original Phase 2 scope of work. Upon review of the JARPA submittal, the US Army Corps of Engineers (Corps) transferred the project to a new Project manager on June 18, 2020, initiated an Individual Permit (IP) permitting path and requested an Alternative Analysis Framework analysis as part of the IP process during a meeting on July 9, 2020.

Corps and stakeholder review of the 2020 JARPA submittal and associated Alternatives Analysis were delayed by the COVID-19 pandemic, which lead to inadequate time for Washington Department of Ecology (Ecology) review of the application within their 12-month review period. In July 2021, the Corps recommended the project be withdrawn from Ecology review and a new application started. Significant out-of-scope efforts conducted to date include the Alternatives Analysis (Approved in September 2021), and preparation of temporary/emergency Stabilization concepts (September 2021). Following the completion of the Alternatives Analysis, a draft Mitigation Plan with suggested mitigation alternatives and mitigation ratios was submitted to the previous USACE project manager on January 30, 2020. Consultation regarding finalizing mitigation alternatives and mitigation ratios is anticipated to occur with a USACE project manager, once assigned. This process is on hold until the USACE appoints a new project manager.

BUDGET IMPACTS

Administration recommends approving an amendment to Task Order 38 with Northwest Hydraulic Consultants (NHC) in the amount of $487,168 to complete the design of the Sandy Cove Park Riverbank Restoration and Outfall Project. Council approved the project as part of the Utilities CIP as adopted on November 23, 2020 (AB20-104) but then removed the project from the amended CIP as adopted on April 12, 2021 (AB21-024). The purpose of its removal was to require the Administration to bring back a presentation regarding the need, scope, and cost of the project, at which time Council may decide to add back the project to the CIP. On November 8, 2021, and without such a presentation, Council amended the 2021-2022 Biennial Budget to align the budget with the amended CIP. Consequently, the City has budgeted $0 during the 2021-2022 biennium for the Sandy Cove Park Riverbank Restoration and Outfall Project. Subsequently, Council has toured the Sandy Cove Park riverbank restoration site and listened to staff regarding the need, scope, and cost of the project. In addition, Council adopted the 2023-2028 CIP on August 8, 2022 that included the Sandy Cove Park Riverbank Restoration and Outfall Project for a total of $5,500,000 with $3,618,000 expected to be budgeted for the 2023-2024 biennium. An estimated $394,059 (the portion of the Task Order No. 38 contract tied to Sandy Cove is equal to $388,741) has been incurred against the project budget to-date with $0 in contractual value. When accounting for this amendment, the City will have a remaining project budget of $4,877,042.

In order to accommodate any expenditures that may occur from this amendment within the current 2021-2022 biennium, the City proposes offsetting the cost by reappropriating budget from the Kimball Creek Riparian Restoration Project (2021-2022 appropriation = $2,241,926). No expenditures have been incurred against the Kimball Riparian Restoration Project budget to-date. Therefore, sufficient appropriation exists within the current 2021-2022 biennial budget (Utilities Capital Fund #417) to fund the amendment.

NEXT STEPS

Next steps include completion of the final design and permitting effort in preparation for Summer 2023 bid advertisement.

PROPOSED ACTION

Move to approve the amendment with Northwest Hydraulic Consultants Task Order 38 Sandy Cove Design Phase 2, and authorize the Mayor to sign.

CITY OF SNOQUALMIE
AGREEMENT FOR CONSULTANT SERVICES
Amendment No. 1 to NHC Task Order 38
Sandy Cove Park Bank Protection and Restoration (Phase 2) Rescoping

WHEREAS, on January 23, 2017, Northwest Hydraulic Consultants, Inc. ("NHC") entered into an Agreement with the City of Snoqualmie ("City"), which provides for NHC to perform unspecified professional services in hydraulics, hydrology, and related fields on an on-call basis, with specific work items to be identified in subsequent Task Orders ("Prime Agreement").

WHEREAS, on January 28, 2019, the City entered into Task Order No. 38 under the Prime Agreement for the Sandy Cove Park Bank Protection and Restoration – Phase 2 project; and

WHEREAS, the City has requested that NHC complete the Sandy Cover Bank Stabilization design and permitting effort, including updating design drawings, resubmitting permit applications, and completing a Conditional Letter of Map Revision (CLOMR); and

WHEREAS, NHC has the resources and capability to perform this work and has provided a scope of work and an hour and fee estimate for such additional work;

NOW, THEREFORE, the parties herein do mutually agree as follows:

Section 1. Scope of Work Amended. Section 1 ("Scope of Work") of the January 28, 2019 Task Order No. 38 is hereby amended to add the additional tasks set forth in "Sandy Cove Park Bank Protection and Restoration Project - Phase 2 Rescoping," dated July 18, 2022, and attached as Exhibit A to this Amendment No. 1.

Section 2. Period of Service Amended. Section 2 ("Period of Service") of the January 28, 2019 Task Order No. 38 is hereby amended to extend the completion date from December 31, 22 to June 31, 2024.

Section 3. Compensation Amended. Section 3 ("Compensation") of the January 28, 2019 Task Order No. 38 is hereby amended to increase the total compensation to be paid Consultant for the work from the not to exceed amount of $448,136 to not to exceed $935,304.

CITY OF SNOQUALMIE, WASHINGTON	CONSULTANT – NHC.
By:_____ Its: Mayor Date:_____	By:_____ Typed/Printed Name: Derek L. Stuart Its: Principal_____ Date:_____
ATTEST: Deborah Estrada, City Clerk Date:	
APPROVED AS TO FORM:	

Bob C. Sterbank, City Attorney
Date:_____

nhc
northwest hydraulic consultants

Sandy Cove Park Bank Protection and Restoration - Phase 2 Rescoping

Prepared by Northwest Hydraulic Consultants Inc.

Scope of Work
Prepared for City of Snoqualmie
July 18, 2022

PROJECT DESCRIPTION

The City of Snoqualmie has requested that Northwest Hydraulic Consultants, Inc. (NHC) provide an updated scope of work for the second phase of the Sandy Cove Park Bank Restoration Project (NHC, 2014). A continuation of the Phase 2 scope of work is needed to continue the federal, state, and local permitting process for the bank protection and restoration project at Sandy Cove Park.

NHC prepared and submitted a Joint Aquatic Resources Permitting Application (JARPA) for a Nationwide Permit (NWP) in January 2020 under the original Phase 2 scope of work. Upon review of the JARPA submittal, the US Army Corps of Engineers (Corps) transferred the project to a new Project manager on June 18, 2020, initiated an Individual Permit (IP) permitting path and requested an Alternative Analysis Framework analysis as part of the IP process during a meeting on July 9, 2020.

Corps and stakeholder review of the 2020 JARPA submittal and associated Alternatives Analysis were delayed by the COVID-19 pandemic, which lead to inadequate time for Washington Department of Ecology (Ecology) review of the application within their 12-month review period. In July 2021, the Corps recommended the project be withdrawn from Ecology review and a new application started. Significant out-of-scope efforts conducted to date include the Alternatives Analysis (Approved in September 2021), and preparation of temporary/emergency Stabilization concepts (September 2021). Following the completion of the Alternatives Analysis, a draft Mitigation Plan with suggested mitigation alternatives and mitigation ratios was submitted to the previous USACE project manager on January 30, 2020. Consultation regarding finalizing mitigation alternatives and mitigation ratios is anticipated to occur with a USACE project manager, once assigned. This process is on hold until the USACE appoints a new project manager.

Additional effort is needed to incorporate stakeholder comments and revise and resubmit the 60% Design drawings in a new JARPA application.

The primary objectives of the Project will include:

1. Update the previously submitted 60% design drawings to reflect the approved concepts developed during the Alternatives Analysis process. Resubmit JARPA and continue federal, state and local permitting processes
2. Advance the 60% drawings through the 100% final construction plans, including preparation of construction specification and bid support services, in order to start construction during the summer 2023 season.
3. Prepare and submit a CLOMR for the Snoqualmie river above the falls.

The following scope of work defines the specific work plan tasks requested by the City. Task numbers have been retained from the previous scope of work.

Task 3. Hydraulic Model Development

There are several aspects of the project that will require riverine hydraulic modeling to support engineering analysis and mapping. Under the previous scope of work, NHC developed a 2D HEC-RAS model of the Snoqualmie river from the Falls to Three Forks, incorporating previous 1D and 2D modeling of the area. A topo-bathymetry dataset was generated from 2016 LiDAR, previous survey work, and new topographic and bathymetry survey by NHC.

Since the previous scope of work was initiated, the City has requested that NHC create a refined Hydraulic model of the reach to support a CLOMR application, based on the latest available topographic and bathymetric surface data (King County, 2020). The refined model will serve as a the basis of the new CLOMR application (Task 7) as well as informing the design of instream barbs and wood structures (Task 5 and 6). The following tasks were not included under the previous scope:

- Preparation of a composite 2020 topobathymetry surface to create a corrected effective model
- Calibration of the effective model, incorporating new peak flow data and surveyed high water marks from October 2019.
- Create a post-project hydraulic model based on latest topobathymetry (including the updated 60% design grading to be prepared under task 5).
- Refine the 2D model near Sandy Cove Park to the extent needed to compute hydraulic values supporting the proposed bank protection design.

Assumptions:

- No new hydrologic analysis is included in this task order.

Deliverables:

- Input and output files for models developed under Task 3.

Task 5. 60% Design/JARPA Drawings, and Permitting Support

On January 30, 2020, a JARPA was submitted to the USACE and Ecology with the 60% design for the purpose of obtaining a Nationwide Wetland Permit (NWP). Upon review of the JARPA submittal, the USACE transferred the project to a new Project manager on June 18, 2020 and initiated an Individual Permit (IP) permitting path and requested an Alternative Analysis Framework analysis as part of the IP process during a meeting on July 9, 2020. Since the project was delayed in the Alternatives Analysis Framework process, Ecology determined that the

project had not met the requirements of the state's Shoreline Management Act and Water Pollution Control Act and did not have sufficient time to obtain the shoreline permit and Section 401 Water Quality Certification before the deadline of July 13, 2021.

Ecology canceled the January 30, 2020, application as the USACE withdrew the project from Ecology review. A pre-filing request to initiate a new WQC application was filed with Ecology on July 16, 2021, and they are currently processing this permit application as an individual Section 401 WQC and reviewing for consistency with Washington's Coastal Zone Management Program. Ecology has requested that a new JARPA will need to be submitted for concurrence of Section 401 of the Clean Water Act, in addition to the other information that Ecology requires for WQC. Under this new application process, Ecology will require the following completed applicable information (in the list below) to start review of the Section 401 WQC for this project. These items were not required for the January 30, 2020 application.

- WQC form or email acknowledge receipt
- Completed, signed, and dated new JARPA
- The latest 60% design with Best Management Practices (BMPs), with construction methodology
- Draft Mitigation Plan
- Wetland Delineation Report and ratings
- Water Quality Monitoring Plan or Water Quality Monitoring and Protection Plan (WQMPP)
- Dewatering Plan (may not be needed depending on construction methodology)
- Revegetation/Restoration Plan
- Erosion and Sediment Control Plan
- SEPA checklist (note: final determination does not need to be complete)
- CZM review needs to be re-initiated by the Corps

NHC will produce a Basis of Design (BOD) Report memorandum (1-3 pages) that presents documentation supporting the project design and summarizing technical analyses developed for the project. The BOD Report will integrate and/or reference technical documentation from the preliminary basis of design report (NHC, 2014), Reach Geomorphic Assessment (2019) and earlier tasks. The BOD report will be updated and expanded as part of subsequent tasks serving as the final design documentation report at the completion of Task 6. The memorandum will be submitted in draft form to the City for review and will be finalized following receipt of comments.

NHC will refine the "preferred" bank protection alternative 3a from the Alternatives Analysis based on the updated hydraulic model output and stakeholder comments received on the conceptual design. The refined alternative (3a) will again target a design that is practical, cost effective, durable and likely to receive approval

from the permitting agencies. A preliminary construction cost estimate will be developed, based on the updated 60% design drawings.

NHC's permitting sub-consultant, 48 North Solutions, will prepare and submit all permits. NHC will support 48 North Solutions with information needed to prepare the environmental permits such as grading quantities. A scope of work for 48 North Solutions embankment is included as Attachment A.

NHC's Landscape Architecture sub-consultant, Berger, will provide 60% designs for planting and restoration of the park, including public access ramps to the river, park infrastructure, and mitigation planting plans to support the required critical areas mitigation. For the 60% design deliverables, Berger will provide draft construction plans, specifications, and estimates for review by the City. A scope of work for Berger is included as Attachment B.

KPFF, NHC's civil sub-consultant, will provide bid package assembly support for the draft Division 01 Specifications. The project specifications will be compiled for 60% design submittal as listed in the NHC proposal in PDF format. KPFF will review and provide a comment matrix with proposed corrections for the draft Division 01 Specifications. Recommendations for specification editing, including draft language will be provided based on comments for the City's use. KPFF's scope of work and fee is included as Attachment C.

AESI, NHC's geotechnical sub-consultant, will provide consultation on the 60% design including participation in project meetings, coordination with the design team, review of previous exploration logs and bank protection plan drawings and specifications, numerical slope stability analysis of proposed bank stabilization measures, and supporting documentation. AESI's scope of work and fee is included as Attachment D.

NHC will incorporate one round of consolidated comments from permitting agencies, stakeholders and the City, make revisions, and develop details for the 60% design, special provisions and quantity estimates. The 60% plans will also be developed in JARPA format (8.5"x11") to support permitting. Special provisions will be developed assuming the WSDOT Standard Specifications for 2018 unless NHC is otherwise directed by the City. The project QAQC plan, including senior review of all deliverables will be followed throughout the design process.

Assumptions:

- NHC will use its standard CAD templates for all drawings, such as borders, titles, and plot files, etc.
- City will provide information on property boundaries (ROW, property lines, easements), Riverwalk Park layout and planting plan in the vicinity of the bank protection project.
- See Design Meeting, Deliverable, and Comment Workflow summary at end of scope of work for commentary of design review and comments. It is assumed that comments on the 60% submittal package will each be returned to NHC within 3 weeks.
- Review comments for the 60% design submittal will be provided to NHC in one set from each stakeholder (i.e. not individual sets of comments from individual staff).

- Time is included for one meeting following the 60% design submittal.
- The City will be responsible to pay any federal, state, or local permitting costs or associated fees.
- No cultural resources exist at the site. If remains or artifacts are identified, or a cultural resources field survey is deemed necessary, the contract will be amended to include the required expertise.
- The City would like to enhance the wetland within Sandy Cove Park. It is assumed that this enhancement will include plantings, signage, and similar minor interventions (i.e. not earthwork or structures). NHC has assumed 8 staff hours for discussion and design of these elements. If a more extensive design is requested additional design hours may be required.
- Design of the "Upper Bank" above Sandy Cove Park and including the King Street lot is not included in this Task Order.

Deliverables:

- Draft and Final 11"x17" 60% design drawings, special provisions, and quantity estimates.
- One draft of JARPA format drawings (8.5" x11") for construction grant applications.
- A meeting with the City to discuss possible refinements to the 60% embankment design (following Task 5).

Task 6. Final Design and Embankment Design Documentation

NHC will develop the 90% and final (100%) construction plans, special provisions and cost estimates (PS&E) by revising the design based on comments provided by the City and adding further details. NHC will attend a design review meeting to discuss final revisions and comments with the City.

NHC will provide a TESC plan covering both in-water and upland construction and staging areas. The Basis of Design report from Task 5 will be updated to document design methods and summarize analyses added to the design in Task 6.

KPFF will provide bid package assembly support including coordination of specification questions developed by contractors during the bid process for the Division 01 Specifications. KPFF will also assemble the division 1 specifications and specification deliverables. The project specifications will be compiled for 90% and Final design submittals as listed in the NHC proposal in PDF format. KPFF will review and provide a comment matrix with proposed corrections for the Division 01 Specifications. Recommendations for specification editing, including draft language will be provided based on comments for the City's use. KPFF's scope of work and fee is included as Attachment C.

NHC's geotechnical sub-consultant, AESI, will provide consultation on the final design including participation in project meetings, coordination with the design team, review of previous exploration logs and bank protection

plan drawings and specifications, numerical slope stability analysis of proposed bank stabilization measures, and supporting documentation. AESI's scope of work and fee is included as Attachment D.

Assumptions:

- City will provide information on property boundaries (ROW, property lines, easements), Riverwalk Park layout and planting plan in the vicinity of the bank protection project,
- See Design Meeting, Deliverable, and Comment Workflow summary at end of scope of work for commentary of design review and comments. It is assumed that comments on the 90% submittal package will be returned to NHC within 3 weeks.
- Development of a construction traffic control plan is not included as a deliverable for this project.
- Construction inspection and/or support services are not included in this scope of work. The City has requested construction support services be scoped separately.
- NHC will make a final set of revisions based on the final design meeting (1) and one set of comments provided by the County.
- The necessary Division 01 specifications will be provided from the City to NHC and KPFF for KPFF's use and review.
- Specification Sections provided by the City will be in WSDOT format and will not require formatting over and above compiling the sections into different document types.

Deliverables:

- NHC will submit the final design package stamped by a Washington State registered Professional Engineer consisting of plans (PDF), special provisions (MS Word), and engineer's cost estimate. A basis of design memorandum will be prepared to document design methods and summarize analyses.
- TESC plan for in-water and upland construction and staging areas.
- Meeting with the City to provide an overview of the possible refinements to the final design (occurs during Task 6).

Task 7. Conditional Letter of Map Revision (CLOMR)

The proposed bank protection project is located within FEMA's regulatory floodway for the Snoqualmie River. The original Phase 2 scope of work assumed a No-Rise Analysis would be sufficient, however, the City has requested that NHC develop a Conditional Letter of Map Revision (CLOMR) with the Federal Emergency Management Agency (FEMA). The CLOMR notifies FEMA and the surrounding communities of intent to increase the 100-year flood profile. This will require NHC to complete the requirements of FEMA's MT-2 forms and submittal process. The following effort will be required:

- Create a corrected effective model and/or pre-project model with HEC-RAS 2D (Task 3)
- Create a post-project model including proposed project features with HEC-RAS 2D (Task 3)
- Complete all required hydrologic runs for a CLOMR submittal
- Create required maps showing updated Base Flood Elevations (BFEs), floodway limits, floodplain limits and other CLOMR mapping requirements.
- Complete required models, GIS data, and other requested information to FEMA

Once the submittal has been complete and reviewed, FEMA may request additional information requiring further modeling and analysis. The scope and budget included in this proposal only includes that required for the CLOMR submission, not additional correspondence and analysis required during the review iterations.

Assumptions:

- Work already completed by 48 North and/or letters of support from various agencies will be sufficient to satisfy ESA requirements.
- Notification of the CLOMR process will be made by the City
- NHC will run all required hydraulic model runs for CLOMR submission
- NHC will produce all required maps and GIS data required for CLOMR submission
- The City will pay the required CLOMR Fees directly to FEMA
- Survey completed by NHC will be sufficient for CLOMR submittal (e.g. not performed by a PLS)
- The 60% Sandy Cove Park proposed design will be sufficient for inclusion in the CLOMR submittal.

Deliverables:

- FEMA required CLOMR modeling and map files to the City.

Task 10. King Street Stormwater Outfall 100% Design

The existing stormwater outfall at King Street and Falls Avenue was found to be undersized as part of the 2015 Snoqualmie Infrastructure Improvement Project (NHC, 2015). The existing outfall pipe, a 15” galvanized pipe circled red in a hybrid of the 2017 KPFF and NHC 2012 surveys shown below, is approximately 260 feet in length.

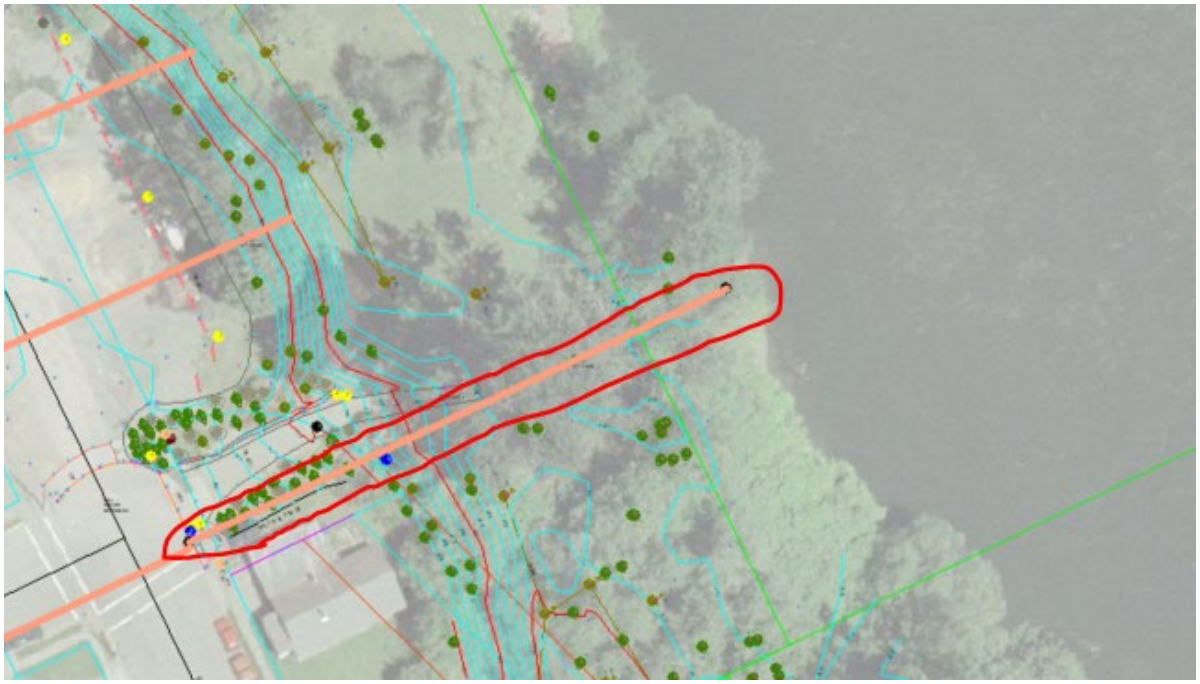

Figure 1: King Street Stormwater Outfall Pipe (circled in red)

Under the original Phase 2 scope of work, NHC developed a 30% design and planning level cost estimate for a new stormwater outfall to the Snoqualmie River at King Street. Based on previous utility locates and survey work at the site, it is expected that the existing storm pipe may be damaged between the nearest catch basin in King Street and the presumed outfall location within the limits of the Sandy Cove park project. For the revised Phase 2 scope, NHC will prepare a 100% design, to be included in the Sandy Cove park construction documents. NHC will prepare a construction cost estimate and specifications for the storm drain between the outfall and the nearest existing catch basin in King Street. The outfall will be designed and constructed in accordance with the 2016 King County Stormwater Design Manual, as adopted & amended by the City of Snoqualmie.

NHC will attend a design review meeting via phone to discuss final revisions and comments with the City.

Assumptions:

- Previous topographic survey of the Sandy Cove/Record Office project areas, completed by KPFF in May 2017, will be sufficient for preparation of the final 100% construction plans.

- The design fee estimate for the King Street outfall design assumes that stormwater modeling and other technical analysis for sizing the outfall pipe previously completed in Phase 2 will be sufficient for preparation of the final 100% construction plans.

- NHC will include the final (100%) outfall construction plan as up to three (3) sheets in the construction drawing package for Sandy Cove.
- City will provide information on property boundaries (ROW, property lines, easements).
- The gravel parking lot between Sandy Cove Park and the bowling alley will be suitable for construction staging.
- No cultural resources support is included for the stormwater pipe replacement corridor.
- No arborist will be required for the project or one will be provided by the City separately from this Task Order.

Deliverables:

- Final (100%) construction plans, specifications, and cost estimates (PS&E) for a new stormwater drainage pipe and outfall to the Snoqualmie River at King Street.

Task 13. Project Management/Administration and Quality Control

NHC will keep the City's project manager informed on project activities through the use of email and phone. Meeting dates will be set well in advance to ensure adequate time to secure commitments from key participants. Monthly invoices will be submitted that are accompanied by a brief progress report. Each progress report will detail the following:

1. Work completed from the Scope in this billing period.
2. Work anticipated for next billing period.
3. Project issues that need to be addressed.
4. Tracking of any work performed outside the original scope.

Quality control services performed under this Task includes a drafting a quality control and quality assurance plan memorandum at the outset of project work. The QAQC plan will document measures NHC will implement to assure that the deliverables are on-time, technically sound and meet professional industry standards, and to ensure effective and accurate analyses and development of recommendations, including demonstration of effective integration of multiple disciplines.

DESIGN MEETING, DELIVERABLE, and COMMENT WORKFLOW SUMMARY

1. Sandy Cove Park Embankment 60% Design (Task 5)
    - Update 60% plans (preferred alternative), construction notes, technical special provisions, cost estimate, BOD
        - Submit to stakeholders and 48 North in JARPA format
    - 48 North to submit 60% package for permits

        - Meeting to discuss 60% submittal (Meeting #5)
        - Attended by all stakeholders
    - Receive comments from all stakeholders (including permit agencies) and incorporate in next milestone
2. Sandy Cove Park Embankment 90% Design (Task 6)
    - Develop 90% plans, complete specifications, cost estimate, BOD
        - Submit to stakeholders
    - Meeting to discuss 90% submittal (Meeting #6)
        - Attended by NHC, City
    - Receive comments from City and incorporate in next milestone
3. Final Sandy Cove Park Embankment (100%) Design (Task 6)
    - Develop Final (100%) plans, complete specifications, cost estimate, BOD
        - Submit to City only

OTHER DELIVERABLES INDEPENDENT OF DESIGN WORKFLOW

1. Input and output files for models developed under Task 3.
2. FEMA required CLOMR modeling and map files to the City (Task 7)

TIME AND PERFORMANCE

1. At a schedule coordinated with City staff following issuance of this Task Order that achieves construction in 2023.

COST ESTIMATE

As listed in the following table, the cost estimate for NHC to complete this work is $487,168 if the City elects to authorize optional task reserves for subconsultants and the use of a 10% contingency. The actual effort required for this project may be reduced to as little as $385,215 based on use of the contingency, the level of effort needed for geotechnical design of piles and/or anchoring, and the following factors related to the effort required for permitting:

1. If Corps and other agency permitting occurs without many revisions or surprises, the scope may be reduced. As stated previously, the project is on its fourth USACE project manager and the discontinuity is a factor in trying to obtain the Corps permit and coordination with other agencies.

2. If City Planning staff are available to develop the SEPA checklist, Substantial Development Permit and a Flood Improvement Permit, the permitting scope may be reduced.

3. The best-case scenario for ESA consultation is if the submittal of a No Effect is letter and only minimal USFWS interaction, like Record Office. If NFMS consultation is not required, the permitting scope may be reduced.

If the full $487,168 is budgeted the City could place between $51,106 and $176,953 as optional and/or management reserve tasks that would require City staff authorization to activate if required based on these factors that cannot currently be determined.

nhc -- Northwest Hydraulic Consultants Inc.								PAGE 1 OF 2
12787 Gateway Drive S.			Prepared for:	City of Snoqualmie				
Seattle, WA 98168			Project:	Sandy Cove Park Bank Protection and Restoration (Phase 2)				
Tel. (206) 241-6000			Date:	July 18, 2022				
Fax (206) 439-2420			Project No.:	2003862				
			Prepared By:	Derek Stuart/ Catherine Billor				

	TASK DESCRIPTION	Principal	Principal T3	Staff Scientist	Engineer 1	Engineer 2	Technician/ GIS Analyst	Contract Admin	Totals
		Derek Stuart or Vaughn Collins	Chris Long	Andrew Nelson	Catherine Billor	Laurel Smith or Alex Whitmershaus	Justin Scoltock or Madalyn Ohrt	Diane Numrich	
3	Hydraulic Modeling Plan and Model Development		24		80	80	8	1	$31,460
5	Refinement of Preferred Alternative, 60% Design Drawings, and Permitting Support	120	40	28	308	200	28	6	$131,080
6	Final Design and Embankment Design Documentation	80	40	12	208	100		6	$82,900
7	CLOMR & coordination with FEMA	40			160	80			$47,800
10	King Street Stormwater Outfall 100% Design	12			24	16			$9,380
13	Project Management/ Administration and Quality Control	70			100			2	$35,610
	Total Hours and Direct Labor Cost (DL)	322.0	104.0	40.0	880.0	476.0	36.0	15.0	
	Standard Rate	$275.00	$255.00	$195.00	$160.00	$140.00	$145.00	$180.00	
	TOTAL LABOR COST (BASE SCOPE OF WORK ONLY)								$338,230

Direct Expense Detail

	Units	Rate		Cost
Mileage (estimated 9 round trips)	1,218	$0.580		$706
Reproduction & Communication				$200
Survey Equipment (Boat/ RTK GPS/ Eco Sounder)	1	200.00		$200
			Total Direct	$1,106

Subconsultants

	Sub Fee	Markup		Cost
Base Scope of Work				
Geotechnical support for Task 1 from AESI	$10,000	$1,000		$11,000
KPFF bid package and Division 1 specification review	$18,000	$1,800		$19,800
Berger	$31,890	$3,189		$35,079
48N	$50,000	$5,000		$55,000
			Base Scope of Work	$120,879
Optional Tasks				
Geotechnical support for Task 1 from AESI	$10,000	$1,000		$11,000
KPFF bid package and Division 1 specification review	$0	$0		$0
Berger	$0	$0		$0
48N Optional	$36,224	$3,622		$39,846
			Optional Tasks	$50,846
			Subconsultants Base Scope and Optional Tasks Combined	$171,725

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12787 Gateway Drive S.	Prepared for:	City of Snoqualmie	
Seattle, WA 98168	Project:	Sandy Cove Park Bank Protection and Restoration (Phase 2)	
Tel. (206) 241-6000	Date:	June 28, 2022	
Fax (206) 439-2420	Project No.:	2003862	
	Prepared By:	Derek Stuart/ Catherine Billor	
Cost Summary			
Total NHC Labor			$338,230
Total Direct Expenses			$1,106
Subconsultants (Base)			$120,879
Subconsultants (Optional)			$50,846
		TOTAL COST BASE SCOPE OF WORK	$460,215
		TOTAL COST INCLUDING OPTIONAL TASKS	$511,062
		TOTAL COST INCLUDING OPTIONAL TASKS AND 10% CONTINGENCY	**$562,168**
		REMAINING BUDGET IN EXISTING TASK ORDER	$75,000
		TOTAL COST INCL. OPT. TASKS &10% CONTINGENCY, LESS REMAINING BUDGET IN EXISTING TASK ORDER	**$487,168**

REFERENCES

NHC 1993, Draft interim report, Snoqualmie River flood control project. Prepared for City of Snoqualmie, Snoqualmie, Washington.

NHC 2008, Technical Analysis for FEMA Letter of Map Revision for the Snoqualmie River near the City of Snoqualmie, Washington. May 23, 2008. LOMR became effective February 26, 2010. NHC Project Number 21478.

NHC 2014, Sandy Cove Bank Restoration Project, Final Report, Prepared by Northwest Hydraulic Consultants for the City of Snoqualmie in coordination with Perteet Inc. and Terracon Inc. Review Draft April 2013, Final Draft January 2014. NHC Project Number 200080.

NHC 2017, Infrastructure Improvement Program, Hydrologic and Hydraulic Analysis, Final Report, Prepared by Northwest Hydraulic Consultants for Perteet Inc. on behalf of the City of Snoqualmie. February 2017. NHC Project Number 2001642.

Attachment A

Sub-consultant 48 North Solutions Scope and Fee Estimate for Sandy Cove Park

48 north solutions

1275 12th Ave NW, Suite 8, Issaquah, Washington, 98027

June 10, 2022

Mr. Derek Stuart, PE,
Northwest Hydraulics Consultants
12787 Gateway Drive S.
Seattle, WA 98168
dstuart@nhcweb.com

submitted via email to:

Re: Modified Environmental Permitting Support for the City of Snoqualmie's Sandy Cove Bank Stabilization Project (Amendment 1).

Dear Mr. Stuart:

48 North Solutions, Inc. (48 NORTH) is excited to submit this amendment proposal to Northwest Hydraulic Consultants (NHC) to continue to provide permit acquisition services for the proposed Sandy Cove bank stabilization project along the left bank of the Snoqualmie River (the Project), proposed by the City of Snoqualmie (the City).

PART 1: SCOPE OF WORK

Formal and informal permitting agency consultations with federal, state, and local agencies, as well as external stakeholders is a critical component of the permitting processes in Washington State. Consultation generally involves analysis of a proposed project to determine any potential environmental effects and to develop effective monitoring, mitigation, and adaptive management measures necessary to prevent, minimize and/or mitigate project effects on the environment. Consultation with the agencies for the Project has been initiated and an Alternative Analysis Framework has been conducted at the request of the U.S. Army Corps of Engineers (USACE) to support an Individual Permit (IP) Application. The Washington Departments of Fish and Wildlife (WDFW), Ecology, and Natural Resources (DNR), along with the Snoqualmie Tribe have been consulted on the progress of the design effort. The USACE has changed project managers several times and the Project is currently waiting for the assignment of a new Project Manager. 48 NORTH submitted a draft Mitigation Plan to the USACE on January 30, 2020. It is anticipated that this plan will need to be modified based on the negotiations with the new USACE Project Manager once one is assigned to the project.

As per the direction of the USACE to pursue an IP for this project and the numerous out of scope permitting efforts conducted, per the direction of the USACE and the City, an amendment to the original Sandy Cove Bank Stabilization Project scope is being requested. Additional out of scope work conducted by 48 NORTH, included USACE Emergency Authorization permit planning and the production of a USACE-directed Alternative Analysis Framework study as a component of the IP Permit Application process path identified by the USACE for this project.

This additional scope will include ongoing local permitting, an Ecology Water Quality Certification (WQC) submittal, Coastal Zone Management (CZM) submittal, Hydraulic Project Approval (HPA) submittal, new Joint Aquatic Resource Permit Application (JARPA) submittal to Ecology, DNR submittal for stormwater outfall, and update the Draft Mitigation Plan based on the new USACE Project Manager's comments. The following documentation and permit applications have been completed:

- On January 30, 2020, a JARPA was submitted to the USACE and Ecology with the initial design.
- An Alternative Analysis Framework was completed for the USACE as a condition for the IP permitting process.
- A draft Mitigation Plan with suggested mitigation alternatives and mitigation ratios was completed and submitted to the previous USACE project manager on January 30, 2020.
- All field work has been completed, as well as the Critical Area Report (CAR).
- Several on-site field meetings (pre-application, emergency, etc…) were conducted with the various federal and state permitting agencies (WDFW, DNR, Ecology, USFWS and USACE as well as the Snoqualmie Tribe).

48 NORTH will support NHC and the City with obtaining the environmental permits and the supporting consultations necessary to complete the bank stabilization and stormwater outfall for the Sandy Cove Project. We have broken these efforts into four tasks.

Task 1: Permitting, Meetings and Project Management

48 NORTH will continue to engage with the City Planner to develop a local permitting strategy. Local permitting has been delayed while the USACE-directed Alternative Analysis Framework was conducted. As the City is leading this effort, we assume they will be the lead agency for the State Environmental Policy Act (SEPA) review. We anticipate that a standard SEPA Environmental Checklist will likely be required, as opposed to a SEPA Environmental Impact Statement (EIS). The checklist requires governmental agencies to consider the environmental impacts of a proposal before making decisions and helps agencies identify those impacts. The City (as the lead agency) will use this checklist to determine whether the environmental impacts of the proposal are significant. If impacts are not significant, the City will issue a Determination of Non-Significance for this project. 48 NORTH will work closely with the City's Planner to develop the project's SEPA checklist for their review. In addition to developing the SEPA Checklist, 48 NORTH will prepare a Substantial Development Permit and a Flood Improvement Permit. A CAR has been completed and will be submitted to the City with the SEPA checklist.

As part of the design, critical areas such as wetlands, should be avoided where practical. If they cannot be avoided, impacts should be minimized to the greatest extend practical. As part of the CAR, wetland and Ordinary High Water Mark delineations has been conducted to identify these critical areas so to avoid or at least minimize impacts to these areas (see Task 2 for more detail). Wetlands are regulated by the City under the Sensitive Areas Ordinance, Chapter 19.12.180. Other City-related permits that maybe required include clearing and grading permits.

On January 30, 2020, a JARPA was submitted to the USACE and Ecology with the initial design. Upon review of this submittal, the USACE initiated an IP permitting path and requested an Alternative Analysis Framework analysis as part of the IP process. With the completion of this analysis, the JARPA will need to be updated with the new design that is currently being prepared by NHC. Ecology has cancelled its previous permit review and the City is now under the new Ecology guidelines for this latest design

revision. A new submittal to Ecology was initiated on July 16, 2021. The WDFW HPA permit has not been prepared and will be submitted once the new 60% design plans are completed by NHC.

Upon receiving feedback from the new USACE Project Manager, 48 NORTH will update the JARPA and then re-submit it to the various permitting agencies including Ecology, DNR and USACE. The updated JARPA submission to USACE will be to obtain a Standard Permit (e.g., an IP Permit) since the General Permit (e.g., a Nationwide Permit) path was not approved for this project. The updated JARPA will be re-submitted to Ecology for concurrence of Section 401 of the Clean Water Act, in addition to the other information that Ecology requires for WQC (Task 2). Since this project is in King County and requires federal permitting via an IP permit, a CZM Certification is required. The permit application to WDFW, via its online APPS system, is to obtain a HPA for the in-water work component of the project.

Deliverables:
48 NORTH will prepare one (1) draft copy of the SEPA Checklist and each permit application in MS Word format for internal review by NHC and/or the City. Upon receipt of one (1) consolidated set of comments, 48 NORTH will then prepare the final SEPA Checklist, and permit applications for submission to the respective agencies. Copies of all applications, as pdfs, will be submitted to NHC for their records. We assume NHC will prepare all JARPA-formatted figures for this submission. 48 NORTH will use the information included in the revised JARPA and upload it onto the WDFW APPS online application system to obtain an HPA.

48 NORTH recognizes the regulatory agencies are involved with multiple projects at any one time. Therefore, once each application is submitted, 48 NORTH will work closely with the respective agencies to support the permitting review process so that it is completed as efficiently as possible. Our aim will be to minimize any lag time during the application review. Throughout the permit review process, 48 NORTH will monitor and engage these agencies via phone calls and/or electronic mail correspondence to receive updates from them and address any concerns that may arise. We will work closely with NHC to address agency comments received and provide any supplemental information to keep the project on schedule.

Task 2: Ecology Section 401 Water Quality Certification Support

The January 30, 2020, JARPA was submitted to Ecology for concurrence of Section 401 of the Clean Water Act (CWA). Ecology requested an individual Section 401 WQC for this project since USACE has decided to go with an IP. Since the USACE is requiring an IP for this project, Ecology is requesting an individual Section 401 WQC for this project. Ecology is currently processing this permit application as an individual Section 401 WQC and is reviewing for consistency with Washington's Coastal Zone Management Program.

Since the project was delayed in the Alternatives Analysis Framework process, Ecology determined that the project had not met the requirements of the state's Shoreline Management Act and Water Pollution Control Act and does not have sufficient time to obtain the shoreline permit and Section 401 Water Quality Certification before the deadline of July 13, 2021. Ecology canceled the January 30, 2020, application as the USACE withdrew the project.

The Pre-Filing Meeting Request for Clean Water Act Section 401 WQC was filed and accepted by Ecology on July 16, 2021. This completes the requirement of the Pre-Filing Meeting Request and initiated

the Section 401 WQC permitting process for this project. Ecology has requested that a new JARPA will need to be submitted for concurrence of Section 401 of the Clean Water Act, in addition to the other information listed below that Ecology currently requires for WQC:

- WQ cert form or email acknowledge receipt
- Completed, signed, and dated **new** JARPA application
- 60% design with BMPs, with construction methodology
- Draft Mitigation Plan
- Wetland Delineation Report and ratings
- Water Quality Monitoring Plan or Water Quality Monitoring and Protection Plan (WQMPP)
- Dewatering Plan (**don't check box** if only putting in a curtain)
- Revegetation/Restoration Plan
- Erosion and Sediment Control Plan
- SEPA decision box and **does not need to be completed**
- CZM review needs to be re-initiated. **Corps will send CZM form**

*Under Specific Nationwide conditions and because of EPA rule (NWP 27) not triggering 401 r**eview** but triggering 401is new language for automatic 401. Ecology had discretion before but not now.*

The WQMPP is intended to describe and/or provide specific information on activities that will be performed within and/or over waters of the State. The WQMPP shall include a monitoring schedule for tracking the performance of Best Management Practices (BMPs) used during in-water and over-water work within the project. Upon discussion with the Ecology project manager on June 6, 2022, a final SEPA determination will not be needed for this project application submittal. This is a new permit application requirement modification that is in the process of being adjusted by Ecology (June 2022).

48 NORTH will consult with Ecology on the above requested information and in coordination with NHC, will draft a WQMPP, Dewatering Plan, and a Revegetation/Restoration Plan as per Ecology's request. NHC will draft an Erosion and Sediment Control Plan. Once this information review is complete and approved, Ecology will issue their WQC.

Deliverables:
48 NORTH will prepare one (1) draft copy of the WQMPP, Dewatering Plan, and Revegetation/Restoration Plan in MS Word format for internal review by NHC and/or the City. Upon receipt of one (1) consolidated set of comments, 48 NORTH will then prepare the final documents for submittal to Ecology. Copies of all documents, as pdfs, will be submitted to NHC for their records. We assume NHC will prepare all WQMPP, Dewatering Plan, and Revegetation/Restoration Plan figures for this submission. 48 NORTH will draft and submit the above report documentation to Ecology.

Task 3: Endangered Species Act Consultation

Section 7 of the Endangered Species Act (ESA) requires federal agencies to ensure actions it authorizes, or permits are not likely to jeopardize the continued existence of listed species or adversely modify designated critical habitats. To meet ESA requirements, agencies review the likely effects of their projects in consultation with the National Marine Fisheries Service (NMFS) and/or U.S. Fish and Wildlife Service (USFWS), commonly referred to as the "Services". The Services share responsibility for administering Section 7 of the ESA. Consultation with the Services may be required if the project requires a federal permit from the USACE, which is considered a federal nexus. Projects that have a federal nexus (i.e.,

receive federal funds, occur on federal lands, or require federal permits or approval) trigger the completion of Section 7 consultation with the Services.

Consultation under ESA would require the City to submit either a letter of "no effect" or request a Biological Assessment (BA) for informal (determination of "may effect, is not likely to adversely affect"), or formal consultation (determination of may affect, is likely to adversely affect") to the Services. The USACE is responsible for initiating and coordinating the consultation process and obtaining the Services concurrence. 48 NORTH will prepare either a "letter of no effect", or an abbreviated Biological Evaluation (BE) to address the potential impacts and possible mitigation measures to offset these impacts.

The project is located upstream of Snoqualmie Falls and does not contain any ESA-listed species and/or critical habitat overseen by NMFS but may contain ESA-listed species and/or critical habitat overseen by USFWS. Due to the project's location above the Snoqualmie Falls, USFWS may request consultation, or BMPs, and a determination of impacts for Northern spotted owl and/or marbled murrelet. NMFS may also request consultation due to the possible impacts to ESA listed species below the falls, due to stormwater and turbidity issues. ESA consultation for the adjacent Record Office Revetement Repair Project did not require consultation with NMFS, so we are assuming there will not be a need for consultation with NMFS for this project.

Consultation requirements with the USFWS may include 1) an assessment of the proposed construction of the streambank stabilization to determine the level of effect on ESA-listed species such as the Northern spotted owl (*Strix occidentalis caurina)* and/or marbled murrelet (*Brachyramphus marmoratus*) or their designated critical habitat, which is found just west of the City in the Middle Fork Snoqualmie River basin), protected by the respective agencies, and 2) preparation of a letter (or report, depending on the level of effect) addressed to USFWS requesting concurrence with the effect determination. The USACE will issue a permit once they receive concurrence from USFWS (amongst other items).

Working through the USACE, 48 NORTH will either meet in person or communicate over the phone with the USFWS to discuss the Proposed Action. Following this, 48 NORTH will prepare the requested documentation (i.e., Letter of No Effect, or abbreviated Biological Evaluation [BE]) summarizing the potential impacts of the Proposed Action on ESA-listed species that may occur within the Project Area. A Letter of No Effect was submitted to the Services for the Record Office Project, and this is anticipated to be documentation of what may be required for this project.

Deliverables:
48 NORTH will prepare one (1) draft copy of either a Letter of No Effect, or abbreviated BE, in MS Word format for internal review by NHC and/or the City. Upon receipt of one (1) consolidated set of comments, we will then prepare a final document for submission to the USACE.

Task 4: Mitigation Plan

A draft Mitigation Plan with suggested mitigation alternatives and mitigation ratios was submitted to the previous USACE project manager on January 30, 2020, and consultation regarding finalizing mitigation alternatives and mitigation ratios is anticipated with the new USACE project manager, once assigned. Upon the City agreeing to USACE-approved mitigation alternatives and ratios for impacts, as outlined in the draft Mitigation Plan submitted to the USACE, 48 NORTH will develop a final Mitigation Plan. Future Mitigation Plan cost is only an estimate and may change as impacts and ratios have not yet been determined. Negotiations with the USACE are pending. This final mitigation plan will outline how the

City will compensate for the impacts of the aquatic habitats and increase the net aquatic habitat functions and values at a landscape level. There are wetlands present onsite, but all possible wetland impacts will likely be avoided through the design process and will not be included in the mitigation negotiations with the USACE.

Deliverables:
48 NORTH will attend up to four (4) virtual meetings to engage with the USACE in negotiating mitigation alternatives and ratios based on the submitted draft Mitigation Plan. prepare one (1) draft copy of a final Mitigation Plan, in MS Word format for internal review by NHC and/or the City. Upon receipt of one (1) consolidated set of comments, we will then prepare a final document for submission to the USACE.

PART 2: COST ESTIMATE AND ASSUMPTIONS

48 NORTH's Time & Materials estimate to complete the environmental permitting for the City's proposed Sandy Cove Bank Stabilization Project is $83,824 (Table 1). This cost estimate is net of any applicable Federal, state, and local sales taxes or fees. 48 NORTH's 2022 labor rates are presented in Table 2. These rates will be valid for the duration of the project. Our cost estimate does not include any payments for other federal, state, or local permitting costs, or other agreements.

When costing this estimate, we made the following assumptions:

- Permitting effort and costs are estimated based on NHC's current draft 60% restoration design concepts and stormwater outfall upgrades identified by City staff.
- Due to the project's location above the Snoqualmie Falls, we do not anticipate consultation with NMFS; however, USFWS may request consultation, or Best Management Practices, and a determination of impacts for Northern spotted owl and/or marbled murrelet. We have costed ESA consultation such as an abbreviated BE that can be later amended to a letter of No Effect upon consultation with USFWS. We have not costed the development of a fully expanded BA.
- The City will be the SEPA lead.
- A SEPA Checklist is sufficient, and the project will not require a SEPA EIS.
- If required by the permitting agencies, a cultural resources report will be completed by a third party and will be provided to 48 NORTH for the permit application submittals.
- A Mitigation Plan for wetland, river, and floodplain impacts is required by the USACE, Ecology and WDFW as well as the City. The negotiation and completion of the draft Mitigation Plan to the USACE has been costed in Task 4. Mitigation Plan cost is only an estimate and may change as impacts and ratios have not yet been determined. Negotiations with the USACE are pending.
- NHC will provide all design figures to support all permit applications.
- To minimize costs and maximize effort, permit tracking will be limited to teleconferences, phone calls, and electronic mail correspondence with regulatory agencies only.

This cost estimate does not include additional agency/stakeholder meetings to address significant changes to the permit submittals and/or agency comments; or substantial project changes that may require modifying the required permits.

The following additional assumptions were made to reduce anticipated costs and create a range due to current permitting agencies uncertainties. We have included a best-case scenario vs worst case scenario ranges for Tasks 1-4 (see Table 1):

Task 1: If Corps and other agency permitting occurs without many revisions or surprises, the scope of Task 1 may be reduced. As you are aware, we are on our fourth USACE project manager and the discontinuity is a factor in trying to obtain the Corps permit and coordination with other agencies. Also, if the City Planner develops the SEPA checklist, Substantial Development Permit and a Flood Improvement Permit, the permitting scope for Task 1 may be reduced.

Task 2: The cost range for Ecology permitting may be closer to the upper end since there are a lot of new required application requirements for the Section 401 Certification, including the submittal of a new JARPA to Ecology (see bullet list above).

Task 3: The best-case scenario is if the ESA submittal is a No Effect letter and only minimal USFWS interaction, like Record Office. If NFMS consultation is required due to new regulations, the cost will be on the higher range or even more.

Table 1: 48 NORTH's Time & Materials Cost Estimate Per Task for the Sandy Cove Project Amendment

Task	Cost
Task 1: Permitting, Meetings and Project Management	$25,050 - $35,576
Task 2: Ecology Water Quality Certification	$23,100 - $32,600
Task 3: ESA Consultation	$2,100 - $5,018
Task 4: Mitigation Plan Completion	$4,200 - $10,080
ODC and Travel (including 10% markup)	$550
TOTAL	$55,000 - $83,824

Table 2: 48 NORTH's 2022 Professional Rates

Labor Category	Rate/Hour
Principal Scientist	$163
Senior Scientist	$150
Environmental Scientist III	$131
Environmental Scientist II	$117
Environmental Scientist I	$101
GIS Analysis	$131
Technical Editor	$ 82
Accounts Specialist	$ 74

Other Direct Costs (out of pocket expenses), Travel, etc. are invoiced at actual plus 10%
Rates effective through 12/31/2022

We appreciate the opportunity to submit this proposal and look forward to continuing to support NHC and the City on this project. If you have any questions or would like to discuss this proposal further, please contact Bill Mavros at (206) 637-5442 or via e-mail at bmavros@48northsolutions.com.

Sincerely,

Bill Mavros, Senior Scientist
48 North Solutions, Inc.

Attachment B

Sub-consultant Berger's Scope and Fee Estimate

5.16.22

Derek Stuart
Northwest Hydraulic Consultants
12787 Gateway Dr S
Tukwila, WA 98168

Proposal for Landscape Architectural Services – Sandy Cove Park Lower Bank Stabilization

Derek:

We appreciate the opportunity to support your work at Sandy Cove Park associated with the lower bank stabilization project. We understand we will provide landscape architectural services to prepare restoration planting plans that meet required critical area mitigation. This work includes identifying strategies to preserve view corridors from the park to the river. Other elements include working with the project team to further define public access ramps to the river, as well as any supporting park infrastructure to be identified as work progresses.

It is our understanding we will begin work in June of 2022, and construction is assumed to be complete in summer of 2023 (pending permit approvals).

60% Design

The following tasks and deliverables will be provided as part of this phase of the project. Work is anticipated to begin in June 2022 with an estimated two-month duration.

1. Project management:
    a. Time includes coordination with the city and NHC project team members, and review of work completed to date.
    b. Gather associated background materials and setup CAD sheets for the project.
    c. Attend up to six one-hour virtual meeting with the team to coordinate associated work items related to the project.
    d. Attend one kick off meeting on site to observe current conditions of the work area and define project paraments and any other design elements.
2. Landscape architectural design task:
    a. Coordinate restoration plantings related to bank stabilization work and identify any tree or site protection needs.
    b. Identify view corridors and coordinate bank stabilization details to ensure plant materials meet project objectives for agencies and stakeholders.
    c. Coordinate materials and site access needs for two water access ramps down the bank with NHC and the city.

d. Identify any other needs for site furnishings or landscape elements on the lower bank.
e. Provide Rough Order Magnitude (ROM) cost estimate to support NHC with associated restoration and landscape materials costs for the project.
f. Prepare draft specifications in CSI format following required standards for restoration plantings and any associated landscape elements.

3. Deliverables:
    a. Basis of design narrative for landscape related items.
    b. Preliminary tree protection plan and planting restoration sheets.
    c. Preliminary landscape plans laying out park amenities.
    d. ROM cost estimate.
    e. Draft Specifications.

90% Design

Upon receiving comments from the 60% design submittal, we will engage in the following tasks for 90% design. It is assumed these plans will be used for permit submittals and is estimated as a two-month period of time. Specific tasks for this phase include:

1. Project management:
    a. Attend up to six one-hour virtual meetings with the city and design team to coordinate project elements.
    b. Internal coordination meetings and QA/QC to ensure tasks are fully coordinated with the NHC team, any related design standards, and input from associated stakeholder and agency review cycles.
    c. Respond to 1 round of permit review comments and attend one review meeting with city and/or agency stakeholders.
2. Landscape architectural tasks:
    a. Permit ready tree protection plan and coordinate site access to minimize construction impacts. (1 sheet including details).
    b. Permit ready landscape site plan detailing water access ramps and associated park amenities. (2 sheets).
    c. Permit ready planting restoration plans that outline any required mitigation. (3 sheets).
3. Deliverables:
    a. Landscape construction documents, up to six drawing sheets.
    b. Revised cost estimate for landscape related items.
    c. Revised specification for related landscape items and prepare bid form per WSDOT Standards.

100% Design / Bid Administration

After completion of 90% Design set, and all reviews are complete, we will revise the plan sheets to address comments and finalize coordination of the construction documents in preparation for public bid. Specific tasks for this phase include the following:

1. Project management:
    a. Attend up to two one-hour virtual meetings with the city and design team to coordinate project elements.
    b. Internal coordination meetings and QA/QC to ensure tasks are fully coordinated with the NHC team, city standards, and input from associated agency / stakeholder review cycles.
    c. Assist city and NHC with bid phase as needed.
2. Documentation:
    a. We will provide a written response to all review comments and incorporate all revisions related to our scope of work.
    b. Cost estimate updates will be provided for related project elements.
    c. Revise specifications to coordinate project elements with all consultants.
    d. Respond to bidder questions during bid phase and prepare any necessary addenda (assumes responses to 10 questions and 4 plan revisions).
3. Deliverables:
    a. Bid ready landscape construction documents, up to six drawing sheets.
    b. Bid ready landscape related specifications.
    c. Cost estimate information for landscape architectural scope.
    d. Plan revisions issued as addenda during the bid period.

Assumptions

We have made the following assumptions in developing this scope of work:

1. It is assumed 30% Design is complete on the project, and that a JARPA application has been submitted by NHC on behalf of the city.
2. Our work is in support of NHC who is administering the permit process. Our scope includes time to coordinate permit applications and supporting materials needed to satisfy local, state and federal permits.
3. All works is associated with the lower bank only, and does not include implementation of any work on the upper bank associated with a separate project.
4. We will coordinate tree protection details with city arborist.
5. Coordination meetings are assumed to be held virtually, and minimal travel time has been included in this scope and fee.
6. Construction Support Services will be negotiated separately on a future date.
7. No formal presentations or public outreach is anticipated with this scope of work.

Fees

Based on the scope of services identified at this time, we have established a not to exceed fee for landscape architectural services as follows:

60% Design	$11,215.00
90% Design	$12,025.00
100% Design / Bid	$8,150.00
Reimbursable Expenses	$500.00
Total	**$31,890.00**

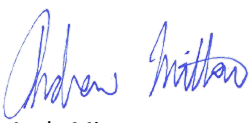
Fees will be billed monthly based upon the percentage of work completed. Services beyond those noted in this proposal will be billed as additional services on an hourly basis as follows, or lump sum fees can be negotiated:

Principal	$215.00 per hour
Associate	$170.00 per hour
Project Manager	$140.00 per hour
Landscape Designer	$115.00 per hour
Administrative Staff	$100.00 per hour

Invoices not paid within 90 days of invoice date will be subject to late charges of 1% per month. If payment for services is not received within 120 days of the invoice date, all subsequent services and/or issuance of documents may be postponed until receipt of payment, unless special arrangements are made prior to providing the services.

If this proposal meets with your approval, please sign one copy and return it to our office. If you have questions, would like more information, or wish to make any modifications, please do not hesitate to contact us. We look forward to continued work with your office in Snoqualmie! Work will be scheduled upon our receipt of the signed proposal.

Sincerely,
Berger Partnership PS



Andy Mitton
Principal, ASLA, PLA

APPROVED:

_____

_____

Date

Fee Estimate Worksheet

Date: 5/16/2022

Project: Sandy Cove Park Lower Bank Stabilization

	Principal AM	Associate	PM JF	LA Staff	Admin CG	Total
60% Design						
Project Management - gather backgrounds, CAD setup	4		10			$2,260.00
Kick off mtg w/ team on site	3		3			$1,065.00
Virtual team coordination meetings (4)	4		4			$1,420.00
City / Agency meetings (2)	2		2			$710.00
Develop Restoration Planting Plans for lower bank - identify view corridors	2		8			$1,550.00
Coordinate details for water access	2		4			$990.00
Identify other park site furniture	1		4			$775.00
Provide ROM Cost Estimate support to related items	1		4			$775.00
Draft Specification, planting & Site furnishings	2		6		4	$1,670.00
60% Design Total	**21**	**0**	**45**	**0**	**4**	**$11,215.00**
90% Design						
Project Management	2		8			$1,550.00
Virtual team coordination meetings (4)	4		4			$1,420.00
City / Agency meetings (2)	2		2			$710.00
Respond to comments (including 1 round permit review)	1		8			$1,335.00
Finalize Restoration Planting Plans	1		8			$1,335.00
Finalize details for water access	1		6			$1,055.00
Provide details for park site furniture	1		8			$1,335.00
Update ROM Cost Estimate for related items	1		4			$775.00
Revise landscape specific specifications	2		12		4	$2,510.00
90% Development Total	**15**	**0**	**60**	**0**	**4**	**$12,025.00**
100% Design / Bid Administration						
Project Management			6			$840.00
Virtual team coordination meetings (2)	2		2			$710.00
Respond to comments	2		4			$990.00
Finalize plans, specification, update Cost Estimate	2		8		4	$1,950.00
Respond to bidder questions	2		8			$1,550.00
Provide any required addenda	2		12			$2,110.00
Bid Administration Total	**10**	**0**	**40**	**0**	**4**	**$8,150.00**
Project Totals (Berger)	**46**	**0**	**145**	**0**	**12**	**$31,390.00**
					Reimbursable Expenses (Berger)	**$500.00**
					Grand Total	**$31,890.00**

Attachment C

Sub-consultant KPFF's Scope and Fee Estimate

1601 Fifth Avenue, Suite 1600 Seattle, WA 98101 206.622.5822 kpff.com

May 11, 2022

Mr. Derek Stuart, PE, Principal
Northwest Hydraulic Consultants
12787 Gateway Drive South
Seattle, WA 98168

Subject: Sandy Cove Park Revetment
Specification Review and Assembly Fee Proposal

Dear Mr. Stuart:

We appreciate the opportunity to provide consulting services for the project referenced above. The project intends to provide design documents for stream bank stabilization along a portion of the Snoqualmie River near Sandy Cove Park. The City of Snoqualmie (City) will then provide the design documents to potential bidders for pricing, permitting and construction.

This proposal is provided for a general review and consultation services as it relates to the Division 01 Specifications required for the work and the development of plans and documentation related to temporary erosion and sediment control (TESC) for the areas upslope of the revetment work. We also understand that NHC would like KPFF to assist in the compilation of the project specifications and support the review of bids.

SCOPE OF WORK

Our scope of work as we understand it is as follows:

MEETINGS AND COORDINATION

- Attend one Kick-Off Meeting.
- Attend team coordination calls as needed.
- Attend two City comment review meetings (90% and Final).

DIVISION 01 SPEC AND SPEC DELIVERABLES ASSEMBLY

- The project specifications will be compiled for 90% and Final design submittals as listed in the NHC proposal in PDF format.
- KPFF will review and provide a comment matrix with proposed corrections for the Division 01 Specifications.

- Recommendations for specification editing, including draft language will be provided based on comments for the City's use.

TESC, SWPPP, AND NOI

- Prepare TESC plans and details for disturbed areas upslope of the revetment.
- Prepare construction cost estimate for TESC elements upslope of the revetment.
- Contribute relevant sections to the Stormwater Pollution Prevention Plan for work upslope of the revetment.
- Prepare, assemble, and submit the Notice of Intent for the Construction Stormwater General Permit.

BID SUPPORT

- Coordinate specification questions developed by contractors during the bid process for the Division 01 Specifications.
- Revise the design specifications as needed to reflect clarifications during contractor bidding.

ASSUMPTIONS

- We understand that specification sections outside of Division 01 will be provided by NHC to KPFF and that those sections will not require review.
- The necessary Division 01 specifications will be provided from the City for our use in word format.
- Specification Sections provided by others will be in WSDOT format and will not require formatting over and above compiling the sections into different document types (ie: ready for transition from word to pdf file types).
- Design scheduling and management will be by others.
- Input regarding permitting and administrative requirements needed in the Division 01 Specifications will be provided by others for our use.
- All deliverables will be in digital formats. Printing will not be required.

FEE

We propose to accomplish the above scope of services on an hourly basis for the following total not to exceed (NTE) fee, in accordance with the enclosed fee schedule and Terms and Conditions, which are made part of this proposal:

Meetings	$ 3,000
Division 01 Spec Review	4,000
TESC, SWPPP, NOI	8,000
Bid Support	3,000
Civil Fee Total – NTE	***$ 18,000***

Expenses, such as mileage, are included in this fee. We will not exceed the total estimated fee without prior approval.

We look forward to working with you on this project. If this letter of agreement meets with your approval, please sign below and return one copy for our files. If you have any questions, please contact me at (206) 622-5822.

Sincerely,

Joe Eberhardt, PE
Associate

BSM:

Enclosure

65400

Approved by: _____ Date: _____
Northwest Hydraulic Consultants

Attachment D

Sub-consultant AESI's Scope and Fee Estimate

May 9, 2022
Project No. 20220191E001

CONTRACT AGREEMENT TO ENGAGE THE SERVICES OF ASSOCIATED EARTH SCIENCES, INC. AS A CONSULTANT AND ADVISOR

This agreement has been entered into at

Associated Earth Sciences, Inc.
911 5th Avenue
Kirkland, Washington 98033

on the 9th **day of** May 2022 **between**

Client: Northwest Hydraulic Consultants
301 W Holly Street, Suite U3
Bellingham, Washington 98225

Attention: Mr. Derek Stuart

hereinafter referred to as "Client," and Associated Earth Sciences, Inc. (AESI), hereinafter referred to as "Geotechnical Consultant," for mutual consideration as hereinafter set forth:

1.0 The description and location of the project on which the Client contracts the Geotechnical Consultant's services are:

The subject site is Sandy Cove Park, located at 7970 Falls Avenue East in Snoqualmie, Washington, along the bank of the Snoqualmie River. It our understanding that current plans include the construction of new protection measures to reduce bank erosion along the park shoreline. We understand that the Client has requested that AESI provide design-phase geotechnical consultation in support of the proposed project.

2.0 Geotechnical Consultant agrees to provide the following services:

Geotechnical consultation in support of the proposed design. Our services may include participation in project meetings, coordination with the design team, review of previous exploration logs and bank protection plan drawings and specifications, numerical slope stability analysis of proposed bank stabilization measures, or the issuance of supporting documentation for the proposed design, including to address jurisdictional comments.

3.0 Client confirms that the Geotechnical Consultant has explained the full range of services it offers and the manner in which they could be applied to this project. Client also confirms that they have understood the value and benefit of these services and have of their own accord

decided upon those identified in paragraph 2.0 above. Client agrees to hold the Geotechnical Consultant harmless for claims of any kind that may arise from any source due to the Geotechnical Consultant's failure to provide services that Client has specifically not included in the list of services identified in paragraph 2.0 above. Client further agrees to indemnify the Geotechnical Consultant for the cost of defending any such claims and any awards or settlements resulting therefrom.

4.0 The Client accepts that all services are provided in accordance with the attached Schedule of Charges and General Conditions, which are made a part of this contract by reference. Client further agrees to compensate the Geotechnical Consultant for their services, and to reimburse the Geotechnical Consultant for expenses incurred on Client's behalf as follows:

All work will be completed on a time and expense basis (Associate or Senior Principal rate) in accordance with the attached Schedule of Charges and General Conditions. An estimated budget placeholder for the above scope of services is $10,000. Additional geotechnical consulting, field exploration and testing, or other authorized services that are beyond the proposed scope of work will be performed on a time and materials basis in accordance with our current Schedule of Charges and General Conditions.

Future work may include geotechnical observation services during construction. We can prepare a proposal for these services upon request.

5.0 The person signing this contract for a business entity attests that they are empowered to act on behalf of the business and agree to the Schedule of Charges and General Conditions attached to this letter. Your signature below will provide acceptance of this proposal, authorizing us to proceed. Please send a signed copy to our Kirkland office address (AESI, 911 5th Avenue, Kirkland, Washington 98033).

The undersigned has reviewed and accepts the attached General Conditions.

ASSOCIATED EARTH SCIENCES, INC.
Kirkland, Washington
Bruce L. Blyton, P.E.
Senior Principal Engineer

Client Date
Authorized Representative Signature

Client (please print name)

Attachments: Schedule of Charges/General Conditions

BLB/jh – 20220191E001-001

ASSOCIATED EARTH SCIENCES, INC.
SCHEDULE OF CHARGES

Our compensation will be determined on the basis of time and expenses in accordance with the following schedule unless a lump sum amount is so indicated in the proposal or services agreement. Current rates are as follows:

Personnel Charges - Engineers, Hydrogeologists, Geologists, and Scientists

Sr. Principal	$255.00/hour
Principal	$225.00/hour
Sr. Associate	$200.00/hour
Associate	$185.00/hour
Senior	$170.00/hour
Sr. Project	$160.00/hour
Project	$145.00/hour
Sr. Staff	$125.00/hour
Staff	$105.00/hour
Legal Testimony (4 hour minimum)	$400.00/hour

Personnel Charges - Technicians

Sr. Field Technician	$115.00/hour
Sr. Field Technician Overtime	$140.00/hour
Technician	$95.00/hour
Technician Overtime	$115.00/hour

Other Personnel and Disbursement Charges

Sr. Geographic Information Services (GIS) Analyst	$145.00/hour
Geographic Information Services (GIS) Analyst	$110.00/hour
Drafting and Graphics Specialist	$110.00/hour
Project Assistant	$110.00/hour
Technical Editor	$90.00/hour
Administrative Staff	$75.00/hour
Report Processing and Archiving	$10.00/each
Mileage	Federal Reimbursable Rate + 15%
Per Diem	To be established on a project basis
Subcontractors and Miscellaneous Expenses	cost plus 15%
Water Level Data Logger	$60.00/month
Barometer Data Logger	$40.00/month
Aerial Drone Equipment (certified drone operator charged separately)	$200.00/day
Bank/ACH Services or Fee	$25.00/unit [check]

Laboratory Charges

Atterberg Limit	$200.00/test
Consolidation	$600.00/test
Constant Head Permeability (ASTM D2434-68)	$450.00/test
Direct Shear	$400.00/3 point test
Ethylene Glycol Test (3 rock minimum)	$200.00
Fractured Face Count (AASHTO T-335)	$125.00/test
Hydrometer	$210.00/test
Moisture Content	$25.00/test
Organic Content	$80.00/test
Percent Passing #200	$105.00/test
Permeability (Falling Head)	$250.00/test
Proctor ASTM D-1557 and ASTM D-698	$255.00/test
Sand Equivalent	$125.00/test
Sieve with Wash #200	$200.00/test
Specific Gravity + #4	$125.00/test
Specific Gravity - #4	$150.00/test
Unit Weight	$80.00/test
Void Ratio	$125.00/test

Other laboratory tests, disbursement charges and equipment rental will be provided on a per job basis.

Effective January 2019

ASSOCIATED EARTH SCIENCES, INC.
GENERAL CONDITIONS

911 - 5th Avenue
Kirkland, Washington 98033
(425) 827-7701

508 S. Second Street, Suite 101
Mount Vernon, Washington 98273
(425) 827-7701

1552 Commerce Street, Suite 102
Tacoma, Washington 98402
(253) 722-2992

Right of Entry
The Client shall provide AESI legal access to and/or obtain permission for AESI to enter on all property, whether or not owned by Client, as necessary for AESI to perform and complete its work. Client is responsible to provide, by map or drawing, a description of the property, its location and the location of any buried utilities or structures, including but not limited to, underground storage tanks. Any damage that results to a buried utility, or to Associated Earth Sciences, Inc. (AESI) or subcontractor equipment, will be the responsibility of the client. Also, any additional charges for exploratory work, due to encountering the utility, will be the responsibility of the client. We will take reasonable precautions to minimize damage from use of equipment, but have not included in our fee the cost for restoration of damage which may result from our operations.

Hazardous Substances & Drill Cuttings
Client warrants that, prior to AESI beginning work, it will provide AESI with all information known, or which reasonably could be known by Client concerning the past or present use of the property and the nature and existence of any hazardous conditions or materials, on, in, under, adjacent to or near the property. When hazardous substances are known, assumed or suspected to exist at a site, AESI is required to take appropriate precautions to protect the health and safety of its personnel, to comply with applicable laws and regulations, and to follow procedures that AESI deems prudent to minimize physical risks to its personnel and the public. Hazardous substances may exist at a site where there is no reason to believe they could or should be present. AESI and Client agree that the discovery of unanticipated hazardous substances constitutes a changed condition mandating a renegotiation of the scope of work or termination of services. AESI and Client also agree that the discovery of unanticipated hazardous substances may make it necessary for AESI to take immediate measures to protect human health and safety, and/or the environment. AESI agrees to notify Client as soon as practically possible should unanticipated hazardous substances or suspected hazardous substances be encountered. Client encourages AESI to take any and all measures that in AESI's professional opinion are justified to preserve and protect the health and safety of AESI's personnel and the public, and/or the environment, and Client agrees to compensate AESI for the additional cost of such work. In addition, Client waives any claim against AESI, and agrees to indemnify, defend and hold AESI harmless from any claim or liability for injury or loss arising from AESI's encountering of unanticipated hazardous substances or suspected hazardous substances. Client also agrees to compensate AESI for work performed in defense of any such claim, with such compensation to be based upon AESI's prevailing fee schedule and expense reimbursement policy.

Client recognizes that, when it is known, assumed or suspected that hazardous substances exist beneath the surface of the project site, certain waste materials, such as drill cuttings and drilling fluids, should be handled as if contaminated. Accordingly, to protect human health and safety as well as the environment, AESI will appropriately contain and label such materials; will promptly inform Client that such containerization and labeling has been performed, and will leave the containers on site for proper, lawful removal, transport and disposal by Client. Client waives any claim against AESI and/or its professional staff, and agrees to defend, indemnify and hold AESI and/or its professional staff harmless from any claim or liability for injury or loss which may arise as a result of the drill cuttings, drilling fluids or other assumed hazardous substances being left on site after their containerization by AESI. Client also agrees to compensate AESI for any time spent and expenses incurred by AESI in defense of any such claim, with such compensation to be based upon AESI's prevailing fee schedule and expense reimbursement policy. AESI will act on behalf of Client to arrange for lawful removal, transport and disposal of hazardous substances and potentially contaminated drill cuttings, drilling fluids and wash water, if Client so requests, and Client agrees to compensate AESI based upon AESI's prevailing fee schedule and expense reimbursement.

Soil, rock, water and/or other samples obtained from the project site are held by AESI for no longer than 30 calendar days after the issuance of any document that includes the data obtained from them, unless other arrangements are mutually agreed upon in writing. Should any of these samples be contaminated by hazardous substances or suspected hazardous substances, it is Client's responsibility to select and arrange for lawful disposal procedures, that is, procedures which encompass removing the contaminated samples from AESI's custody and transporting them to an authorized disposal site. Client is advised that, in all cases, prudence and good judgment should be applied in selecting and arranging for lawful disposal procedures. AESI will act on behalf of Client to arrange for lawful removal, transport and disposal of hazardous substances if Client so requests, and Client agrees to compensate AESI based upon AESI's prevailing fee schedule and expense reimbursement.

Due to the risks to which AESI is exposed, Client agrees to waive any claim against AESI and/or its personnel, and to defend, indemnify and hold AESI and/or its personnel harmless from any claim or liability for injury or loss arising from AESI's containing, labeling, transporting, testing, storing or other handling of contaminated samples. Client also agrees to compensate AESI for any time spent and expenses incurred by AESI in defense of any such claim, with such compensation to be based upon AESI's prevailing fee schedule and expense reimbursement policy.

Aquifer Contamination
Subsurface drilling and sampling may result in unavoidable contamination of certain subsurface areas, as when a probe or boring device moves through a contaminated area, linking it to an aquifer, underground stream, or other hydrous body not previously contaminated and capable of spreading hazardous substances off-site. Because subsurface sampling is a necessary aspect of the work which AESI will perform on Client's behalf, Client waives any claim against AESI and/or its personnel, and agrees to defend, indemnify and hold AESI and/or its personnel harmless from any claim or liability for injury or loss which may arise as a result of alleged cross-contamination caused by drilling or sampling. Client further agrees to compensate AESI for any time spent or expenses incurred by AESI in defense of any such claim, in accordance with AESI's prevailing fee schedule and expense reimbursement policy.

Ownership of Documents
All designs, drawings, specifications, notes, data, sample materials (exclusive of hazardous substances), report reproducibles and other work developed by AESI are instruments of service and as such remain the property of Associated Earth Sciences, Inc.

Third Parties
All services performed by AESI and/or its personnel under this agreement are intended solely for the benefit of the client. Nothing contained herein shall confer any rights upon or create any duties on the part of AESI and/or its personnel toward any person or persons not a party to this agreement including, but not limited to any contractor, subcontractor, supplier, or the agents, officers, employees, insurers, or sureties of any of the above.

AESI shall not be responsible for the means, methods, or procedures of construction, nor for safety on the job site, nor for the contractor's failure to carry o
the work in accordance with the contract documents.

Insurance
Associated Earth Sciences, Inc. maintains General Liability Insurance for bodily injury and property damage with an aggregate limit of $1,000,000 per occurrence and we will furnish certificates of such insurance upon written request. Our liability to the Client for bodily injury or property damage arising out of work performed for the Client for which legal liability may be found to rest upon us, other than for professional errors and omissions, will be limited to our General Liability Insurance coverage. AESI also maintains professional errors and omissions insurance. We will furnish certificates of such insurance upon written request. No provision contained in the agreement between AESI and Client shall be construed to void, vitiate or adversely affect any insurance coverage held by AESI.

Standard of Care
Services performed by AESI under this agreement will be conducted in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions. No other representation, express or implied, and no warranty or guarantee is included or intended in this agreement or in any report, opinion, and document or otherwise.

Limitation of Liability
To the fullest extent permitted by law, the total liability of AESI and its principals, personnel and employees, to Client and anyone claiming by, through or under Client, for any and all claims, losses, costs or damages whatsoever arising out of, resulting from or in any way related to the Project or this Agreement from any cause or causes, including but not limited to the negligence, professional errors or omissions, strict liability, breach of contract or breach of warranty express or implied of AESI or its principals, employees or personnel shall not exceed $50,000 or the total compensation received by AESI under this Agreement, whichever is less.

The Client further agrees to require the contractor and its subcontractors to execute an identical limitation of AESI's and/or its personnel's liability for damages suffered by the contractor or subcontractors arising from the professional acts, errors, or omissions of AESI and/or its personnel. Increased liability limits may be negotiated upon Client's written request, prior to commencement of services, and upon Client's agreement to pay an additional fee commensurate with the increased risk. Any such increased limit of liability shall be established by written agreement signed by Client and AESI. As used in thissection, the term "liability" means liability of any kind, whether in contract, tort, strict liability or otherwise, for any and all injuries, claims, losses, expenses, or damages arising out of or in any way related to services provided by or through AESI.

Waiver of Consequential Damages
Client expressly waives as to AESI all claims for lost profit or any other indirect, incidental or consequential damages of any nature.

Indemnification
Client shall indemnify, defend, and hold AESI and/or its personnel harmless against all claims, damages, losses, and expenses, including but not limited to attorney's fees and court costs arising out of or in any way related to the services provided by or through AESI; provided that such defense and indemnification obligations shall not apply to claims, damages, losses or expenses that arise out of bodily injury to persons or damage to property to the extent caused by AESI's sole negligence; provided further that Client shall indemnify AESI against liability for damages, losses, or expenses arising out of bodily injury to persons or damage to property and caused by or resulting from the concurrent negligence of Client, its agents or employees and AESI, only to the extent of the negligence of parties other than AESI.

CLIENT AND AESI AGREE THAT THE PRECEDING PARAGRAPHS RELATING TO LIMITATIONS OF LIABILITY, WAIVER OF CONSEQUENTIAL DAMAGES AND INDEMNIFICATION WERE MUTUALLY NEGOTIATED AND THAT BUT FOR THE INCLUSION OF THOSE PROVISIONS AESI WOULD NOT HAVE ENTERED INTO THIS AGREEMENT, OR AESI'S COMPENSATION UNDER THIS AGREEMENT WOULD HAVE BEEN HIGHER.

Stability of Slopes
The Client also recognizes that risk is inherent with any site involving slopes and Client agrees to accept full responsibility for these risks. Client states that he understands that the information obtained or recommendations made may help to reduce the Client's risks and that no amount of engineering or geologic analysis can yield a guarantee of stable slopes. Therefore, in cases where there is no fault (i.e. no professional errors, omissions or negligence), Client agrees to hold harmless, defend, and indemnify AESI and/or its professional staff for claims from any source in the event of slope movement and any damage resulting.

Billing
Invoices will be submitted once per month and are payable upon receipt. Interest of 1-1/2% per month (but not exceeding the maximum rate allowable by law) will be added to any account not paid within 30 days.

Termination
In the event that the Client requests termination of the work prior to completion, we reserve the right to complete such analyses and records as required to place our files in order as we consider necessary to protect our professional reputation. At our discretion, a termination charge may also be made to cover our proposal and administrative costs relating to the project.

Integration
These General Conditions along with AESI's proposal letter constitute the agreement between AESI and Client, contain the entire understanding between the parties in connection with the subject matter, and supersede and replace all prior negotiations, agreements or representations, whether oral or written. These General Conditions take priority over any conflicting provisions contained within AESI's proposal. No modifications or changes to the agreement shall be effective or binding unless affirmed in writing by the party sought to be bound by the change or modification.

Client Initials _____

12787 Gateway Drive S. | Seattle, WA 98168 | 206.241.6000 | www.nhcweb.com

nhc
northwest hydraulic consultants

January 29, 2019

Nicole Sanders
City of Snoqualmie Public Works Department
38624 SE River Street
PO Box 987
Snoqualmie, WA 98065

Re: Sandy Cove Park Bank Protection and Restoration (Phase 2)

Dear Nicole:

Enclosed for your review and signature are two copies of Task Order No. 38 under the on-call services contract between the City of Snoqualmie (City) and Northwest Hydraulic Consultants Inc. (NHC). This task order will authorize NHC to perform engineering services related to bank protection and restoration at Sandy Cove Park and other locations along the Snoqualmie River.

A cost breakdown is attached for our estimated budget to be billed on a time and materials basis.

Please let me know if you have any questions or concerns. We look forward to working with you on this project.

Sincerely,

NORTHWEST HYDRAULIC CONSULTANTS

Derek Stuart

Derek L. Stuart, P.E.

ON-CALL SERVICES

HYDROLOGY, HYDRAULICS & STORMWATER MANAGEMENT

TASK ORDER NO. 38

SANDY COVE PARK BANK PROTECTION AND RESTORATION (PHASE 2)

AGREEMENT FOR PROFESSIONAL SERVICES

This Agreement is made this 28th day of January, 2019, by and between **Northwest Hydraulic Consultants Inc.**, hereinafter called "NHC," and the **City of Snoqualmie**, hereinafter called the "CITY."

NHC has an Agreement dated 23 January 2017 with the CITY, which is herein referred to as the **Prime Agreement**, and which provides for NHC performing unspecified professional services in hydraulics, hydrology, and related fields on an on-call basis, with specific work items to be identified in subsequent **Task Orders**.

The professional service which the CITY has employed NHC to perform under this Agreement constitutes **Task Order No. 38** under the provisions of the **Prime Agreement** and is generally described as follows:

Sandy Cove Park Bank Protection and Restoration (Phase 2)

NHC and the CITY, for mutual consideration hereinafter set forth, agree as follows:

1. SCOPE OF WORK. NHC, acting as additional city staff, shall perform services as directed by the City Director of Public Works, to assist the City of Snoqualmie with a topographic and bathymetric survey at Sandy Cove Park along the Snoqualmie River. The scope of work to be completed is attached.

2. PERIOD OF SERVICE. The period for services provided under this Task Order shall begin on January 28, 2019 and expire on December 31st, 2022.

3. COMPENSATION. The CITY shall pay NHC on a time and materials basis at NHC's current rates, as agreed to in the Prime Agreement, provided the total compensation payable under this Task Order shall not exceed $448,136 without the authorization of the CITY. The attached spreadsheet shows a budget for the tasks described above.

4. ADDITIONAL CONTRACT REQUIREMENTS. All other contract requirements are as specified in the Prime Agreement.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement effective as of the day and year first above written.

CLIENT:

CITY OF SNOQUALMIE, WASHINGTON

Signature: _____

Name: Matthew R. Larson

Title: Mayor

Address: P. O. Box 987

38624 SE River Street

Snoqualmie, WA 98065

Telephone: (425) 888-5307

Date of Execution:

2/26/2019

NORTHWEST HYDRAULIC CONSULTANTS INC.

Signature: _____

Name: Derek L. Stuart

Title: Principal

Address: 12787 Gateway Drive S.

Seattle, WA 98168

Telephone: (206) 241-6000

Date of Execution:

2/26/2019

12787 Gateway Drive S. | Seattle, WA 98168 | 206.241.6000 | www.nhcweb.com

nhc
northwest hydraulic consultants

Sandy Cove Park Bank Protection and Restoration - Phase 2

Prepared by Northwest Hydraulic Consultants Inc.

Scope of Work
Prepared for City of Snoqualmie
January 28, 2019

PROJECT DESCRIPTION

The City of Snoqualmie has requested that Northwest Hydraulic Consultants, Inc. (NHC) perform a second phase of the Sandy Cove Park Bank Restoration Project (NHC, 2014)[1]. An update to that design is needed due to major modifications that were made to the weir at the Snoqualmie Falls in 2012 by Puget Sound Energy (PSE). In addition to needing to characterize impacts due to these hydraulic modifications, the City's vision for the river has evolved and the City now requires a hydraulic and erosion hazard assessment focusing on the entire reach from SR-202 upstream to approximately Schusman Avenue SE (see sketch provided by City below right).

The primary objectives of the Project will include:

1. Develop an erosion risk assessment map that identifies locations where bank stability issues are most likely and specifically focuses on those locations where there are public safety and/or infrastructure damage implications. Specific areas of concern include:
    - riverfront houses north of Sandy Cove Park,
    - the river channel north of Sandy Cove Park,
    - river banks in and around Riverview park, and
    - the exposed stormwater outfall pipe at River Street.
2. Incorporate new criteria into the Sandy Cove Park bank restoration design concepts that were identified by City staff in relation to the Riverwalk Master Plan. As part of the design update NHC will also evaluate if the weir modifications made by PSE have changed the river hydraulics in a way that will require any modifications to the restoration design.

Figure-1: Sketch of Focus Area for River Hydraulic and Erosion Hazard Assessment

[1] NHC. 2014. Sandy Cove Bank Restoration Project. Prepared for City of Snoqualmie. Prepared by Northwest Hydraulic Consultants. Review Draft April 2013. Final Draft January 2014. NHC Project#200080.

3. Assess how proposed bank modifications at Sandy Cove Park will most likely affect the river, specifically the bank opposite of Sandy Cove Park and downstream;
4. Design of a new stormwater outfalls at River Street (90% PS&E) and King Street (30%).
5. A Scour assessment of Meadowbrook Bridge and erosion on the left bank of the river near Walnut Street. Optional design of embankment stabilization at Walnut Street (preliminary design).
6. A secondary objective of the Project will include a high-level assessment of potential floodplain restoration opportunities within and around the City's jurisdiction.

BACKGROUND

The PSE weir modifications were made during the 2014 NHC study (first issued in April 2013), and NHC made several recommendations related to the resulting changes to the hydraulics and geomorphology of the project reach:

- At the time of NHC (2014), the most recent hydraulic model calibration that had been performed was documented in 2008, before the weir at Snoqualmie Falls was lowered. NHC (2014) recommended that new calibration be performed after water-level data is collected from a post weir modification flood.
- The NHC (2014) geomorphic assessment noted the growing influence of significant gravel bars in the Snoqualmie River reach. In particular, erosion at the project site is likely the result of mid-channel gravel bar growth in the channel at Sandy Cove Park. The lowering of the PSE weir at Snoqualmie Falls lowered the water surface through the river reach and this is expected to further increase the relative prominence of gravel bars and their hydraulic impact on the flow. Additionally, lowering the weir will increase the hydraulic power and gravel bedload transport into the reach. Since sand and gravel have a direct impact on the stability of the river and river banks, this transition could have a major impact on banks at the Park.

The following scope of work defines the specific work plan tasks requested by the City.

Task 1. Data Collection, Kick-off Site Inspections, Geomorphic Assessment, and Sub-Surface Borings

Two kick-off meetings will be held. The first will be an internal meeting attended by NHC and City staff. The second meeting also include City staff, but other project stakeholders such as King County, the Snoqualmie Tribe, and/or permitting agencies will also be invited. The purpose of these meetings will be collection of information needed to establish the project objectives and constraints that will guide development of project concepts. NHC will assist the City with development of the meeting agenda.

NHC will collect and review readily available data pertaining to the project. This may include historical aerial and ground photographs, available hydrologic data and reports for the Snoqualmie River, previous hydraulic analyses, property boundary information, and other relevant data. The City will provide NHC with any related data it may have. The City will be responsible for obtaining property owner permission to conduct surveys on private land.

NHC's design team will travel to and assess how physical conditions of river and project site have changed since 2012. This evaluation will examine channel/floodplain relationships, erosion characteristics, channel stability

concerns, and site-specific constructability issues. Special attention will be paid to recent channel evolution in response to the 2014 weir modifications and the anticipated response of the river and potential impacts to channel/habitat conditions upon construction of the project. This review is critical for understanding how the river will likely respond to the bank protection, as well as helping to define key elements to include in the design.

NHC will explore subsurface conditions at the site by drilling a total of two borings to approximately 20 to 25 feet below the river thalweg, not exceeding 80 feet of total drilling footage. The borings are intended to support a request from permitting agencies for a pile reinforced design at Sandy Cove Park. The drilling will be subcontracted by NHC to a drill rig operator. NHC will call the state "dial-before-you-dig" contractor number to clear utility locations prior to the explorations. However, we request that the City (or other property owner if land is not owned by the City) clear and/or identify any site utilities. The borings will be monitored by NHC's geologist (or geotechnical engineering sub-consultant), he/she will obtain soil samples, classify the materials, and maintain a detailed log of each exploration. The collected soil samples will be used for laboratory testing of physical characteristics such as moisture content and sieve analysis.

Assumptions:

- The City will provide NHC with plans for the Riverwalk Park trail (draft or final), including the Subsurface Exploration, Geologic Hazard and Geotechnical Engineering Report (AESI, September 25, 2017).
- NHC has assumed that all sub-surface explorations can be completed in a single day using a track or, if space allows, a truck mounted drill rig.
- NHC has assumed that soil collected by the drill can be left on-site following the exploration.

Task 2. Field Survey and Development of Digital Terrain Model

NHC will conduct a topographic and bathymetric survey of the project reach, capturing enough detail to update to the hydraulic model and development of conceptual bank protection designs for the site. Two days of fieldwork have been allocated to perform the survey using a two-man crew, jet sled, RTK GPS and eco-sounder. In addition to this, one day of post-processing the survey data in the office is also included.

There are multiple legacy terrestrial survey datasets that will be referenced as part of this project; these include:

- Survey data collected for the Riverwalk Trail project by KPFF in 2017 and stamped by their Professional Land Surveyor (PLS) was provided to NHC by the City in datafile "41600532TOPOBM.DWG". This is the most comprehensive of the three existing terrestrial survey datasets.
- Perteet 2016 survey performed for the Snoqualmie Infrastructure Improvements Project (AutoCAD filename "20160013_Topo.dwg"). This survey is focused on roadway corridors and has only limited information in the river corridor. This dataset is not expected to be widely applicable.
- Terrestrial survey of Sandy Cove Park was also collected by NHC in 2012 as part of the NHC (2014) project.
- Base mapping for the Meadowbrook bridge site work will be based on the April 2003 King County survey documented in CAD files "x_survey.dwg" and "MB_basemap.dwg".

In addition to the bathymetric survey NHC will perform up to 2 days of additional field terrestrial survey using RTK GPS methods to fill in gaps in the existing terrestrial survey datasets. The primary area that is expected to require additional refinement is the river bank in the vicinity of Sandy Cove Park where the river has been advancing into the park. Some limited survey in the vicinity of the Meadowbrook bridge may also be required to support the bridge scour assessment (Task 11)

The new bathymetry, new terrestrial survey, and legacy survey datasets will then be reviewed by NHC and compiled into a single digital terrain model (DTM) surface including the river corridor and floodplain that can be used for hydraulic modeling and detailed design at the Sandy Cove Park site. The complied surface will include the new bathymetry data, terrestrial survey data sets, and 2016 bare earth LiDAR ground surface data. This effort will focus on adding break lines and other refinements of the bathymetric survey data as needed to define the river bathymetry for hydraulic modeling. NHC has allocated up to four days of office time (32 hours) to complete these refinements.

Assumptions:

- The bathymetric survey will be limited to the mainstem reach of the Snoqualmie River between the North Fork and Middle Fork confluence and the SR-202 Bridge. Survey of the South Fork is not currently included within the scope of the survey.
- The City will be responsible for obtaining property owner permission to conduct surveys on private land.
- The City will open a gate at SE Reinig Road and 396th Drive SE that is required for vehicular access to the river. It is also assumed this access route is in a condition adequate for use as a boat launch (it was used for this purpose in 2012). Additional time required to identify an alternative access location is not included in the hour and fee estimate.

Deliverables:

- X,Y,Z coordinate file for bathymetric survey including the river reach near Sandy Cove Park with proposed bank restoration.

Task 3. Hydraulic Modeling Plan and Model Development

There are several aspects of the project that will require riverine hydraulic modeling to support engineering analysis and mapping. All prior hydraulic modeling within the City[2] has utilized a one-dimensional (1D) model, but the tasks included in this task order are arguably better supported by a two-dimensional (2D) hydraulic model application. At a minimum, significant updates to the existing 1D model are required.

[2] Previous significant hydraulic modeling of the Snoqualmie River has been performed with HEC-2 (e.g. NHC, 1993) or HEC-RAS 1D (e.g. NHC, 2008, 2014; King County, 2015; and the City's on-going LOMR study to be completed in 2019).

NHC always recommends that our clients develop some form of a modeling plan at the onset of a project that includes a significant modeling task to ensure that current and future modeling objectives are addressed by the project. There are three primary project objectives related to hydraulic modeling:

- design of bank restoration measures at Sandy Cove Park,
- scour assessment of Meadowbrook bridge
- detailed flood routing and hazard mapping across the floodplain within the City and its UGA. This will be used for evaluation of floodplain restoration opportunities (Task 11b) and also future infrastructure work within the Kimball Creek corridor (roadways and bridges).

NHC will develop a draft modeling plan that will recommend which 1D model, 2D model, or combination of models will be used for the project, what input data will be used, and what outputs will be needed. A few of the models NHC commonly recommends for similar studies include the U.S. Army Corps of Engineers HEC-RAS 1D, HEC-RAS 2D, Adaptive Hydraulics (AdH), and the U.S. Bureau of Reclamation's SRH-2D. Each of these tools have advantages and disadvantages. Generally speaking HEC-RAS is preferred for simulating flood depths across larger floodplain areas and AdH and SRH-2D is preferred for modeling detailed bridge and structure hydraulics.

For the purposes of developing an estimate for model development under this task, it is assumed that three different hydraulic modeling approaches will be applied for the project as illustrated in Figure-2.

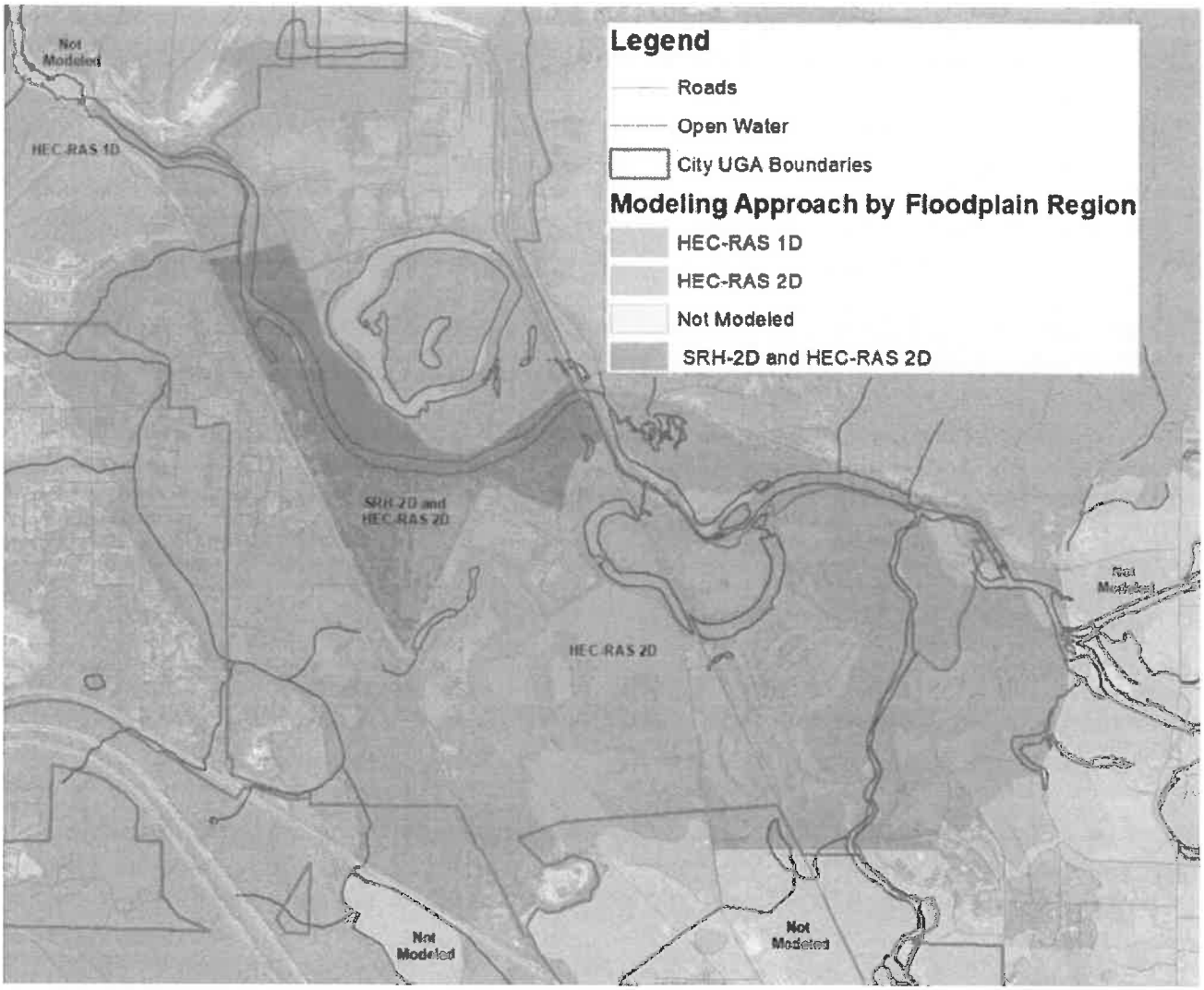


Figure-2: Proposed Hydraulic Model Extents and Modeling Approach by Floodplain Region

Proposed modeling approaches shown in Figure-2 include:

- The floodplain region shaded blue will be modelled with HEC-RAS 2D, extending from the Middlefork and North Fork Snoqualmie River confluence downstream to the SR-202 bridge. Areas in Northbend and to the east shown as "Not Modeled" on Figure-2 will not be included in the model domain. Flows from the South Fork Snoqualmie River Flood Insurance Study (FIS) will be used to define inflows entering the HEC-RAS 2D model at the South Fork Snoqualmie River boundary. The HEC-RAS 2D model will be used to simulate flood depths and overland flow velocities and will provide time-series of water-level and inflows for the SRH-2D model.

- The region in dark purple, extending from the Snoqualmie Valley Trail railroad bridge crossing downstream to Kimball Creek, includes the Sandy Cove Park bank restoration project and the Meadowbrook Bridge scour assessment and will require the SRH-2D model for engineering design; this region will also be included in the HEC-RAS 2D model. Southeast Mill Pond Road will form the northern boundary of this model and Railroad Avenue will form the southern boundary.

- The region shaded green, downstream of SR-202 to the Snoqualmie Falls weir, will be modeled with the existing 1D HEC-RAS model.

All three models will utilize the same DTM of the ground surface developed under Task 2. The HEC-RAS 2D model will utilize a coarser mesh than the SRH-2D model, but it will also require breaklines to be defined along roadways and other prominent embankments. NHC will define these breaklines for all railroads and major public roadways affecting flood flows within the City that are visible within the existing 2016 LiDAR dataset.

The manning's N roughness coefficients used in the HEC-RAS 2D model will be assigned similar values to those in the existing 1D HEC-RAS model that was previously calibrated to high water marks (HWMs) surveyed for the 2006, 2009, and 2015 floods. Only the 2015 flood HWMs are representative of the current weir configuration at Snoqualmie Falls. A limited effort (8 hours) is included in NHC's fee estimate to allow for limited refinement of the in-channel roughness coefficients to improve the match to the 2015 flood HWMs.

The models will then be applied to compute the hydraulic information needed to develop the conceptual alternatives (e.g. flow velocities and depths) and for calculations of scour along the bank, riprap sizing and/or large woody debris ballast forces required for subsequent tasks.

Note: The City is currently performing a LOMR study that will result in an updated 100-year FEMA floodplain and floodway maps based on output from the existing 1D HEC-RAS model. NHC discussed the use of an updated 2D HEC-RAS model for that study and the FEMA LOMR reviewer expressed that the LOMR should utilize the 1D HEC-RAS model, not the 2D, for the floodway analysis. NHC expects that the HEC-RAS 2D model will inform the LOMR, but that study and associated FEMA mapping will proceed using the 1D HEC-RAS model.

Assumptions:

- No new hydrologic analysis is included in this task order.

Deliverables:

- Input and output files for models developed under Task 3.

Task 4a. Assessment of Bank Erosion near Sewer Pipe on Left Bank at Walnut Street

NHC took photographs documenting erosion along 500 feet of the left bank of the Snoqualmie River upstream of the Meadowbrook bridge at Walnut Street during site visits following the 2006 flood (example photos

included below). There is a sewer pipe that runs parallel to the Snoqualmie River at this location; erosion impacts to this sewer pipe are of specific concern to the City.

Figure 3: 2007 Photos of Bank Erosion near Sewer Pipe upstream of Meadowbrook Bridge at Walnut Street

Under this task NHC will provide a specific assessment of the river bank near Walnut Street. The assessment will leverage the conclusions on river migration made as part of the geomorphic assessment in Task 1 and add a new site inspection of the current bank conditions. The assessment will characterize the current processes affecting erosion of the river bank and, depending on the severity of the erosion at the site, recommendations for mitigating additional erosion and protecting the sewer pipe from being compromised will be provided to the City in a technical memorandum.

Deliverables:

- Memorandum documenting the assessment of bank erosion at Walnut Street and recommendations for mitigating additional erosion.

Assumptions:

- The bank stabilization measures recommended for the Walnut Street site will be simple. Up to three concepts with minor variations will be illustrated.
- Meeting to discuss Meadowbrook erosion hazard and design concepts for the site (Meeting #3).

Task 4b. Conceptual Design of Bank Stabilization Measures near Sewer Pipe on Left Bank at Walnut Street

The erosion and mitigation concepts recommended as part of Task 4a will be developed into 8.5" x 11" JARPA format drawings adequate for permit application submittal (permit application is to be performed under Task 5).

48 North Solutions scope of work and fee estimate for the River Street embankment and Sandy Cove Park included as Attachment A does not include the Walnut Street embankment. It is assumed that adding this site to the permit package will add 25% to the total permitting cost for the River Street embankment and Sandy Cove Park. If 48 North Solutions final estimate for the Walnut Street embankment is larger, then the fee estimate associated with this element of the Task Order may need to be amended.

Deliverables:

- 8.5" x 11" JARPA format drawings

Assumptions:

- No cultural resources support is included for the Walnut Street site.

Task 5. Refinement of Preferred Alternative, 60% Design Drawings, and Permitting Support

NHC will produce a Basis of Design (BOD) Report memorandum (1-3 pages) that presents documentation supporting the project design and summarizing technical analyses developed for the project. The BOD Report will integrate and/or reference technical documentation from NHC (2014) and earlier tasks and describe the physical processes that have caused the erosion problem for review and use by the City and other stakeholders. The BOD report will be updated and expanded as part of subsequent tasks serving as the final design documentation report at the completion of Task 6. The memorandum will be submitted in draft form to the City for review and will be finalized following receipt of comments.

NHC will refine the "preferred" lower bank alternative L1 from NHC (2014) (see attachment) based on the updated hydraulic model output and new criteria identified by City staff. The refined alternative (1) will again target a design that is practical, cost effective, durable and likely to receive approval from the permitting agencies. A simple drawing of the concept, similar to that provided in NHC (2014), will be prepared and a preliminary construction cost estimate developed.

In addition to refining the preferred alternative as part of this task, NHC will also assess how the proposed bank modifications will most likely affect the river, specifically the bank opposite of Sandy Cove Park and downstream.

NHC's permitting sub-consultant, 48 North Solutions, will prepare and submit all permits. NHC will support 48 North Solutions with information needed to prepare the environmental permits such as grading quantities. A scope of work for 48 North Solutions that is associated with both this and a potential project at the River Street embankment is included as Attachment A with narrative of cost savings between the two related projects.

NHC's cultural resources sub-consultant, Stell, will perform a review of pertinent literature on the archaeology, ethnography, and history of the project area to determine the probability for archaeological resources and traditional cultural properties in the project area. The scope of work for Stell is included as attachment B. A cultural resources field survey is not included in the current project budget.

NHC will incorporate one round of comments from permitting agencies, King County, and/or the City, make revisions, and develop details for the 60% design, special provisions and quantity estimates. The 60% plans will also be developed in JARPA format (8.5"x11") to support permitting. Special provisions will be developed assuming the WSDOT Standard Specifications for 2018 unless NHC is otherwise directed by the County. The project QAQC plan, including senior review of all deliverables will be followed throughout the design process.

Assumptions:

- NHC will use its standard CAD templates for all drawings, such as borders, titles, and plot files, etc.
- City will provide information on property boundaries (ROW, property lines, easements), Riverwalk Park layout and planting plan in the vicinity of the bank protection project.
- See Design Meeting, Deliverable, and Comment Workflow summary at end of scope of work for commentary of design review and comments. It is assumed that comments on the 30% and 60% submittal packages will each be returned to NHC within 3 weeks.
- Review comments for each design submittal (30% and 60%) will be provided to NHC in one set from each stakeholder (i.e. not individual sets of comments from individual staff).
- Time is included for one meeting following both the preliminary and 60% design submittals.
- The City will be responsible to pay any federal, state, or local permitting costs or associated fees.
- No cultural resources exist at the site. If remains or artifacts are identified, or a cultural resources field survey is deemed necessary, the contract will be amended to include the required expertise.
- The City would like to enhance the wetland within Sandy Cove Park. It is assumed that this enhancement will include plantings, signage, and similar minor interventions (i.e. not earthwork or structures). NHC has assumed 8 staff hours for discussion and design of these elements. If a more extensive design is requested additional design hours may be required.
- It is assumed that the refined alternative concept will be expanded upstream and downstream, not exceeding 3 times the extent of the alternative documented by NHC (2014) as L1.
- Design of the "Upper Bank" above Sandy Cove Park and including the King Street lot is not included in this Task Order.

Deliverables:

- Draft and Final 11"x17" 60% design drawings, special provisions, and quantity estimates.
- One draft of JARPA format drawings (8.5" x11") for construction grant applications.
- Meeting to discuss the 30% design. It is assumed that the erosion risk assessment mapping (Task 8) will be discussed at the same meeting.

- A meeting with the City to discuss possible refinements to the 60% embankment design (following Task 5).

Task 6. Final Design and Embankment Design Documentation

NHC will develop the 90% final construction plans, special provisions and cost estimates (PS&E) by revising the design based on comments provided by the City and adding further details. NHC will attend a design review meeting to discuss final revisions and comments with the City.

NHC will provide a TESC plan covering both in-water and upland construction and staging areas.

The Basis of Design report from Task 5 will be updated to document design methods and summarize analyses added to the design in Task 6.

KPFF will provide bid package assembly support including coordination of specification questions developed by contractors during the bid process for the Division 01 Specifications. Revision of design specifications as needed to reflect clarifications during contractor bidding. KPFF will also assemble the division 1 specifications and specification deliverables. The project specifications will be compiled for 90% and Final design submittals as listed in the NHC proposal in PDF format. KPFF will review and provide a comment matrix with proposed corrections for the Division 01 Specifications. Recommendations for specification editing, including draft language will be provided based on comments for the City's use. KPFF's scope of work and fee estimate for the River Street project is included as Attachment C. If KPFF's final estimate for similar services on the Sandy Cove Park project is larger than that for the River Street project the fee estimate associated with this element of the Task Order may need to be amended.

Assumptions:

- City will provide information on property boundaries (ROW, property lines, easements), Riverwalk Park layout and planting plan in the vicinity of the bank protection project,
- See Design Meeting, Deliverable, and Comment Workflow summary at end of scope of work for commentary of design review and comments. It is assumed that comments on the 90% submittal package will be returned to NHC within 3 weeks.
- Development of a construction traffic control plan will be included as part of the Riverwalk project and is not included as a deliverable for this project.
- NHC staff to provide construction inspection and/or support services is limited to the hours prescribed under Task 14.
- NHC will make a final set of revisions based on the final design meeting (1) and one set of comments provided by the County.

- The necessary Division 01 specifications will be provided from the City to NHC and KPFF for KPFF's use and review.
- Specification Sections provided by the City will be in CSI format and will not require formatting over and above compiling the sections into different document types.

Deliverables:

- NHC will submit the final design package stamped by a Washington State registered Professional Engineer consisting of plans (PDF), special provisions (MS Word), and engineer's cost estimate. A basis of design memorandum will be prepared to document design methods and summarize analyses.
- TESC plan for in-water and upland construction and staging areas.
- meeting with the City to provide an overview of the possible refinements to the final design (occurs during Task 6). It is assumed that the floodplain restoration sites identified as part of Task 11b will also be discussed at this time.

Task 7. No-Rise Analysis and Certification

The proposed bank protection project is located within FEMA's regulatory floodway for the Snoqualmie River. A FEMA No-Rise assessment is required to demonstrate that the project would not result in any increase in flood levels during the occurrence of the base (100-year) flood discharge. The hydraulic model built in Task 3 will be used to assess any rise. If the bank protection design meets FEMA's No-Rise criteria, then it will be documented in a short memorandum. If no design is identified that meets FEMA's criteria, then pursuing the proposed design may necessitate a CLOMR (Conditional Letter of Map Revision) which notifies FEMA and the surrounding communities of intent to increase the 100-year flood profile. If a CLOMR is pursued, significant additional effort will be required that is beyond this scope of work. If requested, a separate scope and budget can be prepared.

Assumptions:

- It is possible the proposed design will not meet FEMA's No-Rise criteria. If NHC identifies this as the case, a meeting will be held with the City to discuss options.

Deliverables:

- Short memorandum documenting the No-Rise analysis results and certification.

Task 8. Erosion Risk Assessment Mapping

NHC will develop an erosion risk assessment map for the focus reach that characterizes the bank condition along the project. The assessment will make special note of evidence of erosion near private residential property (e.g. any evidence of erosion near homes on left bank of river between Sandy Cove Park and the SR-202 bridge). In addition to noting existing bank erosion, the assessment will also identify areas with a high likelihood of future

erosion. The future erosion assessment work will leverage elements of the Geomorphic Assessment completed as part of NHC (2014) such as Exhibit 8 "Historical Channel Change" and Exhibit 9 "Historic Channel Occupancy".

Deliverables:

- Maps of erosion risk in PDF and/or GIS format.

Assumptions:

- It is assumed that the erosion risk assessment mapping will be discussed at the same meeting the preliminary designs are discussed (Meeting #4). Therefore, no additional hours for attending that meeting are included in Task 8.

Task 9. River Street Stormwater Outfall 30% and 90% Design

The existing stormwater outfall at River Street and Park Avenue was found to be undersized as part of the 2015 Snoqualmie Infrastructure Improvement Project (NHC, 2015). The existing outfall pipe, a galvanized pipe circled red in the 2017 KPFF survey shown below, is approximately 40 feet in length.

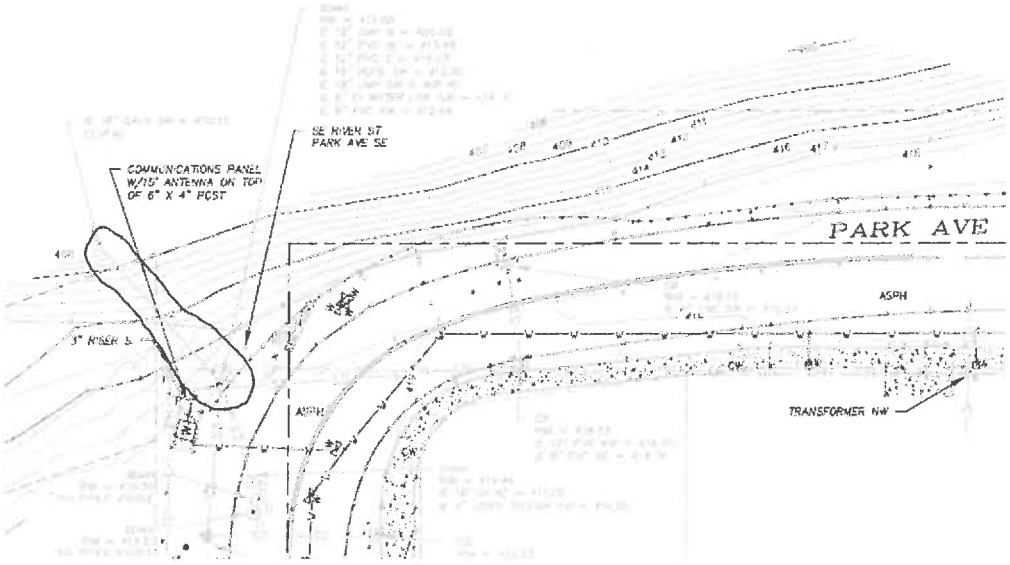


Figure 4: River Street Stormwater Outfall Pipe (circled red) in 2017 KPFF Survey Drawing

NHC will develop 30%, and 90% final construction plans, special provisions and cost estimates (PS&E) for a new stormwater outfall to the Snoqualmie River at River Street. The replaced outfall line will be located in the same basic alignment as the existing pipe and match existing upstream and downstream inverts.

NHC will attend a design review meeting to discuss final revisions and comments with the City.

NHC will provide a TESC plan covering both in-water and upland construction and staging areas.

Assumptions:

- The design fee estimate for the River Street outfall design assumes that stormwater modeling and other technical analysis for sizing the outfall pipe will be included and performed as part of the City's on-going stormwater utility plan efforts. If that analysis is not included in that project this task may need to be amended to include modeling of the stormwater system. It is assumed that effort will result in a 10% design (size, discharge, depth, material, etc.). If the stormwater modeling analysis confirms that this outfall is not undersized this task may be omitted.
- NHC will use its standard AutoCAD file template for the drawings, such as borders, titles, and plot files.
- City will provide information on property boundaries (ROW, property lines, easements).
- Any survey effort, including preparation of documents, for any new easements that may be required is NOT part of this scope.
- The same staging area used for the River Street embankment repair construction will also be available and suitable for construction staging for the outfall replacement.

Deliverables:

- Draft and Final 30%, 60%, and 90% construction plans, special provisions and cost estimates (PS&E) for a new stormwater outfall to the Snoqualmie River at River Street.
- TESC plan covering both in-water and upland construction and staging areas for River Street outfall replacement.
- A meeting with the City to provide an overview of the 30% outfall designs (discussion of deliverables for Tasks 9 and 10).

Task 10. King Street Stormwater Outfall 30% Design

The existing stormwater outfall at King Street and Falls Avenue was found to be undersized as part of the 2015 Snoqualmie Infrastructure Improvement Project (NHC, 2015). The existing outfall pipe, a 15" galvanized pipe circled red in a hybrid of the 2017 KPFF and NHC 2012 surveys shown below, is approximately 260 feet in length.

Figure 5: King Street Stormwater Outfall Pipe (circled red)

NHC will develop 30% construction plans and planning level cost estimate for a new stormwater outfall to the Snoqualmie River at King Street.

NHC will attend a design review meeting via phone to discuss final revisions and comments with the City.

Assumptions:

- The design fee estimate for the River Street outfall design assumes that stormwater modeling and other technical analysis for sizing the outfall pipe will be included and performed as part of the City's on-going stormwater utility plan efforts. If that analysis is not included in that project this task may need to be amended to include modeling of the stormwater system. It is assumed that effort will result in a 10% design (size, discharge, depth, material, etc.). If the stormwater modeling analysis confirms that this outfall is not undersized this task may be omitted.

- NHC will use its standard AutoCAD file template for the 90% plan set, such as borders, titles, and plot files.

- City will provide information on property boundaries (ROW, property lines, easements).

- The gravel parking lot between Sandy Cove Park and the bowling alley will be suitable for construction staging.

- No cultural resources support is included for the stormwater pipe replacement corridor.

- No arborist will be required for the project or one will be provided by the City separately from this Task Order.

Deliverables:

- Draft and Final 30% construction plans and cost estimates (PS&E) for a new stormwater outfall to the Snoqualmie River at King Street.

Task 11a. Scour Assessment of Meadowbrook Bridge – Technical Work

The historic Meadowbrook bridge (WSDOT Bridge No. 1726A) was constructed in 1921 and is documented by the Historic American Engineering Record (HAER). The last work on the bridge structure was made in 2005 when King County performed some minor improvements to the abutments. City would like to better understand the potential for scour of the bridge sub-structure (see Figure 6) and has asked NHC to perform a scour assessment and confirm the scour code for the structure, which was listed as 5 at the time of the most recent inspection.

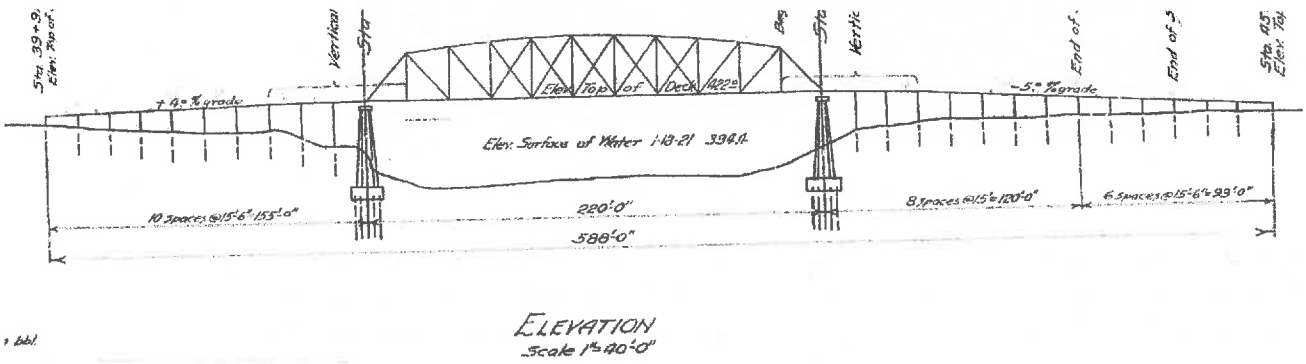


Figure 6: Elevation View of Meadowbrook Bridge from February 1921 Design Drawings

NHC will work with City staff to capitalize on existing data and information that will be necessary to efficiently perform the hydraulic and scour analysis. Existing information includes but is not limited to that from other tasks in this scope of work, bridge inspection records, bridge plans, geotechnical reports, and piling driving records.

NHC will conduct a field inspection to examine the characteristics of the bridge, and surrounding reach with respect to hydraulic, erosion, and scour processes. The purpose of this inspection is to understand site hydraulics and channel conditions, with an emphasis on determining scour susceptibility to the structure and roadway. Field measurements will include: characterizing sediment size, estimating channel/floodplain roughness, bridge measurements, assessment of existing scour protection, documenting lateral and longitudinal erosion, identification of high water marks, and other relevant information to aid in the scour assessment. A groundline survey will be performed using a tape down method at the upstream bridge face.

The 2D hydraulic model developed for Task 7 will be applied to ascertain the hydraulic characteristics necessary to support the scour evaluation of the existing structure.

NHC will examine scour susceptibility of the existing structure, scour protection and river banks utilizing various design manuals such as HEC-18 and HEC-23. A scour evaluation will be performed following the guidelines described in the Washington State Bridge Inspection Manual, Chapter 5 and FHWA HEC-18, 5th Edition. If scour/bank protection measures are needed based on scour evaluation, NHC can work with City staff to develop preliminary design concepts in a separate task order.

Assumptions:

- Base mapping for the bridge will be based on the April 2003 King County survey documented in CAD files "x_survey.dwg" and "MB_basemap.dwg".

Task 11b (Optional). Scour Assessment of Meadowbrook Bridge – Reporting and Plan of Action

City staff may elect to halt additional work on the scour assessment by not authorizing optional Task 11b if the results of Task 11a indicate that the scour condition of Meadowbrook Bridge is not of concern.

If authorized, NHC will summarize the results of the bridge hydraulic and scour evaluation in a brief technical memorandum. The memorandum will include a description of the physical characteristics of the site, including photographs taken during the site reconnaissance; text, tables, and figures that describe the results of the hydraulic and scour analysis. A draft version of the report will be provided to the City for review and one set of comments. Upon receipt of comments, NHC will finalize the memorandum and submit digital or hard copies as requested by City. The results of the scour evaluation will also be recorded in a WSDOT Scour Summary Sheet (5.04-A-1).

NHC will assist City of Snoqualmie staff in the development of a Scour Critical Plan of Action (POA) if it is deemed necessary from the scour evaluation. Up to 8 hours is available for assistance.

Deliverables:

- Draft and final versions of a technical memorandum documenting the scour assessment results.
- WSDOT Scour Summary Sheet (5.04-A-1)

Task 12. Assessment of Potential Floodplain Restoration Opportunities

A high-level assessment will identify potential floodplain restoration opportunities within and around the City's jurisdiction. Concepts that could be included involve:

A. lowering Reinig Road to allow the Snoqualmie River to flow through Borst Lake, and across Mill Pond Road back to the Snoqualmie River north of downtown,

B. activating side channels through the three forks natural area.

The concept will be evaluated with the 2D hydraulic model and a memorandum describing the restoration concepts and potential challenges and/or benefits will provided to the City for discussion.

Deliverables:

- Short memorandum providing commentary on the viability and/or obstacles related to identified floodplain restoration opportunities.

- Meeting to discuss potential floodplain restoration opportunities (occurs during Task 11b). It is assumed that this meeting will coincide with the final design meeting for Task 6 (i.e. no hours for a separate meeting are included as part of Task 11b).

Task 13. Project Management/Administration and Quality Control

NHC will keep the City's project manager informed on project activities through the use of email and phone. Meeting dates will be set well in advance to ensure adequate time to secure commitments from key participants. Monthly invoices will be submitted that are accompanied by a brief progress report. Each progress report will detail the following:

1. Work completed from the Scope in this billing period.
2. Work anticipated for next billing period.
3. Project issues that need to be addressed.
4. Tracking of any work performed outside the original scope.

Quality control services performed under this Task includes a drafting a quality control and quality assurance plan memorandum at the outset of project work. The QAQC plan will document measures NHC will implement to assure that the deliverables are on-time, technically sound and meet professional industry standards, and to ensure effective and accurate analyses and development of recommendations, including demonstration of effective integration of multiple disciplines.

Task 14. Construction Support.

NHC staff will provide up to 70 hours of on-site construction inspection and supervision to ensure that the design is implemented properly by the contractor.

DESIGN MEETING, DELIVERABLE, and COMMENT WORKFLOW SUMMARY

1. Kickoff
    - Initial internal kick-off meeting for the project (Task 1), may be via phone
        - Attended by NHC, City, Subconsultants
    - External kick-off meeting for the project (Task 1)
        - Attended by NHC, City, County, Subconsultants, Tribe
2. Initial assessment of Walnut Street Embankment (Task 4a)
    - Meet with City staff to discuss assessment of Walnut Street and recommend if embankment design concept is needed (Meeting #3).
3. Refinement of NHC (2014) preferred concept for Sandy Cove Park embankment (Task 5) and develop concepts for Walnut Street embankment, if needed (Task 4b).
    - Develop concept alternatives (project objectives, narrative memorandum, simple figure, concept comparison table)
        - Submit to City
    - No-Rise memorandum, assuming the proposed design meets No-Rise criteria (Task 6)
        - Submit to City
    - Meeting to decide on preferred alternatives (Meeting #4)
        - Attended by NHC, City
        - Submit to stakeholders
    - Receive comments from all stakeholders and incorporate in next milestone
4. Sandy Cove Park Embankment 60% Design (Task 5)
    - Develop 60% plans (preferred alternative), construction notes, technical special provisions, cost estimate, BOD
        - Submit to stakeholders and 48 North in JARPA format
    - 48 North to submit 60% package for permits
        - Meeting to discuss 60% submittal (Meeting #5)
        - Attended by all stakeholders
    - Receive comments from all stakeholders (including permit agencies) and incorporate in next milestone
5. Sandy Cove Park Embankment 90% Design (Task 6)
    - Develop 90% plans, complete specifications, cost estimate, BOD
        - Submit to stakeholders
    - Meeting to discuss 90% submittal (Meeting #6)
        - Attended by NHC, City
    - Receive comments from City and incorporate in next milestone
6. River Street Stormwater Outfall 30% Design (Task 9) and King Street Stormwater Outfall 30% Designs (Task 10)
    - Develop 30% drawing of stormwater outfall pipe, construction notes, planning level cost estimates, narrative memorandum
        - Submit to City
    - Receive comments from City and incorporate in next milestone (River Street outfall only)
7. River Street Stormwater Outfall 90% Design (Task 9)
    - Develop 90% plans (including TESC), complete specifications, cost estimate, BOD

        - Submit to City
    - Meeting to discuss 90% River Street stormwater outfall submittal (meeting via phone)
        - Attended by NHC, City
    - Receive comments from City and incorporate in next milestone
8. Final Sandy Cove Park Embankment 90% Design (Task 6) + River Street Stormwater Outfall 90% Design (Task 9)
    - Develop final plans, complete specifications, cost estimate, BOD
        - Submit to City only

OTHER DELIVERABLES INDEPENDENT OF DESIGN WORKFLOW

1. X,Y,Z coordinate file for bathymetric survey including the river reaches at Sandy Cove Park and Walnut Street with proposed bank restoration. (Task 2)
2. Input and output files for models developed under Task 3.
3. Maps of erosion risk in PDF and/or GIS format. (Task 8)
4. Draft and final versions of a technical memorandum documenting the scour assessment results. (Task 11b)
5. WSDOT Scour Summary Sheet (5.04-A-1) (Task 11b)
6. Short memorandum providing commentary on the viability and/or obstacles related to identified floodplain restoration opportunities. (Task 12)

TIME AND PERFORMANCE

1. At a schedule coordinated with City staff following issuance of this Task Order.

COST ESTIMATE

As listed in the following table, the cost estimate for NHC to complete this work is $448,136 if the City elects to include ESA consultation, a mitigation plan (i.e. 48 North Solutions Optional Task), specialized geotechnical engineering services, and authorizes use of a 10% contingency. The actual effort required for this project may be reduced to as little as $277,843 based on use of the contingency and two factors related to the effort required for permitting:

1) If the River Street embankment protection project is also authorized there will be an estimated $38,170 savings in permitting and cultural resources research costs to the Sandy Cove Park Bank Restoration Project alone (this is in addition to similar savings to the River Street embankment protection project).
2) If the ESA consultation and/or a mitigation plan (48 North Solution's optional task) are not needed for the Sandy Cove Bank Restoration project an additional $20,342 could also be saved.

If the full $448,136 is budgeted, the City could place between $40,740 and $162,732 as optional and/or management reserve tasks that would require City staff authorization to activate if required based on these factors that cannot currently be determined.

nhc

Sandy Cove Park Bank Protection and Restoration - Phase 2

January 28, 2018
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Prepared for: City of Snoqualmie
Project: Sandy Cove Park Bank Protection and Restoration (Phase 2)
Date: January 28, 2019
Project No.: 2003862
Prepared By: Derek Stuart/Erik Rowland

	TASK DESCRIPTION	Principal Erik Rowland or Casey Kramer	Principal T3 Derek Stuart, Vaughn Collins, or Chris Long	Staff Scientist Andrew Nelson	Engineer 1 Jaron Brown	Engineer 2 Victor Lam and/or Jessica Lemmers	Technician/GIS Analyst Justin Scollock or Madalyn Ohrt	Contract Admin Diane Numrich	Totals
1	Data Collection, Kick-off, Site Inspecton, Geomorphic Assessment and Subsurface Borings	8	20	40					$13,200
2	Field Survey and Development of DTM		6		16	64	80	1	$20,640
3	Hydraulic Modeling Plan and Model Development		24			88	8	1	$17,540
4a	Assessment of Erosion ... at Walnut Street	2	6	8		15			$5,075
4b	(Optional)Design of Erosion Mitigation at Walnut Street (30%)	10	6	8		50			$11,450
5	Refinement of Preferred Alternative, 60% Design Drawings, and Permitting Support	24	48	28		100	24	6	$37,640
6	Final Design and Embankment Design Documentation	24	21	12		60		6	$21,150
7	No-Rise Analysis and Certification		24			80			$15,520
8	Erosion Risk Assessment Mapping	4	16	40			12		$12,600
9	River Street Stormwater Outfall 30% and 90% Design		24			52	16		$13,780
10	King Street Stormwater Outfall 30% Design		16			32	16		$9,440
11a	Scour Assessment of Meadowbrook Bridge - Technical	24			4	36			$11,080
11b	(Optional) Scour Assessment of Meadowbrook Bridge - Reporting and POA	8				16	2	0.5	$4,290
12	Assessment of Potential Floodplain Restoration Opportunities		8	24		14	8		$8,430
13	Project Management/Administration and Quality Control	8	80			20		2	$23,180
14	Construction Support	10	40			30		2	$15,730
	Total Hours and Direct Labor Cost (DL)	122.0	339.0	160.0	20.0	657.0	166.0	18.5	
	Standard Rate	$250.00	$230.00	$165.00	$145.00	$125.00	$110.00	$140.00	$240,745
	TOTAL LABOR COST (BASE SCOPE OF WORK ONLY)								$225,005
	TOTAL LABOR COST (OPTIONAL TASK 12 ONLY)								$15,740

Direct Expense Detail

	Units	Rate	Cost
Mileage (estimated 30-40 round trips)	3,966	$0.580	$2,300
Reproduction & Communication			$200
Survey Equipment (Boat/RTK GPS/Eco Sounder)	(per field equipment sheet)		$3,800
			$6,300

Subconsultants

	Sub Fee	Markup	Cost
Base Scope of Work			
Drilling Rig ($1000 per boring x 2 boring + $500 mobilization)	$2,500	$250	$2,750
Stell for Cultural Resources Support (excludes cultural resources field survey)	$6,874	$687	$7,561
49 Degrees North for Permit Application Support	$63,500	$6,350	$69,850
		Base Scope of Work	$80,161
Optional Tasks			
Geotechnical support for Task 1 from Terracon Consultants	$10,000	$1,000	$11,000
KPFF bid package and Division 1 specification review	$8,400	$840	$9,240
48 Degrees North for Permit Application Support (Additional for Walnut Street site, Task 8; not included in Attachment A)	$25,000	$2,500	$27,500
48 Degrees North for Permit Application Support (ESA Consultation, Mitigation Plan)	$29,500	$2,950	$32,450
		Optional Tasks	$80,190
		Subconsultants Base Scope and Optional Tasks Combined	$160,351

Cost Summary

Total NHC Labor (Base Tasks + Optional Task)	$240,745
Total Direct Expenses	$6,300
Subconsultants	$160,351
TOTAL COST BASE SCOPE OF WORK	$311,486
TOTAL COST INCLUDING OPTIONAL TASKS	$407,396
TOTAL COST INCLUDING OPTIONAL TASKS AND 10% CONTINGENCY	**$448,136**
ESTIMATED MINIMUM COST (WITH PERMITTING/CULTURAL RESOURCES COST SHARE, NO OPTIONAL TASKS)	$277,843

REFERENCES

NHC 1993, Draft interim report, Snoqualmie River flood control project. Prepared for City of Snoqualmie, Snoqualmie, Washington.

NHC 2008, Technical Analysis for FEMA Letter of Map Revision for the Snoqualmie River near the City of Snoqualmie, Washington. May 23, 2008. LOMR became effective February 26, 2010. NHC Project Number 21478.

NHC 2014, Sandy Cove Bank Restoration Project, Final Report, Prepared by Northwest Hydraulic Consultants for the City of Snoqualmie in coordination with Perteet Inc. and Terracon Inc. Review Draft April 2013, Final Draft January 2014. NHC Project Number 200080.

NHC 2017, Infrastructure Improvement Program, Hydrologic and Hydraulic Analysis, Final Report, Prepared by Northwest Hydraulic Consultants for Perteet Inc. on behalf of the City of Snoqualmie. February 2017. NHC Project Number 2001642.

Attachment A

Sub-consultant 48 North Solutions Scope and Fee Estimate for both Sandy Cove Park and River Street Embankment projects

48 north solutions

909 NE Boat Street, Seattle, Washington, 98105

October 18, 2018

Mr. Derek Stuart, PE,
Northwest Hydraulics Consultants
12787 Gateway Drive S.
Seattle, WA 98168

submitted via email to: dstuart@nhcweb.com

Re: Version 2 - Environmental Permitting Support for the City of Snoqualmie's River Street Embankment Project (Phase 1) and Sandy Cove Bank Stabilization (Phase 2).

Dear Mr. Stuart:

48 North Solutions, Inc. (48 NORTH) is excited to submit this proposal to Northwest Hydraulic Consultants (NHC) to provide permit acquisition services for the proposed Snoqualmie Riverwalk embankment and bank stabilization project along the left bank of the Snoqualmie River, proposed by the City of Snoqualmie (the City). We have combined Phases 1 and 2 of the Snoqualmie Riverwalk Master Plan elements into one permitting effort to minimize costs and maximize effort for this project. This approach is the preferred strategy to follow since providing separate permitting documents for each phase would increase the cost of the project(s) significantly. If each Phase was permitted on its own, the cost would be significantly higher for each phase, than a combined permitting approach. Anticipated standalone permitting costs for Phase 2 are higher due to a more complex project involving stormwater, wetland, and other environmental impacts that are not anticipated in the Phase 1 standalone permitting costs. A 60/40 cost share split was derived based on the anticipated cost if each project was permitted on its own (see Part 2: Cost Estimate and Assumptions for more details).

While the City has recently stated that Phase 1 does not need to be expedited and can be constructed on the same timeline as Phase 2, the permit applications could to be split depending on the initial permitting strategy meetings with the U.S. Army Corps of Engineers (USACE) and on conditions and timeline with Phase 1 that needs to get done, but are not tied up with Phase 2. This proposal outlines 48 NORTH's effort to provide a combined cost-share environmental permit support for Phases 1 and 2 of this project.

PART 1: SCOPE OF WORK

The left bank of the Snoqualmie River, within the City limits, has experienced increased bank erosion that threatens Sandy Cove Park, River Street, local drainage infrastructure, and/or a planned Snoqualmie Riverwalk project. Sandy Cove Park and the riverbank adjacent to River Street are being eroded by the Snoqualmie River and require streambank protection. The City has asked NHC to design an embankment restoration at the River Street outfall, as well as incorporate new criteria into the Sandy Cove Park bank restoration design concepts that were identified by City staff in relation to the Riverwalk Master Plan and as outlined in the Berger Partnership Sandy Cove Phase 2 Schematic Plan.

The overall scope has grown in complexity since our initial consultation, but both projects are expected to have similar permitting requirements since bank protection along the river will be incorporated in both Phases. In-water work below the Ordinary High Water Mark (OHWM) is expected to trigger USACE, U.S. Fish and Wildlife Service (USFWS), Washington Departments of Fish and Wildlife (WDFW), and Ecology, and the City permits and reports. The City is also considering incorporating a replacement

outfall into the embankment repair project and conducting work in a wetland as part of the Sandy Cove stormwater effort. 48 NORTH has extensive experience permitting these types of projects and is currently in the process of completing the permitting of an outfall structure on the Nooksack River and is currently working closely with the USACE on a support system for an intake structure in Eastern Washington.

Formal and informal permitting agency consultation with federal, state and local agencies, and external stakeholders is a critical component of the permitting processes in Washington State. Consultation generally involves analysis of a proposed project to determine any potential environmental effects and to develop effective monitoring, mitigation, and adaptive management measures necessary to prevent, minimize and/or mitigate project effects on the environment. Consultation should start as early as possible to ensure that the correct environmental documentation and needs of both the project and agencies overseeing the permitting efforts are met. 48 NORTH will support NHC and the City with obtaining the environmental permits and the supporting consultations necessary to complete the bank stabilization and restoration with large woody debris, from Sandy Cove Park upstream to the City's outfall structure on River Street. We have broken these efforts into four tasks.

Task 1: Permitting

A) Local (City) Permits

48 NORTH will plan a kick off meeting with the City to engage in the local permitting strategy. As the City is leading this effort, we assume they will be the lead agency for the State Environmental Policy Act (SEPA) review. We anticipate that a standard SEPA Environmental Checklist will likely be required, as opposed to a SEPA Environmental Impact Statement (EIS). The checklist requires governmental agencies to consider the environmental impacts of a proposal before making decisions and helps agencies identify those impacts. The City (as the lead agency) will use this checklist to determine whether the environmental impacts of the proposal are significant. If impacts are not significant, the City will issue a Determination of Non-Significance for this project. 48 NORTH will work closely with the City's Planning team to develop the project's SEPA checklist for their review. In addition to developing the SEPA Checklist, 48 NORTH will prepare a Letter of Exemption for Shoreline Permit and a Flood Improvement Permit.

As part of the design, critical areas such as wetlands, should be avoided where practical. If they cannot be avoided, impacts should be minimized to the greatest extend practical. As part of the Critical Area Report (CAR), a wetland delineation and/or OHWM delineation would be necessary to avoid or minimize these impacts (see Task 2 for more detail). Wetlands are regulated by the City under the Sensitive Areas Ordinance, Chapter 19.12.180. The preparation of a special report (i.e., wetland delineation report, CAR, or Habitat Management Plan) will identify critical natural resources are within the proposed project. These assessments will identify if wetlands are present, and if so, where in relation to the project; if there are threatened and/or endangered species present; and surface waters are present, in addition to those identified as being present in the project area. These reports, or information contained within them, will support permit applications including the Conditional Use Permit and SEPA Checklist. Other City-related permits that maybe required include clearing and grading permits.

48 NORTH will prepare one (1) draft copy of the SEPA Checklist, CAR, and each City permit application, that includes both Phase 1 and 2, in MS Word format for internal review by NHC and/or the City. Upon receipt of one (1) consolidated set of comments, 48 NORTH will then prepare the final SEPA Checklist, CAR, and permit applications for submission to the City. Copies of all applications, as pdfs, will be submitted to NHC for their records.

B) State and Federal Permits

When it comes to permitting a project at a federal and State level, a Joint Aquatic Resource Permit Application (JARPA) is a key part of the permitting process. The JARPA serves as an application to the USACE, along with multiple state and local agencies. The JARPA is an efficient process because it initiates several related permitting processes through one application, including WDFW via its online APPS system, Ecology, and USACE. Each agency receives a separate copy of the same application.

To expedite the permitting process, 48 NORTH recommends conducting an on-site, pre-application meeting with the various federal and state permitting agencies, in particular, WDFW, Ecology and USACE. Upon receiving feedback during the pre-application meeting, 48 NORTH will develop the JARPA, that includes both Phase 1 and 2, for submission. 48 NORTH in collaboration with NHC will conduct a preliminary site visits with the USACE and other pertinent permitting agencies. 48 NORTH will then send the JARPA, that includes both Phase 1 and 2, application to the various permitting agencies including Ecology and USACE. The JARPA submission to USACE is to obtain either a Standard Permit (e.g., an Individual Permit) or a General Permit (e.g., a Nationwide Permit). The JARPA is submitted to Ecology for concurrence of Section 401 of the Clean Water Act (CWA). This concurrence can be in the form of either issuance of a Water Quality Certification or concurrence to the issuance of a nationwide permit by the USACE. Since this project is in King County and requires federal permitting, a Coastal Zone Management Certification may be required. The JARPA submission to WDFW, via its online APPS system, is to obtain a Hydraulic Project Approval (HPA) for the in-water work component of the project.

48 NORTH will develop the JARPA and the Determination of Consistency form for submission. We assume NHC will prepare all JARPA-formatted figures for this submission. 48 NORTH will send the application, that includes both Phase 1 and 2, to the various permitting agencies. 48 NORTH will use the information included in the JARPA and upload it onto the WDFW APPS online application system to obtain an HPA. A Determination of Consistency form will be submitted to the USACE and Ecology.

48 NORTH recognizes the regulatory agencies are involved with multiple projects at any one time. Therefore, once each application is submitted, 48 NORTH will work closely with the respective agencies to support the permitting review process so that it is completed as efficiently as possible. Our aim will be to minimize any lag time during the application review. Throughout the permit review process, 48 NORTH will monitor and engage these agencies via phone calls and/or electronic mail correspondence to receive updates from them and address any concerns that may arise. We will work closely with NHC to address agency comments received and provide any supplemental information to keep the project on schedule.

Task 2: Field Surveys, Critical Area Report, and Conceptual Mitigation Plan

The USACE, under Section 404 of the CWA, regulates the filling of "waters of the United States," including associated wetlands (Environmental Laboratory 1987). USACE defines wetlands as: *"Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, bogs, marshes, and similar areas" (U.S. Environmental Protection Agency, 40 Code of Federal Register [CFR] 230.3, 33 CFR 328.3, Federal Register 1982).*

Ecology also regulates wetlands under section 401, when applicable, of the CWA and under state regulations. According to Section 401 of the federal CWA, Ecology may require any permit issued by the

USACE to meet state water quality standards. Conditions placed on the issuance of a Section 401 certification by Ecology become part of the Section 404 permit issued by the USACE. Ecology has the regulatory authority to deny a Section 401 certification. A Section 404 permit cannot be issued by the USACE if there is a denial of the Section 401 certification by Ecology.

Two (2) 48 NORTH biologists will conduct a Critical Area review and wetland and waters determination for the proposed project area that includes both Phase 1 and 2 sites. The purpose of this study will be to verify the presence or absence of wetlands and important habitat areas in, and within approximately 200 feet of the project, where access is available. We will assess for the presence of wetlands on the site in accordance with the current methodology of the USACE (2010) *Western Mountains, Valleys, and Coast Regional Supplement (Version 2.0)* and the USACE (1987) *Wetlands Delineation Manual*. A global positioning system unit will used by the field team to assist in locating the project area and to record submeter-accurate site spatial data. Wetlands will be rated using Ecology's *Wetland Rating System for Western Washington* (2014 Update).

Ecology defines the OHWM as "*that mark that will be found by examining the bed and banks and ascertaining where the presence and action of waters are so common and usual, and so long continued in all ordinary years, as to mark upon the soil a character distinct from that of the abutting upland…*"

Following Ecology's 2016 guidance for OHWM determination, 48 NORTH will delineate the OHWM along the left bank of the Snoqualmie River, at the site of the proposed streambank stabilization and embankment project. Prior to the delineation, our biologist will complete a desktop assessment to identify water flow-related data for the determined river reach. If field indicators are not conclusive in determining the OHWM, hydrologic data will be used to develop an understanding of the timing and elevation of high water that creates marks on the soil with respect to vegetation. We have assumed that this delineation will be limited to the left bank of the river only. Principal elements of the field assessment will include general observations of the site conditions, as well as identifying the boundaries of the OHWM using field indicators.

Through our experience, we understand mitigation maybe required to offset a potential impact of the proposed project. Mitigation may include either restoring, and/or enhancing the riparian and aquatic habitat and invasive removal. If the presence of wetlands is determined, and more importantly, impacts to those identified wetlands and aquatic habitat cannot be avoided, 48 NORTH will prepare a conceptual wetland and aquatic resources mitigation plan. It is assumed that structures will be placed primarily for bank stabilization and river bank protection and these impacts need to be mitigated and depending on the size of the proposed impacts, we will assess the potential mitigation alternatives including enhancement and/or restoration of nearby wetland area, creation of wetlands, invasive plant removal, riverbank or side-channel restoration and/or the use of a wetland mitigation bank.

Upon completion of our delineations, 48 NORTH will prepare one CAR, inclusive of both Phase 1 and 2, including findings of our wetland/OWHM delineations and a Conceptual Mitigation Plan. The CAR will also include a description of the aquatic and terrestrial resources at the site, photographs, and vegetation and soil characteristics of the area, and a description of the mapped critical area boundaries. 48 NORTH's wetland staff will develop a conceptual mitigation plan for the City that will describe temporary and permanent wetland and aquatic impacts and present an overview of possible mitigation solutions to provide compensatory mitigation for wetland and aquatic impacts from the proposed project. The alternatives in this conceptual mitigation plan will be developed using *Wetland Mitigation in Washington State Part 2: Developing Mitigation Plans* (Ecology et al., 2006) and the *Wetland Rating System for Western Washington* (Ecology 2014 Update).

Prior to submittal, 48 NORTH will submit one (1) draft copy of the CAR and Conceptual Mitigation Plan in Word format to NHC for review, along with pdfs of the final report. A printed copy of this report will be included in the JARPA submittal(s) as an appendix.

Task 3: Endangered Species Act Consultation (Optional – Depending on USFWS requirements)

Section 7 of the Endangered Species Act (ESA) requires federal agencies to ensure actions it authorizes, or permits are not likely to jeopardize the continued existence of listed species or adversely modify designated critical habitats. To meet ESA requirements, agencies review the likely effects of their projects in consultation with the National Marine Fisheries Service (NMFS) and/or USFWS, commonly referred to as the "Services". The Services share responsibility for administering Section 7 of the ESA.

Consultation with the Services may be required if the project requires a federal permit from the USACE, which is considered a federal nexus. Projects that have a federal nexus (i.e., receive federal funds, occur on federal lands, or require federal permits or approval) trigger the completion of Section 7 consultation with the Services.

Consultation under the ESA would require the City to submit either a letter of "no effect" or request a Biological Assessment (BA) for informal (determination of "may effect, is not likely to adversely affect"), or formal consultation (determination of may affect, is likely to adversely affect") to the Services. The USACE is responsible for initiating and coordinating the consultation process and obtaining the Services concurrence. The City is responsible for preparing either a "letter of no effect" or a BA to address the potential impacts and possible mitigation measures to offset these impacts.

The project is located upstream of Snoqualmie Falls and does not contain any ESA-listed species and/or critical habitat overseen by NMFS but may contain ESA-listed species and/or critical habitat overseen by USFWS. As such, we assume there will be no consultation with NMFS. Consultation requirements with the USFWS may include 1) an assessment of the proposed construction of the streambank stabilization and culvert replacement to determine the level of effect on ESA-listed species such as the marbled murrelet (or their designated critical habitat, which is found just west of the City in the Middle Fork Snoqualmie River basin), protected by the respective agencies, and 2) preparation of a letter (or report, depending on the level of effect) addressed to the Services requesting concurrence with the effect determination. The USACE will issue a permit once they receive concurrence from USFWS (amongst other items).

Working through the USACE, we will meet in person or communicate over the phone with the USFWS to discuss the Proposed Action. Following this, 48 NORTH will prepare the requested documentation, (BA, Letter of No Effect, or abbreviated Biological Evaluation [BE]) summarizing the potential impacts of the Proposed Action on ESA-listed species that may occur within the Project Area.

48 NORTH will prepare one (1) draft copy of the BA, Letter of No Effect, or abbreviated BE, inclusive of Phase 1 and 2, for internal review. Upon receipt of one (1) consolidated set of comments, we will then prepare a final document for submission to the USACE.

Task 4: Mitigation Plan (Optional – Depending on Proposed Impacts)

Due to the uncertainty as to how much wetland and aquatic habitat could be impacted and the mitigation option(s) selected, we have costed the development of a Conceptual Mitigation Plan. Upon selecting a

mitigation alternative, 48 NORTH will develop a final Mitigation Plan that will outline how the City will compensate for the impacts of the identified wetlands and aquatic habitats and increase the net wetland and aquatic habitat functions and values at a landscape level.

PART 2: COST ESTIMATE AND ASSUMPTIONS

48 NORTH's Time & Materials estimate to complete the environmental permitting for the City's proposed combined embankment project (Phases 1 & 2) is $116,600 (Table 1). This cost estimate is net of any applicable Federal, state, and local sales taxes or fees. 48 NORTH's 2019 labor rates are presented in Table 2. These rates will be valid for the duration of the project. Our cost estimate does not include any payments for other federal, state, or local permitting costs, or other agreements.

A standalone permitting effort for Phase 1 is estimated to cost $72,000 ($42,500 for Tasks 1 & 2 and $29,500 for optional Tasks 3 & 4). A standalone permitting effort for Phase 2 is estimated to cost $114,000. Anticipated standalone permitting costs for Phase 2 would be larger due to a more complex project involving stormwater, wetland and other environmental impacts that would not be anticipated in the Phase 1 standalone permitting. A 60/40 cost share split was derived based on the anticipated cost if each project was permitted on its own.

Table 1: 48 NORTH's Time & Materials Cost Estimate Per Task for Combined Phase 1 and 2 Permitting Effort

Task	Cost
Task 1: Permitting	$35,500
Task 2: Field Surveys, CAR, Conceptual Mitigation Plan	$41,900
Task 3: ESA Consultation (Optional)	$14,500
Task 4: Mitigation Plan (Optional)	$25,000
TOTAL	$116,600

Table 2: 48 NORTH's 2019 Professional Rates

Labor Category	Rate/Hour
Principal Scientist	$156
Senior Scientist	$143
GIS Analyst	$126
Associate Scientist II	$126
Associate Scientist I	$111
Junior Scientist	$ 96
Field Technician II	$ 93
Field Technician I	$ 74
Accounts Specialist	$ 71

Other Direct Costs (out of pocket expenses), Travel, and Subcontractor costs are invoiced at actual plus 10%.

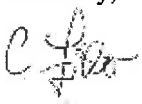
When costing this estimate, we made the following assumptions:

- Permitting effort and costs were estimated based on restoration design concepts identified by City staff in relation to the Riverwalk Master Plan and as outlined in the Berger Partnership Sandy Cove Phase 2 Schematic Plan.

- Permitting applications, reports, and other submittals (e.g., the JARPA and associated appendices, such as the delineation report) will combine Phases 1 and 2 of the Snoqualmie Riverwalk Master Plan elements into one submittal per agency to minimize costs and maximize effort for this project.
- Due to the project's location above the Snoqualmie Falls, we do not anticipate consultation with NMFS; however, USFWS may request consultation, or Best Management Practices, and a determination of impacts for Northern spotted owl and/or marbled murrelet. We have costed an abbreviated BE that can be later amended to a letter of No Effect upon consultation with USFWS. We have not costed the development of a fully expanded BA.
- The City will be the SEPA lead, not King County.
- A SEPA Checklist is sufficient and the project will not require a SEPA EIS.
- If required by the permitting agencies, a cultural resources report will be completed by a third party and will be provide to 48 NORTH for the permit application submittals.
- A Mitigation Plan for wetland, river and floodplain impacts may be required by the regulatory/local agencies. A Conceptual Mitigation Plan has been costed and a final Mitigation Plan has been costed as optional in Task 4. Mitigation Plan cost is only an estimate as impacts to critical areas have yet been determined.
- NHC will provide all JARPA-formatted figures to support permit applications.
- In an effort to minimize costs and maximize effort, permit tracking will be limited to teleconferences, phone calls, and electronic mail correspondence with regulatory agencies only.
- This cost estimate does not include additional agency/stakeholder meetings to address significant changes to the JARPA submittal and/or agency comments; or substantial project changes that may require modifying the JARPA.

We appreciate the opportunity to submit this proposal and look forward to continuing to support NHC and the City on this project. If you have any questions or would like to discuss this proposal further, please contact Bill Mavros at (206) 637-5442 or via e-mail at bmavros@48northsolutions.com.

Sincerely,



Cameron Fisher
Principal, Aquatic Lead
48 North Solutions, Inc.

Attachment B

Sub-consultant Stell's Scope and Fee Estimate

STELL

September 24, 2018

Northwest Hydraulic Consultants
12787 Gateway Drive South
Seattle, WA 98168
ATTN: Mr. Derek Stuart P.E., Principal
DStuart@nhcweb.com

RE: Request for Proposals (RFP)---Sandy Cove Phase 2 Bank Restoration in Snoqualmie - Cultural Resources Assessment

Dear Mr. Stuart:

Enclosed please find Stell's proposal in response to the request for additional information.

Stell is a woman-owned and veteran-owned small business specializing in environmental and planning consulting services. Established in 2004, our professional staff of more than 100 archeologists, scientists, engineers, planners, and geologists has extensive experience complying with federal and state environmental laws and regulations. Over the past 6 years, Stell has provided more than $13 million in cultural resources program support to municipal, state, commercial, and federal clients. A sampling of these projects includes the following:

- Lower Big Quilcene River Floodplain Cultural Resources Assessment, Quilcene, WA
- Archaeological Field Investigations on Identified Lands of the Quileute Tribe, La Push, WA
- Cultural Inventory and Evaluation at the Turn Point Lighthouse on Stuart Island, WA
- Archaeological Monitoring for the Elliott Bay Seawall Replacement Program, Seattle, WA
- Archaeological Data Recovery Excavation at 45WH265 and the Large Woody Debris Corral Survey, Ross Lake National Recreation Area, WA
- Cultural resources investigation activities supporting several Washington State Department of Transportation fish passage projects, WA

In support of the Sandy Cove Phase 2 Bank Restoration in Snoqualmie Cultural Resources Assessment, we offer Sarah Steinkraus, MSc, RPA as our project manager. Resumes for Ms. Steinkraus and Mr. Timothy Gerrish are provided as Attachment 1. This proposal offers two separate price estimates:

1) **Project Management, Background Research and Desktop Literature Review, and Technical Report**;

If it is determined that a cultural resources survey is required, the following tasks will be required:

2) **Project Management, Background Research and Desktop Literature Review, Cultural Resources Survey, and Technical Report.**

Stell archaeologists will perform the following tasks to satisfy requirements set forth in local King County ordinances and Washington's State Environmental Policy Act (SEPA):

Scope of Work

Task 1 – Project Management – Stell emphasizes the importance of strong and effective project management, as it provides the foundation for successful project execution. Furthermore, Stell recognizes that the Project pre-construction stage is a particularly dynamic phase, where clear communication, dissemination of information to

team members, and prompt implementation of appropriate compliance requirements are critical for the success of the Project. Stell project manager, Ms. Sarah Steinkraus, will serve as the single point of contact.

Task 2 - Background Research and Literature Review and Desktop Review and Report. Pertinent literature on the archaeology, ethnography, and history of any given project area will be reviewed to determine the probability for archaeological resources and traditional cultural properties in the project area. Previous cultural resources studies, historic building and structure inventories, ethnographies, local histories, historic maps, as well as records held by the Washington State Department of Archaeology and Historic Preservation (DAHP) will be consulted.

At this phase, the project area will need to be determined. An Area of Potential Effect (APE) letter will be written by Stell to provide a brief project description, level and amount of acreage proposed for ground-disturbing activities and a project vicinity map. A request will be made in the letter to the involved state agency and affected Native American tribes for concurrence on the proposed project area. For archaeological resources, the typical project area includes the vertical and horizontal extent of proposed construction excavation plus associated laydown and staging areas. Once concurrence on the APE is agreed upon by the reviewing authorities, a process that takes a maximum of 30 days, fieldwork for the project can commence.

Task 3 - Cultural Resources Survey (Price Estimate No. 2 only). Stell will conduct a systematic field survey to identify previously recorded and/or unrecorded archaeological resources where ground-disturbing activities are expected to take place. Field reconnaissance will include a series of pedestrian transects at varying intervals, depending on terrain and vegetation cover experienced across the project area. Shovel test probes will be excavated to a maximum depth of 100 centimeters across the entire project area approximately 20 meters (65 feet) apart. All sediment excavated from the shovel probes will be hand screened using ¼- inch hardwire mesh. A hand auger will be used to determine subsurface deposits deeper than 1 meter and will be used to a maximum depth of 3 meters. New archaeological sites will be mapped, photographed, and recorded on Washington State Archaeological Site Inventory forms. This assessment assumes that no more than one new archaeological site will be identified and recorded during the fieldwork. Previously documented sites within the project area will be relocated, revaluated for condition, and updated on a Washington State Archaeological Site Inventory Addendum Sheet. The Washington State Historic Inventory Database will be utilized to record the identified historic resources.

Task 4 - Technical Report. After the completion of the fieldwork, Stell will prepare a technical cultural resources report that meets state and federal standards for reporting as outlined in the guidelines provided by the DAHP. The technical report will describe the survey methods, summarize and interpret our findings, and provides management recommendations. The report will contain brief geological, prehistoric, and historical contexts for the area, as well as discussion of the fieldwork strategy employed, results, and field conditions. Stell will submit the report to Northwest Hydraulic Consultants and the DAHP.

The cost for Price Estimate No. 1 is **$6,873.71**. The cost for Price Estimate No. 2 will be **$9,051.98**.

Stell's proposed cost options for this project is provided as Attachment 2. The two pricings enclosed are based on the following assumptions:

- Northwest Hydraulic Consultants will provide all rights of entries.
- Weather conditions permitting, the cultural resources survey is scheduled to be completed in one (1) day and will commence within 30 days of notice to proceed (Price Estimate # 2).
- Not more than 35 shovel test probes will be excavated to a depth of no more than 100 centimeters (39 inches) below the ground surface (Price Estimate # 2).
- No historic buildings/structures over 50 years of age have been identified in the project area and therefore no buildings/structures will be inventoried as part of this assessment.
- Not more than one archaeological site will be recorded during fieldwork (Price Estimate # 2).

- Should archaeological testing for NRHP evaluation eligibility and/or data recovery efforts be determined necessary, a new scope and budget will need to be submitted.
- Human remains will not be encountered. If human remains are encountered, the King County Sheriff and Coroner will be immediately contacted. If the remains are determined to be not part of a criminal investigation and anthropological in nature, Washington Department of Archaeology and Historic Preservation forensic anthropologist Guy Tasa will be contacted immediately, as will be the affected Native American tribes.
- The draft technical report will be delivered for review to Northwest Hydraulic Consultants within 6 weeks of notice to proceed.
- The draft/final technical report will not exceed 30 pages of text (not including appendices) and five figures.
- The report will undergo one cycle of review and comment; Northwest Hydraulic Consultants will collate all comments into a single list for response by Stell.
- One hard copy of the final report will be delivered to Northwest Hydraulic Consultants within 1 week after receiving comments on the draft report.
- Stell staff will not require or need to provide project-specific training.
- Stell will provide cultural resources services under a firm-fixed price (or lump sum) contract.
- The scope and price quote are valid for 60 days from the date of this proposal letter.

Based on the above assumptions, this project is anticipated to take 35 days for pricing # 1, plus Northwest Hydraulic Consultants review time of the draft technical report. If a cultural resources survey is required, then this project is anticipated to take 60 days (pricing #2).

I look forward to the opportunity to support Northwest Hydraulic Consultants. Please contact me at (206) 351-7809 or tgerrish@stellee.com with any questions.

Best regards,

Tim Gerrish
Archaeologist

Attachments:

1.) Resumes of Key Personnel
2.) Price Estimate

STELL

Sarah M.H. Steinkraus

Archaeologist

EDUCATION

M.S. Forensic Anthropology, University of Central Lancashire, UK, 2008

B.S. Anthropology, Central Washington University, 2007

REGISTRATIONS/ CERTIFICATIONS

Register of Professional Archaeologists

National Parks Service Managing Archaeological Collections Certificate

PROFESSIONAL AFFILIATIONS

Association for Washington Archaeology

TRAINING

CPR / AED Certification

WISAARD and OARRA Access

INDUSTRY TENURE

10 years

AREAS OF EXPERTISE

Phase I, II, III archaeological surveys and investigations

National Environmental Policy Act (NEPA) / Washington State Environmental Policy Act (SEPA)

Osteology

Historic property inventories

Lithic Analysis

PROFESSIONAL EXPERIENCE

Ms. Steinkraus has 10 years of professional experience in cultural resource management including experience as a bioarchaeologist and technical writer and editor. She has conducted survey, testing, and excavation and assisted with osteological examinations of human remains for NAGPRA repatriation, mapping, and managing GIS data. Ms. Steinkraus has also been a Lecturer and Research Associate with the Anthropology Department at Central Washington University. Ms. Steinkraus has performed over 95 surveys and excavations in Washington, Oregon, Nevada, and Mexico. Her responsibilities include client coordination, project strategizing and planning, technical reporting and analysis, field data collection, supervising field personnel, osteological analysis, construction monitoring, precontact and historic-era artifact analysis, and artifact curation following federal guidelines.

PROJECT EXPERIENCE - WASHINGTON

Cultural Resources Assessment of the East Rutherford Street Project, Carnation, King County, Washington. 2016. Project Archaeologist. H.W. Lochner contracted Tierra Right of Way to conduct a review, pedestrian survey, and subsurface sampling of along East Rutherford Street in Carnation, Washington in preparation for street improvement projects. Ms. Steinkraus conducted the fieldwork and prepared the report for the project.

Lower Satsop Habitat Restoration Project, Grays Harbor County, WA. 2018. Project Archaeologist. Washington Department of Fish and Wildlife contracted Tierra Right of Way to conduct a review, pedestrian survey, and subsurface sampling of a portion of the Satsop Unit of the Chehalis Wildlife Area. This project proposed to remove four man-made dykes an approximately 6-acre spoil pile from the construction of the Satsop Reactor in order to regrade the area to provide off-stream habitat for various fish species. Ms. Steinkraus conducted the fieldwork and prepared the report for the project.

Lakewood Hatchery Electrical Improvements Project, Pierce County, WA. 2018. Project Archaeologist. Washington Department of Fish and Wildlife contracted Tierra Right of Way to monitoring of electrical improvements for its Lakewood Hatchery facility. Ms. Steinkraus monitored trenching by a small backhoe for placement of electrical conduit, documented one archaeological site on WISAARD, and prepared the report for the project.

STELL

Sarah M.H. Steinkraus
Archaeologist

WEYCO Fir Creek Fish Passage Project, Grays Harbor County, WA. 2018. Project Archaeologist. Weyerhaeuser NR Company contracted Tierra Right of Way to conduct pedestrian survey and subsurface sampling along Fir Creek in order to facilitate the replacement of three culverts which inhibited access upstream to anadromous fish and replace these with a precast concrete bridge. Ms. Steinkraus conducted the fieldwork and prepared the report for the project.

WEYCO Little North River Tributary Fish Passage Project, Grays Harbor County, WA. 2018. Project Archaeologist. Weyerhaeuser NR Company contracted Tierra Right of Way to conduct pedestrian survey and subsurface sampling along a tributary of the Little North River in order to facilitate the replacement of two culverts which inhibited access upstream to anadromous fish and replace these with a precast concrete bridge. The new bridge was to be placed above historic-era railroad bridge abutments. Ms. Steinkraus conducted the fieldwork and prepared an HPI form on WISAARD as well as the report for the project. Ms. Steinkraus provided communication and updates with the Washington State Recreation and Conservation Office (funding agency) and the Department of Archaeology and Historic Preservation to expedite the determination of eligibility process for the historic property onsite so that the project could continue in a timely manner.

Samish Fish Hatchery Intake Project, Skagit County, WA. 2017. Project Archaeologist. Washington Fish and Wildlife contracted Tierra Right of Way to conduct pedestrian survey, subsurface sampling, and historic properties documentation at the Samish Fish Hatchery release facility prior to improvements to the facility. Ms. Steinkraus conducted pedestrian survey, oversaw the subsurface sampling, documented all historic properties on HPI forms for WISAARD, and prepared the report for the project.

Mopang Creek Fish Barrier Correction Project, Grays Harbor County, WA. 2017. Project Archaeologist. Chehalis Basin Fisheries Task Force contracted Tierra Right of Way to conduct pedestrian survey and subsurface sampling for the replacement of a culvert along Mopang Creek that was inhibiting access upstream to multiple anadromous fish species. Ms. Steinkraus conducted pedestrian survey, subsurface sampling, and prepared the report for the project.

Lower Russell Road Levee Setback Project, King County, WA. 2018. Project Archaeologist. HDR, Inc. contracted Tierra Right of Way to conduct deep (three meters) subsurface sampling for a 75-acre project along the Green River along Russell Road in Kent. King County proposed to move the Russell Road Levee inland in order to create more wildlife areas in this location including fish habitat. Ms. Steinkraus conducted and oversaw fieldwork; documented multiple, large sites within the project area on archaeological site forms on WISAARD; analyzed historic artifacts including flaked glass tools; and prepared the report for the project.

Kalama Falls Fish Hatchery Phase 2 Project, Cowlitz County, WA. 2016. Project Archaeologist. Washington Department of Fish and Wildlife contracted Tierra Right of Way to conduct an 18.9-acre pedestrian survey, subsurface survey, documentation of built environment, and a final report for improvements planned to the Fish Hatchery facility. Ms. Steinkraus conducted the built environment documentation and prepared the report for the project.

Corson Wildlife Area Culvert Removal Project, Snohomish County, WA. 2016. Project Archaeologist. Washington Department of Fish and Wildlife contracted Tierra Right of Way to conduct pedestrian survey and subsurface sampling for the replacement of multiple culverts within the Corson Wildlife Area. Ms. Steinkraus conducted pedestrian survey, subsurface sampling, and prepared the report for the project.

Weyerhaeuser-Middle Fork Satsop Passage Project, Grays Harbor County, WA. 2016. Project Archaeologist. Weyerhaeuser NR Company contracted Tierra Right of Way to conduct pedestrian survey and subsurface sampling for the replacement of a large culvert along the Middle Fork Satsop River that was inhibiting the upstream access of multiple anadromous fish species. Ms. Steinkraus conducted pedestrian survey, subsurface sampling, and prepared the report for the project.

STELL

Timothy Gerrish

Archaeologist

EDUCATION

B.A. Anthropology, University of Washington, 2007

REGISTRATIONS/ CERTIFICATIONS

American Academy of Underwater Sciences Certified Scientific Diver

Rescue SCUBA Diver, Professional Association of Diving Instructors

Washington State Boater Education, U.S. Power Squadron

PROFESSIONAL AFFILIATIONS

American Academy of Underwater Sciences, Friday Harbor Laboratories, University of Washington

Underwater Archaeological Society of British Columbia

Association for Washington Archaeology

TRAINING

OSHA 40-Hour HAZWOPER

Nautical and Foreshore Archaeological Field Methods

First Aid / CPR / AED / Emergency Oxygen Administration / Neurological Assessment for divers

INDUSTRY TENURE

10 years

AREAS OF EXPERTISE

Phase I, II, III archaeological surveys and investigations

National Environmental Policy Act (NEPA) / Section 106 of the National Historic Preservation Act (NHPA)

Historic property inventories

Archaeological monitoring

Lithic Analysis

PROFESSIONAL EXPERIENCE

Mr. Gerrish has 10 years of professional experience in cultural resource management and serves as project manager. He has been coordinating with clients and developing strategies to assist in the successful completion of projects using his expertise in field survey methods, data recovery, and laboratory analytic techniques. He has conducted cultural resource inventories, including intensive and reconnaissance-level pedestrian surveys and data recoveries, throughout the Pacific Northwest. Mr. Gerrish has performed over 90 surveys and excavations in Washington, Oregon, Montana, California and Corsica, France. His responsibilities include client coordination, project strategizing and planning, technical reporting and analysis, field data collection, supervising field personnel, construction monitoring, lithic analysis, and artifact collection curation following federal guidelines.

PROJECT EXPERIENCE

Cultural Resources Assessment of the Hancock and Calligan Creek Hydroelectric Project, FERC Nos. P-13994 and P-13948, King County, WA. 2011. Mr. Gerrish was field director for the cultural resources survey of two 18-acre alignment parcels along Calligan and Hancock Creeks north of North Bend in King County, Washington. The assessment consisted of a pedestrian and subsurface survey within areas of remote and rugged geography. A total of 8 acres of proposed enhancements were surveyed and 111 STPs were excavated with no observed cultural materials. Key stakeholders included Snohomish County Public Utilities District, King County, and the Snoqualmie Indian Tribe.

Snoqualmie Transmission Line Survey, King County, WA 2008. Archaeologist. Performed a cultural resources assessment which included pedestrian and subsurface testing of a transmission line corridor near Carnation, Washington.

City of Redmond Driver's Club Project Cultural Resources Survey, King County, WA 2016-2017. Supervisory Archaeologist. Under contract with Shotgun Creek LLC, Mr. Gerrish was project manager and performed an updated cultural resources assessment of the Project parcel. Mr. Gerrish conducted the fieldwork for this effort and drafted the technical report which recommended that no historic properties were subject to effect.

STELL

Timothy Gerrish
Archaeologist

Jefferson County Public Health: Lower Big Quilcene River Floodplain Cultural Resources Assessment, Quilcene, WA. 2017-2018. Jefferson County Public Health (County) has contracted with Stell to conduct a cultural resources assessment for the Lower Big Quilcene Floodplain Project. This project is being funded by a Recreation and Conservation Office grant and falls under the auspices of the State Environmental Policy Act. The project includes seven parcels containing a variety of structures, trailers, solid waste, and containers which will be demolished and removed as part of the floodplain enhancement. This assessment includes pertinent background literature review, field survey, inventory of two historic properties, and a final technical report.

McSorley Creek Pocket Estuary Restoration Project at Saltwater State Park, King County, WA 2016-present. Supervisory Archaeologist. Washington State Parks and King County Department of Natural Resources and Parks (King County) are collaborating on a feasibility study to restore the estuary and lowermost reaches of McSorley Creek which flows through Saltwater State Park into Puget Sound. The Project involved an initial exploration which contributed to the feasibility study. Mr. Gerrish is consulting with Confluence Environmental Company in the delivery of Section 106 of the National Historic Preservation Act compliant documents which include an Archaeological Monitoring Plan and Inadvertent Discovery Plan.

U.S. Army Corps of Engineers (USACE) Seattle District: Howard Hanson Dam Archaeological District Data Recovery, Site Monitoring, and Cultural Resource Survey, King County, WA. 2010-2015. Archaeologist and assistant project manager. Participated in development a Plan of Action according to the USACE performance work statement detailing our approach to handling data recovery activities, site monitoring, and an archaeological pedestrian survey within and adjacent to the NRHP-eligible Howard Hanson Dam Archaeological District (DT 184).

During the reconnaissance survey, archaeologists documented a previously unrecorded archaeological site in peril from erosion of a cut bank overlooking the historic channel of the Green River. Emergency excavation on what would later be identified as 45KI1083 (the Eagle Gorge Terrace Site) recovered significant amount of precontact lithic material, burnt animal fauna, at least two fire modified rock hearths, and a radiocarbon date estimating the site's age at 800 to 1,000 years before present. Post-fieldwork analysis on the recovered archaeological material included an inventory and evaluation of both the stone tool and faunal assemblages, blood residue analysis on selected diagnostic stone tools, and obsidian hydration results from recovered obsidian. Other activities executed between 2011 and 2015 included archaeological testing at six pre-contact sites, site monitoring of 19 pre-contact, historic, and multicomponent sites; and archaeological survey of over 300 acres. During the survey, documented 18 new isolated finds and 13 newly discovered archaeological sites.

The final report also recorded the demonstrative effects of erosion on this site, revealing that between 2011 and 2014 one meter of terrace edge was been lost due to erosion, and highlighted the potential for site loss based on an analysis of historic trends in reservoir levels. Recommendations were made for excavations that would build on previous work and target areas most in danger.

Issaquah Creek Integrated Fish Passage Project, Issaquah, WA 2012. Supervisory Archaeologist. Conducted the field survey effort for mitigation of a fish passage project at the historic Issaquah Creek Diversion Dam. Additionally, a survey of the project area was conducted which included shovel testing areas of high probability. Work was performed under a Memorandum of Agreement between USACE, the Washington State Department of Archaeology and Historic Preservation, the City of Issaquah, the Washington Department of Fish and Wildlife, and the Muckleshoot Indian Tribe. The MOA was developed to mitigate construction of a fish passage at the dam, resulting in the dam's removal and reconstruction.

Site 45KI757 Archaeological Data Recovery, WSDOT, King County, WA. 2009. Archaeologist. Participated in the fieldwork for a small-scale archaeological data recovery along Interstate 405. The site contained only one artifact, an isolated Olcott projectile point, so the project was salvaged by conducting an analysis of all confirmed isolated Olcott points in the region, which produced a model of early/middle Holocene hunting practices. Work included interaction with the Snoqualmie tribe.

	Home or Client	BASE YEAR	Unit	Task 01: Project Management		Task 02: Background Research and Literature Review		Task 03: Site Visit		Task 04: Technical Report		Summary	
LABOR CATEGORIES / EMPLOYEE NAME				**Hrs**	**Cost**	**Hrs**	**Cost**	**Hrs**	**Cost**	**Hrs**	**Cost**	**Hrs**	**Cost**
Project Manager / Sarah Steinkraus	Home	$ 96.10	HR	4	$ 384.40	14	$ 1,345.40	6	$ 576.60	12	$ 1,153.20	36	$ 3,459.60
Archaeologist / Tim Gerrish	Home	$ 86.80	HR		$ -		$ -		$ -	4	$ 347.20	4	$ 347.20
Archaeologist / Mark Steinkraus	Home	$ 94.22	HR		$ -	8	$ 753.76		$ -	10	$ 942.20	18	$ 1,695.96
GIS Specialist / Andrew Tuleya	Home	$ 77.50	HR		$ -	2	$ 155.00		$ -	4	$ 310.00	6	$ 465.00
Editor / Lisa Oliver	Home	$ 59.12	HR		$ -		$ -		$ -	4	$ 236.48	4	$ 236.48
			HR		$ -		$ -		$ -		$ -	0	$ -
				4	**$ 384.40**	**24**	**$ 2,254.16**	**6**	**$ 576.60**	**34**	**$ 2,989.08**	**68**	**$ 6,204.24**
TRAVEL & ODC COSTS		**Rate**	**Unit**	**Qty**	**Cost**	**Qty**	**Cost**	**Qty**	**Cost**	**Qty**	**Cost**	**Qty**	**Cost**
ODC Subtotal					$ -		$ -		$ -		$ -		$ -
SUBS													
SUBS													
Sub Subtotal					$ -		$ -		$ -		$ -		$ -
Sub/ODC G&A		**8.78%**			$ -		$ -		$ -		$ -		$ -
Mileage		$ 0.545	mile		$ -		$ -	90	$ 49.05		$ -		$ 49.05
TRAVEL			Per		$ -		$ -		$ 49.05		$ -		$ 49.05
Sub/ODC/Travel Subtotal					$ -		$ -		$ 49.05		$ -		$ 49.05
Profit/Fee (on Labor)		**10.0%**			$ 38.44		$ 225.42		$ 57.66		$ 298.91		$ 620.42
Total Price					**$ 422.84**		**$ 2,479.58**		**$ 683.31**		**$ 3,287.99**		**$ 6,873.71**

	Home or Client	BASE YEAR	Unit	Task 01: Project Management		Task 02: Background Research and Literature Review		Task 03: Cultural Resources Survey		Task 04: Technical Report		Summary	
LABOR CATEGORIES / EMPLOYEE NAME				**Hrs**	**Cost**	**Hrs**	**Cost**	**Hrs**	**Cost**	**Hrs**	**Cost**	**Hrs**	**Cost**
Project Manager / Sarah Steinkraus	Home	$ 96.10	HR	4	$ 384.40	14	$ 1,345.40	10	$ 961.00	14	$ 1,345.40	42	$ 4,036.20
Archaeologist / Tim Gerrish	Home	$ 86.80	HR		$ -		$ -	10	$ 868.00	8	$ 694.40	18	$ 1,562.40
Archaeologist / Mark Steinkraus	Home	$ 94.22	HR		$ -	8	$ 753.76		$ -	12	$ 1,130.64	20	$ 1,884.40
GIS Specialist / Andrew Tuleya	Home	$ 77.50	HR		$ -	2	$ 155.00		$ -	4	$ 310.00	6	$ 465.00
Editor / Lisa Oliver	Home	$ 59.12	HR		$ -		$ -		$ -	4	$ 236.48	4	$ 236.48
			HR		$ -		$ -		$ -		$ -	0	$ -
				4	**$ 384.40**	**24**	**$ 2,254.16**	**20**	**$ 1,829.00**	**42**	**$ 3,716.92**	**90**	**$ 8,184.48**
TRAVEL & ODC COSTS		**Rate**	**Unit**	**Qty**	**Cost**	**Qty**	**Cost**	**Qty**	**Cost**	**Qty**	**Cost**	**Qty**	**Cost**
ODC Subtotal					$ -		$ -		$ -		$ -		$ -
SUBS													
SUBS													
Sub Subtotal					$ -		$ -		$ -		$ -		$ -
Sub/ODC G&A		**8.78%**			$ -		$ -		$ -		$ -		$ -
Mileage		**$ 0.545**	mile		$ -		$ -	90	$ 49.05		$ -		$ 49.05
TRAVEL			Per		$ -		$ -		$ 49.05		$ -		$ 49.05
Sub/ODC/Travel Subtotal					$ -		$ -		$ 49.05		$ -		$ 49.05
Profit/Fee (on Labor)		**10.0%**			$ 38.44		$ 225.42		$ 182.90		$ 371.69		$ 818.45
Total Price					**$ 422.84**		**$ 2,479.58**		**$ 2,060.95**		**$ 4,088.61**		**$ 9,051.98**

Attachment C

Sub-consultant KPFF's Scope and Fee Estimate (example from similar task on River Street Embankment Project)

1601 Fifth Avenue, Suite 1600 Seattle, WA 98101 206.622.5822 kpff.com

January 14, 2019

Mr. Derek Stuart, PE, Principal
Northwest Hydraulic Consultants
12787 Gateway Drive South
Seattle, WA 98168

Subject: River Street Bank Protection
Specification Review and Assembly Fee Proposal

Dear Mr. Stuart:

We appreciate the opportunity to provide consulting services for the project referenced above. The project intends to provide the survey and design documents for stream bank stabilization along a portion of the Snoqualmie River near River Street, as generally shown in the NHC proposal sketch.

The City of Snoqualmie (City) will then provide the design documents to potential bidders for pricing, permitting and construction.

This proposal is provided for general review and consultation services as it relates to the Division 01 Specifications required for the work. We also understand that NHC would like KPFF to compile the specifications and format the specification documents into one complete specification for the City's use in bidding the work.

SCOPE OF WORK

Our scope of work as we understand it is as follows:

MEETINGS AND COORDINATION

- Attend one Kick-Off Meeting.
- Call into team coordination calls on an as-needed basis (six calls).
- Attend two City comment review meetings (90% and Final).

BID SUPPORT

- Coordinate specification questions developed by contractors during the bid process for the Division 01 Specifications.
- Revise the design specifications as needed to reflect clarifications during contractor bidding.

DIVISION 01 SPEC AND SPEC DELIVERABLES ASSEMBLY

- The project specifications will be compiled for 90% and Final design submittals as listed in the NHC proposal in PDF format.
- KPFF will review and provide a comment matrix with proposed corrections for the Division 01 Specifications.
- Recommendations for specification editing, including draft language will be provided based on comments for the City's use.

ASSUMPTIONS

- We understand that specification sections outside of Division 01 will be provided by NHC to KPFF and that those sections will not require review.
- The necessary Division 01 specifications will be provided from the City for our use in word format.
- Specification Sections provided by others will be in CSI format and will not require formatting over and above compiling the sections into different document types (ie: ready for transition from word to pdf file types).
- Project design, design drawings and design review will be by others.
- Permit documentation, execution and review will be by others.
- Design scheduling and management will be by others.
- Construction cost estimates will be prepared by others
- Input regarding permitting and administrative requirements needed in the Division 01 Specifications will be provided by others for our use.
- All deliverables will be in digital formats. Printing will not be required.

FEE

We propose to accomplish the above scope of services on a lump-sum basis for the following total estimated fee, in accordance with the enclosed Terms and Conditions, which are made part of this proposal:

Meetings	$ 2,400
Bid Support	2,500
Division 01 Spec Review	3,500
Civil Fee Total	***$ 8,400***

Expenses, such as mileage, are included in this fee. We will not exceed the total estimated fee without prior approval.

We look forward to working with you on this project. If this letter of agreement meets with your approval, please sign below and return one copy for our files. If you have any questions, please contact me at (206) 622-5822.

Sincerely,

David E. Schwartz, PE, LEED AP
Principal

ERL:des:heh

Enclosure

65400

Approved by: _____ Date: _____
Northwest Hydraulic Consultants

STORMWATER CAPITAL PROJECT OR PROGRAM

SANDY COVE PARK RIVERBANK RESTORE. AND OUTFALL PROJECT

CIP Project ID:	STM19003CIP	**Total Project Budget:**	$5,758,269
Department:	Stormwater	**Estimated Expenditures:**	$394,059
Project Status:	Design	**Remaining Project Budget:**	$5,364,210
Project Location:	Sandy Cove Park	**Percent Complete:**	9%
Project Contact:	Jeff Hamlin	**Email:**	jhamlin@snoqualmiewa.gov

Project Description:

This project will stabilize the Snoqualmie River bank and prevent further erosion at Sandy Cove Park. Furthermore, this project will reconstruct the outfall at King Street and Falls Avenue which is undersized.

Project Status:

Photo or Map:

Project Budget:

Pre-2021 Project Budget (A):	$	258,269
2021-2022 Project Budget (B):	$	-
2023-2028 Project Budget (C):	$	5,500,000
Pre-2021 Expenditures (D):	$	258,269
2021-2022 Expenditures (E):	$	135,790
2023-2028 Expenditures (F):	$	-
Outstanding Contract Value (G)[1]:	$	-
Other Projections (if necessary) (H):	$	-
Estimated Expenditures (I = D:H):	$	394,059
Remaining Project Budget (J = A + B + C - I):	$	5,364,210

Project Schedule:

Stage:	Pre-Design	Design	Construction	Close Out

% of Stage Completed:	50%
% of Project Completed:	9%

Contracts[1]:

Description	*Type*	*Contractor*	*Contract Value*	*Project-to-Date Expenditures*	*Outstanding Contract Value*
Design	**Task Ord. 38**	**NHC**	$ 388,741	$ 388,741	$ -
		TOTAL =	$ 388,741	$ 388,741	$ -

Other Expenditures:

Description	*Project-to-Date Expenditures*
Staff Labor	$ 5,318
Other	$ -
TOTAL =	$ 5,318

[1] All numbers include sales tax.

BUSINESS OF THE CITY COUNCIL
CITY OF SNOQUALMIE

AB22-126
September 12, 2022
Committee Report

AGENDA BILL INFORMATION

TITLE:	AB22-126: Amendment #4 with Aspect Consulting for Water Rights Permitting Support and Geotechnical Monitoring	☐ Discussion Only ☒ Action Needed:
PROPOSED ACTION:	Approve Amendment #4 with Aspect Consultants (Aspect) for Water Rights Support and Geotechnical Monitoring	☒ Motion ☐ Ordinance ☐ Resolution

REVIEW:	Department Director/Peer	Mike Chambless	8/26/2022
	Finance	Drew Bouta	8/26/2022
	Legal	Bob Sterbank	8/25/2022
	City Administrator	Mike Sauerwein	8/31/2022

DEPARTMENT:	Parks & Public Works	
STAFF:	Jeff Hamlin, PE – City Engineer	
COMMITTEE:	Parks & Public Works	**COMMITTEE DATE:** September 7, 2022
MEMBERS:	Ethan Benson Bryan Holloway Jo Johnson	
EXHIBITS:	• Amendment No. 4 Aspect Consulting for Water Rights Assistance • Amendment No. 4 Aspect Scope of Work and Fee Estimate • Original Contract with Aspect for Water Rights Assistance • CIP Project Status Page	

AMOUNT OF EXPENDITURE	$ 674,400
AMOUNT BUDGETED	$ 2,622,644
APPROPRIATION REQUESTED	$ 674,400

SUMMARY

INTRODUCTION

The City has received a grant of $477,400 from Washington Department of Ecology (Ecology) to explore the potential for Aquifer Storage and Recovery (ASR) as a means to obtain increased water rights for drought tolerance, resiliency, and consumption. ASR may also help to improve summer flows in the Snoqualmie River and offset increasing pressure on the aquifer supply from downstream users. This amendment provides for a feasibility study to evaluate the potential use of ASR as a water management strategy for the City.

LEGISLATIVE HISTORY

April 1, 2015; PSA for Consulting Services with Aspect Consulting (original contract) for $59,167
April 1, 2016; Amendment #1; for $29,917 for additional support services
April 25, 2016; Amendment #2; for $93,560 for additional assistance with water supply concerns
February 8, 2022; Amendment #3; for $35,000 for a Regulatory Assessment and Conceptual Mitigation Plan for Surface Water Preliminary Permits

BACKGROUND

The City entered into a Professional Services Agreement with Aspect Consulting, LLC (Aspect) in April 2015 to obtain assistance with water rights and Source of Supply needs. Part of the services provided under this contract included an exploration of new water rights and water sources to serve a growing community and to address drought tolerance issues. As part of the evaluation process, the City began to explore the potential for implementing ASR to support the City's application to the State for increased water rights. The City, with the help of Aspect submitted an application to Ecology for a Streamflow Restoration Grant to fund a feasibility study that will explore the potential for implementing ASR. The City was awarded a grant for $477,400 and a scope agreement was worked out with Ecology. The City, along with Aspect and Ecology are ready to move forward with the analyses.

ANALYSIS

Aspect has prepared a Scope of Work (Exhibit A) and Cost Estimate to continue supporting the City with advancing several elements of its water supply and water rights planning efforts. The overall project elements addressed in this SOW include the following:

- Preparing Required Submittals and Supporting Processing of the City's pending groundwater and surface water right applications (Application Nos. G1-27589 and S1-28833 filed in 1995 and 2016, respectively).
- Completing a Feasibility and Pilot Study of an Aquifer Storage and Recovery (ASR) Program being Considered by the City.
- On-Call Water Rights Support. Technical and regulatory permitting support is anticipated to advance the ASR program being considered by the City and support the City's broader water rights portfolio.
- Providing ongoing geotechnical evaluation of the Canyon Springs Pipeline.

BUDGET IMPACTS

Administration recommends approving Amendment #4 with Aspect Consulting, LLC in the amount of $674,400 to advance several elements of the Source of Supply Improvement Project. Council approved the project as part of the amended CIP (April 12, 2021) for $1,266,900 during the 2021-2022 biennium. In addition, Council approved the project as part of the 2023-2028 CIP (August 8, 2022) for $2,234,000 over the six-year period. $43,536 has been incurred against the project budget during the 2021-2022 biennium with $40,594 in outstanding contractual value. When subtracting the reappropriation of some budget from the Source of Supply Improvement Project to the Williams Addition Water Main Replacement Project (AB22-049), the project has a remaining budget of $627,944 for the 2021-2022 biennium. Given that Aspect will not complete such work within the next four months, sufficient appropriation exists within the 2021-2022 Biennial Budget (Utilities Capital Fund #417) to fund the amendment. With the adoption of the 2023-2028 CIP, the City expects to budget $815,000 for the project during the 2023-2024 biennium. The $477,400 Streamflow Restoration Grant provided by the Department of Ecology was not anticipated as part of the 2023-2028 CIP and therefore will help to offset the City's contribution towards the project.

NEXT STEPS

Move forward with the ASR Feasibility and Pilot Study, water rights applications and geotechnical evaluations as provided in the attached scope proposal.

PROPOSED ACTION

Move to approve Amendment #4 with Aspect Consultants, LLC for Water Rights Support and Geotechnical Monitoring services.

AGREMEENT FOR CONSULTANT SERVICES
WATER RIGHTS ASSISTANCE
Amendment No. 4

WHEREAS, on April 1, 2015, the City of Snoqualmie (City) entered into an agreement with Aspect Consulting LLC (Consultant) for Water Rights Assistance ("Primary Agreement"); and

WHEREAS, the Primary Agreement has been amended on April 1, 2016 (First Amendment), April 25, 2016 (Second Amendment), and February 8, 2022 (Third Amendment); and

WHEREAS, the City has requested Consultant to provide additional assistance with water supply concerns, including preparation of required submittals and support of the City's pending groundwater and surface water right applications, completing a feasibility and pilot study of an Aquifer Storage and Recovery (ASR) program, geotechnical monitoring and reporting at Canyon Springs water source, and on-call support for water rights, stakeholder/agency engagement and related work; and

WHEREAS, Consultant has the necessary skills and capability to complete the work;

NOW, THEREFORE, the parties herein do mutually agree as follows:

Section 1. Scope of Work Amended. Section 1(A) of the Primary Agreement is hereby amended to add the additional tasks set forth in the Scope of Work attached as Exhibit A to this Amendment No. 4.

Section 2. Period of Service Amended. Section 1(C) of the Primary Agreement is hereby amended to extend the completion date to December 31, 2025.

Section 3. Compensated Amended. Section 2(A) of the Primary Agreement is hereby amended to increase the total compensation to be paid to Consultant for the work to $857,044. This includes the compensation under the Primary Agreement ($59,167), First Amendment ($29,917), Second Amendment ($93,560), Third Amendment ($35,000), and the present Fourth Amendment ($674,400).

CITY OF SNOQUALMIE, WASHINGTON	CONSULTANT – Aspect Consulting LLC
By:_____ Its: Mayor Date:_____	By:_____ Typed/Printed Name:_____ Its:_____ Date:_____
ATTEST: Deborah Estrada, City Clerk Date:	
APPROVED AS TO FORM:	

Bob C. Sterbank, City Attorney
Date:_____

August 24, 2022

Jeff Hamlin – Public Works Department
City of Snoqualmie
P.O. Box 987
Snoqualmie, Washington 98065

Re: Amendment No. 4 to Consultant Services Contract for Water Rights Permitting Services
Proposed Scope of Work and Cost Estimate
City of Snoqualmie Water Right Permitting Support and Geotechnical Monitoring
Contract Exhibit A
Project No. 150386

Dear Jeff-

Aspect Consulting LLC (Aspect) has prepared this Scope of Work (SOW) and Cost Estimate to continue supporting the City of Snoqualmie (City) with advancing several elements of its water supply and water rights planning efforts. The overall project elements addressed in this SOW include the following:

- ***Preparing Required Submittals and Supporting Processing of the City's pending groundwater and surface water right applications.*** (Application Nos. G1-27589 and S1-28833 filed in 1995 and 2016, respectively). In response to these applications, the Department of Ecology (Ecology) issued Preliminary Water Right Permits to the City, which include prescribed reports to be submitted by certain due dates. The reports are intended to inform Ecology's opinion as to whether or not the water right applications can be approved and must be submitted as described or the permit applications will be cancelled.
- ***Completing a Feasibility and Pilot Study of an Aquifer Storage and Recovery (ASR) Program being Considered by the City.*** With past support from Aspect, the City recently secured a Streamflow Restoration Grant from Ecology to evaluate the feasibility of an ASR Program. The ASR program involves diverting excess Canyon Springs water during high flows, conveying it within the distribution system, then recharging the aquifer through the existing South Wellfield; a portion of this stored water would later be recovered by the City through normal wellfield operation. The goal of the ASR program is to improve the legal and physical availability of water supply to both the City and the Snoqualmie River. The Grant Agreement with Ecology provides $477,400 in funding to cover portions of this work and includes detailed scope of work and submittal requirements.
- ***On-Call Water Rights Support.*** Technical and regulatory permitting support is anticipated to advance the ASR program being considered by the City (described below), and support the City's broader water rights portfolio. This includes a Reservoir Permit application for ASR testing and implementation, regulatory processing support for source water rights for ASR (e.g., drafting a Report of Examination for the pending surface water right application S1-28833 for Canyon Springs), and addressing other near-term water rights requirements as they arise.

- ***Providing ongoing geotechnical evaluation of the Canyon Springs Pipeline.*** Aspect has previously assisted the City with monitoring and stabilization of the embankments supporting the water supply line from Canyon Springs. Ongoing monitoring indicates some continued movement of natural embankment areas, prompting the need for continued monitoring and reporting of embankment conditions to support this critical City infrastructure.

Aspect will provide hydrogeologic, geotechnical and water rights consulting services to the City, including agency and stakeholder coordination as directed. Our proposed Scope of Work under this contract is organized as follows (note that the order of tasks has been set to align with the task numbers in the City's Streamflow Restoration Grant Agreement):

Task 1 – On-call Water Rights Support
Task 2 through 8 – Complete ASR Feasibility Study and Pilot Testing Scope of Work as detailed in the Grant Agreement with Ecology
Task 9 – Prepare and Support Processing of a Preliminary Reservoir Permit for ASR
Task 10 – Preliminary Permit Submittal for Surface Water Application No. S1-28833
Task 11 – Preliminary Permit Submittals for Groundwater Application No. G1-27589
Task 12– AKART Analysis
Task 13 – On-call Agency, Stakeholder, and City Presentations/Coordination
Task 14 – Canyon Springs Pipeline Monitoring
Task 15 – Project Management and Communication

Task 1: On-call Water Rights Support

Under Task 1, Aspect will provide on-call water rights support to the City. Work will be completed at the City's direction and within the constraints of the approved budget and may include:

- Evaluating the City's water rights portfolio in relation to City projects and/or future planning efforts.
- Preparing water rights applications and/or coordinating with Ecology on existing pending applications (e.g., amending the existing application to related to Canyon Springs to address seasonal use for ASR).
- Supporting the City in addressing water rights compliance issues.
- Other data synthesis and/or analysis needed to support water supply planning, as directed by the City.

Deliverables and Schedule: As requested by the City.

Tasks 2 through 8: Execute ASR Streamflow Restoration Grant Scope of Work

Under Tasks 2 through 8, Aspect would complete the scope of work for the City's ASR Feasibility Study and Pilot Testing, as detailed in the Grant Agreement with Ecology. The detailed scope of work for Tasks 2 through 8 is provided as Attachment A. A summary of each of the tasks is provided below, followed by a summary of all required deliverables and current due dates required under the Grant Agreement. Note that given the delay in Ecology's issuance of the Grant Agreement with the City, we assume that the deliverable schedule will be delayed by approximately 2 months, and that due dates will be extended by Ecology.

Task 2: Characterization of the Hydrogeologic System. Includes review and analysis of existing data and reports to develop a hydrogeologic conceptual model.
Task 3: Water Quality Assessment. Includes preparation of a Quality Assurance Project Plan (required by Ecology), analysis of water quality data, and completion of a geochemical model to assess water quality implications.

Task 4: Regulatory Assessment. Includes an evaluation of compliance with Groundwater Quality Standards, anticipated provisions of an ASR reservoir permit, compliance with Chapter 173-157 WAC, and water right impairment considerations.

Task 5: Streamflow Benefit Quantification & Program Design. Includes developing and running a numerical groundwater model to evaluate ASR's effect on streamflow and water rights considerations.

Task 6: Capital and O&M Cost Assessment. Includes an assessment of planning level costs for implementation and maintenance of the ASR program.

Task 7: *Feasibility Study Report.* Includes cumulative analysis of preceding tasks and developing a report presenting the results and findings of the ASR feasibility study.

Task 8: ASR Pilot Testing. Includes completing an ASR pilot test with a focus on evaluating the ASR performance metrics identified in the final Feasibility Study Report. Groundwater recharge is expected to occur over a 6-week period during the wet season.

Deliverables and Schedule:

Task	Required Deliverable	Deliverable Due Date[1]
2	2.1 - Summary Materials (cross-sections, etc.)	1/15/2023
	2.2 - Permission Forms (if needed)	--
3	3.1 - QAPP	1/15/2023
	3.2 - Emails confirming data upload	12/31/2024
	3.3 - Final QAPP	12/31/2023
4	4.1 - Regulatory Framework Memo	7/15/2023
5	5.1 - Presentation Materials	7/15/2023
6	6.1 - O&M Summary Tables	7/15/2023
7	7.1 - Draft FS Report	11/1/2023
	7.2 - Final FS Report	12/31/2023
	7.3 - Presentation Materials	--
	7.4 - Tribal Comment Upload	12/31/2024

1, Based on Ecology's final draft of the Grant Agreement, dated June 28, 2022.

Assumptions: (1) Response to tribal and/or stakeholder coordination beyond what is described in Attachment A will be addressed under a separate task. (2) Ecology review times for draft deliverables will be approximately 30 days, unless otherwise indicated in the Grant Agreement

language provided as Attachment A. (3) Due date extensions will be coordinated by the City and Aspect with Ecology to align with the actual effective date of the signed Grant Agreement.

Task 9: Prepare and Support a Reservoir Permit Application

A reservoir permit is required to authorize the recharge, storage and recovery of water in a groundwater reservoir through ASR. A Preliminary Permit will need to be issued to the City prior to conducting the Task 7 Pilot Test, but reservoir permitting support is excluded in the Streamflow Restoration Grant Agreement.

Under Task 9, Aspect would hold a pre-application meeting with Ecology, prepare a reservoir permit application package and cover letter requesting a Preliminary Permit, and coordinate with Ecology on considerations for permit processing. Aspect will also coordinate with the Ecology's Water Quality Program to discuss compliance provisions regarding Groundwater Quality Standards (Chapter 173-200 WAC)

Deliverables: Draft and Final Preliminary Reservoir Permit Application package for ASR.

Schedule: The draft application will be provided to the City for review and comment by October 1, 2023, followed by submittal to Ecology to authorize recharge activities by the 1st quarter of 2024.

Assumptions: Substantive stakeholder and/or tribal coordination will not be completed under this task (such support would be provided under Task 13 at the City's request).

Task 10: Preliminary Permit Submittal for Surface Water Application No. S1-28833

Under Task 10, Aspect will revise the Phase 1 Regulatory Assessment based on Ecology's March 31, 2022 email, and prepare the "Phase 2 Compliance Plan" required for submittal to Ecology under the Amended Preliminary Permit No. S1-28833 issued to the City. Aspect has already completed the majority of work to edit the Phase 1 Regulatory Assessment. The Phase 2 Compliance Plan will address the following information requirements:

- The point(s) of compliance where the instream flow measurement will be evaluated.
- Description of how/when flows at the compliance point(s) will be checked to ensure compliance at the diversion is maintained.
- Descriptions of measurement methodology, threshold values, and evaluation techniques.
- Explanation of how interruptions will be managed.
- Where meters or other measurement devices will be installed, where required by Chapter 173-173 WAC.
- Ecology and DOH concerns as described in Appendix H of our Joint Review Procedures for Planning and Engineering Documents by describing how the City plans to exercise a portfolio of interruptible and non-interruptible rights.

Note that Ecology has not yet completed final approval of the "Phase 1 Regulatory Assessment", previously submitted in compliance with the subject Preliminary Permit. That document suggests that coordination with Puget Sound Energy (PSE) will be completed, as necessary, under one of the on-call tasks in this SOW, to address potential impairment concerns regarding PSE's water right

claim at Snoqualmie Falls. The report prepared under this task will document that coordination effort by the City.

Deliverables: Draft and Final Phase 2 Compliance Plan.

Schedule: The completed draft of the Phase 2 Compliance Plan is currently due to Ecology by October 31, 2022. At least 30 days ahead of the due date, Aspect will provide a draft report for City review, then incorporate comments ahead of the due date.

Assumptions: (1) Draft report will incorporate one round of City comments, and the final report will address one round of Ecology comments. (2) The City will initiate and facilitate any coordination with water right holders, including PSE. (3) Substantive stakeholder and/or tribal coordination will not be completed under this task, but could be provided under Task 13 at the City's request.

Task 11: Preliminary Permit Submittals for Groundwater Application No. G1-27589

Under Task 11, Aspect will prepare the "Phase 2 Testing and Analysis Plan" and the "Phase 3 Final Mitigation and Compliance Plan" required for submittal to Ecology under Preliminary Permit No. G1-27589 issued to the City. The "Phase 2 Testing and Analysis Plan" will address the following information requirements:

- A description of the measures and analysis planned to address the data gaps for the application previously identified by Ecology.
- General details of a quantitative groundwater model proposed to analyze the timing and distribution of impacts to the Snoqualmie River.

Typically, the details of the analysis proposed in the Testing and Analysis Plan would be developed in close coordination with Ecology. However, because the City has already established that a numerical groundwater model will be developed to evaluate the ASR program (funded by Ecology under Task 5), the general approach to modeling to be discussed in the Testing and Analysis Plan is considered already established.

The "Phase 3 Final Mitigation and Compliance Plan" will address the following information requirements:

- A summary of all work performed under previous tasks of the Preliminary Permit.
- A detailed description of how the proposed mitigation would offset the impacts of the proposed withdrawal or diversion and use of water.
- A description of the changes in environmental conditions from the proposed mitigation, specifically if impoundment/storage is a component of the mitigation plan.
- A calculation of anticipated consumptive use.
- A description of how and when non-consumptive water will return to groundwater or surface water and a description of how this volume was estimated.
- A description of the actions that will be taken to ensure mitigation will be maintained for the duration of the water right authorization (often in perpetuity).
- Descriptions of measurement methodology, threshold values, and evaluation techniques.

- Where meters or other measurement devices will be installed, where required by Chapter 173-173 WAC.

Deliverables: Draft and Final Phase 2 Testing and Analysis Plan and Draft and Final Phase 3 Mitigation and Compliance Plan.

Schedule: The completed draft of the Phase 2 Testing and Analysis Plan is currently due to Ecology by July 31, 2022, and the Phase 3 Final Mitigation and Compliance Plan is due on July 31, 2023. At least 30 days ahead of that due date, Aspect will provide a draft report for City review, then incorporate comments ahead of the October 31 deadline.

Assumptions: (1) Draft report will incorporate one round of City comments, final report will address one round of Ecology comments. (2) The City will initiate and facilitate any coordination with water right holders, including PSE. (3) Substantive stakeholder and/or tribal coordination will not be completed under this task (such support would be provided under Task 13 at the City's request).

Task 12: AKART Analysis

Under Task 12, Aspect will provide an analysis of all known, available and reasonable methods of prevention, control and treatment (AKART). This analysis is required under Chapter 173-200 WAC for Ecology to substantiate a regulatory decision authorizing the recharge of Canyon Springs source water, which contains disinfectant residuals and disinfection byproducts that are not naturally present in groundwater. In some instances, Ecology has authorized ASR testing as proposed in Tasks 2 through 8 without first requiring an AKART analysis, but Aspect's recent coordination with Ecology indicated that an AKART analysis would be required prior to issuance of the temporary permit for testing. The AKART analysis would consist of the following elements:

- Describe the water quality characteristics for background and source water.
- Evaluate water quality compatibility (based on the analysis completed under Task 3) and compliance with drinking water and groundwater standards (Chapters 246-290 and 173-300 WAC, respectively).
- Identify and evaluate treatment methods/technologies to remove constituents that exceed background groundwater quality prior to recharge; viability and effectiveness will be considered, among other aspects of the technology and operational alternatives.
- Prepare Planning Level cost estimates included capital, operations, and maintenance costs.
- Identify potential receptors to recharged water.
- Identify and evaluate alternative strategies to treatment methods/technologies (e.g., enhancements and operational improvements to the existing system and public interest).
- Develop a compliance recommendation that identifies the preferred alternative.

Schedule: The final AKART analysis report will be required by Ecology prior to issuing a Preliminary Reservoir Permit to authorize the ASR pilot test described under Task 8, with recharge tentatively planned to begin on February 1, 2024. A draft AKART analysis will be provided to the City for review and comment by November 1, 2023 or at an earlier mutually agreed date as necessary.

Assumptions: (1) Draft report will incorporate one round of City comments, final report will address one round of Ecology comments. (2) The City will initiate and facilitate any coordination with water right holders, including PSE. (3) Substantive stakeholder and/or tribal coordination will not be completed under this task (such support would be provided under Task 13 at the City's request).

Task 13: On-call Agency, Stakeholder, and City Presentations/Coordination

Under Task 12, Aspect will provide on-call agency and stakeholder coordination support to the City. Work will be completed at the City's direction and within the constraints of the approved budget and may include:

- Preparing for, facilitating, and/or participating in meetings with interested tribes regarding water rights considerations and/or the ASR program being considered.
- Preparing presentation materials (e.g., slide deck, white paper, etc.).
- Addressing substantive stakeholder comments on City water rights applications (e.g., the reservoir permit application for ASR prepared under Task 9 or other pending applications).
- Providing presentations to City Council and/or City staff.

Deliverables and Schedule: As requested by the City.

Assumptions: Work completed under this task is outside the scope of work established in the Grant Agreement (Attachment A).

Task 14: Canyon Springs Geotechnical Monitoring and Reporting

Twice per year over two years, Aspect will complete visual inspection of the steep slopes and condition of the natural and constructed embankments that support the water line from Canyon Springs to the Chlorination Station. Existing field stations for specific areas of concern previously identified will continue to be monitored. Photos will be taken and archived for comparison with future site visits. Aspect will observe the performance of the recently stabilized slope and other slopes and areas of elevated risk along the alignment and comment on performance and recommendations for maintenance where necessary.

Results of Aspect's reconnaissance findings will be summarized in field reports with observations, recommendations, and photos or maps of significant features.

Deliverables: Four (4) field reports describing the results and interpretation of four field investigations of the pipeline.

Schedule: Fieldwork will be scheduled in coordination with the City, to occur in the fall and spring of each year between the fall of 2022 and Spring 2024.

Assumptions: (1) City staff will accompany Aspect on field inspections or otherwise provide detailed field instruction as needed.

Task 15: Contract Support, Progress Reporting, and Meetings

This task includes project management, including progress reports, internal staff coordination, and invoicing over the duration of Tasks 1 through 13. Aspect will also assist the City in preparing

quarterly progress reports and payment requests ("PRPRs") to Ecology regarding Tasks 2 through 8, along with the project closeout report for the Grant Agreement. Aspect will also conduct internal reviews of the project performance and risks at 0%, 30%, 60%, and 90% completion and share those findings with the City.

Deliverables: Monthly invoicing and project reports and text for quarterly PRPRs.

Schedule: Monthly project updates will be provided with invoices the 15th of each month.

Assumptions: The project duration will extend from July 15, 2022 through December 31, 2024.

Budget

The proposed budget for this work is presented in the following table. Work will be billed on a time-and-materials basis, not to exceed the overall authorization without prior approval from the City. Estimated hours by task and staff class are included as Attachment B.

Task Title	Labor	Direct Costs	Total
Task 1: On-call Water Rights Support	$20,000		$20,000
Task 2: Characterization of the Hydrogeologic System	$25,800		$25,800
Task 3: Water Quality Assessment	$59,000	$10,000	$69,000
Task 4: Regulatory Assessment	$14,900		$14,900
Task 5: Streamflow Benefit Quantification & Program Design	$122,500		$122,500
Task 6: Capital and O&M Cost Assessment	$7,300		$7,300
Task 7: Feasibility Study Report	$61,900		$61,900
Task 8: ASR Pilot Testing	$136,000	$40,000	$176,000
Task 9: Prepare and Support a Reservoir Permit Application	$12,000		$12,000
Task 10: Preliminary Permit Submittal for Surface Water Application No. S1-28833	$26,000		$26,000
Task 11: Preliminary Permit Submittals for Groundwater Application No. G1-27589	$40,000		$40,000
Task 12: AKART Analysis	$10,000	$25,000	$35,000
Task 13: On-call Agency, Stakeholder, and City Presentations/Coordination	$18,000		$18,000
Task 14: Canyon Springs Geotechnical Monitoring and Reporting	$15,000	$1,000	$16,000
Task 15: Contract Support, Progress Reporting, & Meetings	$30,000		$30,000
Total Budget	$598,400	$76,000	$674,400

We appreciate the opportunity to work with the City of Snoqualmie on this project and will be pleased to discuss this proposed scope of work with you.

Sincerely,

Aspect consulting, LLC

Andrew Austreng, LHG
Associate Hydrogeologist
aaustreng@aspectconsulting.com

Tim Flynn, LHG, CGWP
Principal Hydrogeologist
tflynn@aspectconsulting.com

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Attachments: Attachment A – Streamflow Restoration Grant Draft Scope of Work dated June 28, 2022
Attachment B – Estimated Labor Hours by Task

ATTACHMENT A

DEPARTMENT OF ECOLOGY
State of Washington

Agreement Number

Draft Scope of Work for Negotiation: WRSRP-2020-Snoqua-00096

GENERAL INFORMATION
Project Title: City of Snoqualmie ASR Program Development and Feasibility and Pilot Testing

Total Project Cost:	$477,400
Total Project Eligible Cost:	$477,400

The Effective Date of this Agreement is: July 15, 2022
The Expiration Date of this Agreement is no later than: *12/31/2024*
Project Type:

Project Short Description:
The RECIPIENT will complete a feasibility study and pilot testing for an Aquifer Storage and Recovery program using existing infrastructure. The RECIPIENT will divert water from its existing Canyon Springs source during high flows when water is seasonally available, convey it within its distribution system, and recharge a deep aquifer through existing wells. Some of the recharged water is expected to enhance streamflow in the Snoqualmie River, including during low flow periods.

Project Long Description:
The RECIPIENT will complete a feasibility study and pilot testing for an Aquifer Storage and Recovery (ASR) program using its existing Canyon Springs water source to store seasonally available water in a deep groundwater reservoir tapped by the City's two existing wellfields. The planned groundwater storage reservoir is hydraulically connected to the Snoqualmie River through leakance to a shallower aquifer system. A portion of the stored water is expected to discharge to the river as increased baseflow throughout the storage period, leading to increased streamflow and temperature benefits to the mainstem Snoqualmie River.

As proposed, the ASR program would improve water availability for public water supply in the summer months, when minimum instream flows are often not met in the Snoqualmie River, and help offset permit-exempt wells within WRIA 7. The RECIPIENT is pursuing the ASR program because urban development within and surrounding the City has increased dramatically in the last 20 years, while summer water availability is limited and is predicted to decline as a result of climate change and increased drought occurrence.

Between 2000 and 2019, Snoqualmie River instream flows below Snoqualmie Falls were not met an average of 61% of days in July and August. In contrast, instream flows were met an average of 80% of days from November through Ma

The seasonal streamflow surpluses and deficits indicate the potential for large flow benefits by re-timing with winter storage and summer release, but conventional storage infrastructure would be cost prohibitive, given the required storage volume. Given the City's existing infrastructure and favorable hydrogeologic setting, ASR presents a unique opportunity in WRIA 7 to store significant quantities of available winter flows for streamflow enhancement and City water supply at relatively low cost.

Using its existing Canyon Springs source and gravity conveyance, the RECIPIENT will recharge groundwater at the City's South Wellfield, which is completed within ancient Snoqualmie River alluvium (referred to as the "Olympia" sediments)_ at a depth of about 500 feet. The RECIPIENT will use its existing water rights for the source water for the ASR pilot testing. The RECIPIENT will apply for a Preliminary Reservoir Permit to authorize recovery of water.

Past efforts have characterized the deep aquifer tapped by the City (the proposed groundwater storage reservoir) as semi-confined over many square miles and shown that pumping (or recharge) would directly affect the Snoqualmie River. Numerical groundwater flow modeling will provide more detailed analysis on the timing and quantities of potential streamflow benefits. Development of this calibrated groundwater model, along with evaluating water level changes in the aquifer, will also determine the recoverable quantity of water from storage for City supply and streamflow enhancement.

Following Ecology guidance for Managed Aquifer Recharge projects and the ASR information requirements of Chapter 173-157 WAC, the Feasibility Study will: (1) further characterize the groundwater system; (2) address water quality of ASR source water, groundwater, and their comingling; (3) evaluate costs and regulatory requirements; (4) complete program design; (5) identify potential impacts to stakeholders and the environment; and (6) conduct groundwater modeling and analysis to refine quantification of streamflow benefits and to guide permitting.

Based on conclusions of the Feasibility Study, the RECIPIENT will refine the ASR program design, including performance monitoring. Once final program design is complete, the RECIPIENT will make minor infrastructure improvements as necessary (e.g., bypass piping for wellhead check valves), address regulatory requirements (RECIPIENT funded), and conduct a pilot test to verify the findings of the FS.

The workflow and funding source for this project is outlined as follows. The tasks with asterisks are provided here for context. The findings of RECIPIENT-funded tasks will be included in the FS Report and/or the Pilot test report.

Task 1: Project Administration (RECIPIENT-funded)
Task 2: Hydrogeologic Characterization to define modeling approach (grant funded)
Task 3: Water Quality Assessment (grant funded)
Task 4: Regulatory Assessment to identify permit constraints and information needs (grant funded)
Task 5: Streamflow Benefits Quantification (numerical groundwater modeling) and programmatic design (grant funded)
Task 6: Capital O&M Cost Assessment to determine overall implementation costs (grant funded)
*Additional Task to be Completed Outside of this Agreement: Engineering Assessment to Determine ASR Infrastructure Needs (RECIPIENT Funded)
Task 7: Feasibility Study Report (grant funded)
*Additional Task to be Completed Outside of this Agreement: Reservoir Permit Application Package Preparation and Submittal (RECIPIENT-funded)
Task 8: Pilot Testing (grant funded)

Outreach to stakeholders and tribal governments
The RECIPIENT will communicate the project schedule and comment due dates well in advance to ECOLOGY and federally recognized Tribal governments with interests in the region to ensure that the project remains on schedule and on task and that tribes have reasonable opportunity to comment and meaningfully provide feedback. The RECIPIENT will document comments received within the comment period, and incorporate the comments/suggestions into their

analyses and reporting to the extent they are within the scope of work for the agreement. The RECIPIENT will share all comments received with ECOLOGY, including comments received outside of comment periods, but prior to the expiration of the grant. Funding provided under this Agreement does not guarantee approval of permits required for the project. Permitting decisions will be made in accordance with applicable laws, regulations, and policies. Any interested party has a right to appeal a permitting decision to the Pollution Control Hearings Board (PCHB) within 30 days of the date of receipt of the permit. The appeal process is governed by Chapter 43.21B RCW and Chapter 371-08 WAC.

Overall Goal:

The overall goal of this project is to complete an ASR feasibility assessment, which includes hydrogeologic testing and analysis, ASR program design, quantification of streamflow benefits, assessment of regulatory and water quality considerations, and pilot testing of an ASR program.

Contacts

Project Manager	Jeff Hamlin Utilities Operations Manager 38624 SE River St Snoqualmie, Washington 98065 Email: jhamlin@snoqualmiewa.gov Phone: 425-888-8011
Billing Contact	Gerald Knutsen Financial Services Manager PO Box 987 Snoqualmie, Washington 98065 Email: Jknutsen@snoqualmiewa.gov Phone: 425-888-1555 or 425-831-6041
Authorized Signatory	Katherine Ross Mayor 38624 SE River St Snoqualmie, Washington 98065 Email: kross@snoqualmiewa.gov Phone: 425-888-5307

SCOPE OF WORK

Task Number: 1 **Task Cost:** $0

Task Title: Project Administration/Management

Task Description

A. The RECIPIENT will administer the project. Responsibilities will include, but not be limited to: maintenance of project records; submittal of requests for reimbursement and corresponding backup documentation, progress reports and Recipient Closeout Report; submittal of required performance items; and compliance with applicable procurement and contracting requirements.

B. The RECIPIENT will, along with each request for reimbursement, prepare and submit a progress report to ECOLOGY's project manager through Ecology's Administration of Grants and Loans (EAGL) on line grant management system. The reports shall include, at a minimum, the following information:

   A comparison of actual accomplishments to the objectives established for the reporting period.
   1. The reasons for any delays if the project does not meet established objectives.
   2. Plan and schedule of activities for the upcoming two months.
   3. Analysis and explanations of any cost overruns.
   4. Any additional pertinent information.

C. The RECIPIENT shall submit a Recipient Closeout Report encompassing the entire project with their last payment request. The RECIPIENT shall submit the final payment request and Recipient Closeout Report within 30 days of the end of this agreement.

D. The RECIPIENT must manage and carry out this project in accordance with any completion dates outlined in this agreement.

Task Goal Statement

Properly managed project that meets agreement and Ecology administrative requirements.

Task Expected Outcomes

* Timely and complete submittal of requests for reimbursement, quarterly progress reports and Recipient Closeout Report.

*Properly maintained project documentation

Recipient Task Coordinator: Jeff Hamlin

Project Administration/Management
Deliverables

Number	Description	Due Date
1.1	Progress Reports	
1.2	Recipient Closeout Report	12/31/2024

SCOPE OF WORK

Task Number: 2 **Task Cost:** $25,800

Task Title: Characterization of the Hydrogeologic System

Task Description:

The RECIPIENT will refine understanding of hydrogeologic system related to the Olympia aquifer (the 'Target Aquifer'), the reservoir for ASR storage. The RECIPIENT will evaluate hydraulic parameters, available storage volumes, aquifer boundary conditions, and hydraulic continuity with the Snoqualmie River.

The RECIPIENT will incorporate aquifer and well testing previously conducted by the City at its wellfields, combined with previously performed relevant groundwater modeling and other hydrogeologic studies and will complete the following tasks:

A. The RECIPIENT will complete further analysis of well logs, testing data, and geologic reports to better define the lateral and vertical extent of the Target Aquifer and develop updated cross-sections.

B. RECIPIENT will refine the hydrogeologic conceptual model for confining conditions, determining hydraulic gradients, hydraulic conductivities, and areas of continuity with the Snoqualmie River.

C. RECIPIENT will refine estimates of available storage volumes and durations in the Target Aquifer, based on hydraulic parameters and assessments of long-term and seasonal water level data.

D. RECIPIENT will assess any projected impacts from the ASR program on other groundwater uses in the vicinity (Landowner Acknowledgement Forms will be completed if other user's wells are identified for performance monitoring).

E. The RECIPIENT will prepare figures, including hydrogeologic cross-sections, maps showing the extent of the Target Aquifer, water level hydrographs, and/or summary tables of aquifer parameters and calculations related to the Target Aquifer.

F. The RECIPIENT will prepare and provide summary materials describing the findings of this task to ECOLOGY and interested federally recognized Tribal governments. The RECIPIENT will include and discuss the comments/suggestions received within 60 days after delivery of these materials into their analyses and reporting (under task 7), to the extent they are within the scope of work for the agreement. The RECIPIENT will share all comments received with ECOLOGY, including comments received outside of comment periods, but prior to the expiration of the grant.

Task Goal Statement:
Characterize the storage capacity of the Target Aquifer and determine groundwater flow characteristics (e.g., gradient, velocity, and leakance) relative to Snoqualmie River baseflows.

Task Expected Outcome:
This task will result in refinement of the hydrogeologic conceptual model and aquifer parameters, delineation of the Target Aquifer, and estimation of potential storage volumes and duration.

Recipient Task Coordinator: Jeff Hamlin

Deliverables

Number	Description	Due Date
2.1	Cross-sections/maps, and summary table(s) of hydrogeologic properties of key aquifers and aquitards submitted to ECOLOGY. Upload to EAGL and notify Ecology Project Manager when upload is complete. (Note that incorporation of comments on materials addressed in task 7)	1/15/2023
2.2	Landowner Acknowledgement Forms (if needed for task 2D). Upload to EAGL either the Landowner Acknowledgement forms or confirmation that Landowner Acknowledgement forms were not needed for monitoring. Notify Ecology Project Manager when upload is complete.	

SCOPE OF WORK

Task Number: 3 **Task Cost:** $69,000

Task Title: Water Quality Assessment

Task Description:

The RECIPIENT will characterize water quality for receiving groundwater in the Target Aquifer (native groundwater quality) and Canyon Springs source water, and identify any concerns regarding potential water quality impacts and compliance with the antidegradation policy in Chapter 173-200 WAC associated with introduction of the source water into the Target Aquifer.

A. The RECIPIENT will develop and submit a Quality Assurance Project Plan (QAPP) based on templates provided by ECOLOGY to guide the environmental monitoring activities during the Water Quality Assessment. The QAPP will document all methods, procedures, parameters, monitoring stations, and quality control measures to be implemented during the Water Quality Assessment.

   The RECIPENT will prepare the QAPP to address all water quality and water resources data collection using Ecology's current Environmental Assessment Program (EAP) General QAPP Template. The QAPP will go through a review process and must be approved and signed by both ECOLOGY and the RECIPIENT. Any monitoring activity conducted before the QAPP receives final approval may not be eligible for reimbursement and any data collected may not be eligible to be submitted under an approved QAPP. ECOLOGY will only consider such exceptions under very limited circumstances and decisions are at the discretion of ECOLOGY.

   The RECIPIENT will revise the QAPP or prepare a separate QAPP, if needed, to guide the environmental and performance monitoring activities conducted during the pilot test in task 8.

B. The RECIPIENT will submit all environmental monitoring data into Ecology's Environmental Information Management (EIM) database.

C. RECIPIENT will compile and evaluate the City's historical water quality data submitted to the Department of Health.

D. RECIPIENT will complete PHREEQC geochemical modeling to identify dissolution and precipitation reactions, and water chemistry in the aquifer and ASR well(s) before, during, and after ASR cycling. Attention will be given to characterizing water quality reactions that could occur at the City's South Wellfield during comingling of stored and native groundwater.

Task Goal Statement:

Conduct water quality characterization and modeling to represent operational phases of the ASR program. The characterization will inform regulatory and modeling considerations, and the predictive modeling will inform O&M, performance, and impairment assessments.

Task Expected Outcome:
Development of water quality datasets for the source and receiving waters, and the expected chemistry resulting from comingling of source and receiving waters in storage.

Recipient Task Coordinator: Jeff Hamlin

Deliverables

Number	Description	Due Date
3.1	Upload final approved and signed QAPP into EAGL prior to conducting any monitoring activities (due date assumes 30-day ECOLOGY review)	1/15/2023
3.3	Upload final approved QAPP covering monitoring activities conducted during pilot testing under task 8.	12/31/2023
3.2	Collect and manage all data following an approved QAPP and submit all monitoring data into ECOLOGY's EIM database. Upload to EAGL the emails from the EIM coordinator confirming the data has been accepted and entered into EIM.	12/31/2024

SCOPE OF WORK

Task Number: 4 **Task Cost:** 14,900

Task Title: Regulatory Assessment

Task Description:

The RECIPIENT will identify and summarize the regulatory requirements for implementing the proposed ASR program. This will include an assessment of compliance with Groundwater Quality Standards (Chapter 173-200 WAC) based on the water quality assessment conducted in Task 3, anticipated provisions of an ASR reservoir permit, compliance with Chapter 173-157 WAC, and water right impairment considerations. The RECIPIENT will evaluate specific permit considerations under the Task 5 modeling efforts.

Task Goal Statement:

This task goal is to identify the regulatory requirements and permitting approach for the ASR program with consideration to the results of the Hydrogeologic Characterization (Task 2) and Water Quality Assessment (Task 3).

Task Expected Outcome:

Development of a permitting approach for the project that meets regulatory requirements and allows approval of the project.

Recipient Task Coordinator: Jeff Hamlin

Deliverables

Number	Description	Due Date
4.1	Final technical memorandum summarizing specific regulatory requirements for the project. Upload to EAGL and notify Ecology Project Manager when upload is complete.	7/15/2023

Task Number: 5 **Task Cost:** 122,500

Task Title: Streamflow Benefit Quantification & Program Design

Task Description:

A. RECIPIENT will evaluate and determine the expected streamflow benefits provided by the ASR program and develop an operational design that maximizes water supply and streamflow benefits.

B. RECIPIENT will incorporate data compiled and synthesized under the Task 2 Hydrogeologic Characterization and past efforts into development of a numerical groundwater flow model representing the Target Aquifer for ASR and hydrogeologic boundaries, including the Snoqualmie River.

C. RECIPIENT will calibrate the model using recent pumping test results, water level and streamflow data collected by public agencies, and other available studies.

D. Following completion of a suitable model calibration and appropriate model sensitivity analyses, the RECIPIENT will use the groundwater model to simulate a range of reasonable recharge, storage, and recovery scenarios (e.g., source water availability, recharge and recovery locations and durations, and storage times). The period and duration of streamflow benefits will be assessed based on the modeling results.

E. The RECIPIENT will refine the design of the ASR program to provide the maximum anticipated benefits to streamflow and water supply under practical operations. Program design will include an assessment of existing diversion, conveyance, and well infrastructure to identify necessary infrastructure changes, if needed.

F. RECIPIENT will prepare a presentation summarizing the findings of this task and provide this presentation to ECOLOGY and interested federally recognized Tribal governments during a combined meeting. The RECIPIENT will include and discuss the comments/suggestions received within 60 days after delivery of the presentation into their analyses and reporting (under task 7), to the extent they are within the scope of work for the agreement. The RECIPIENT will share all comments received with ECOLOGY, including comments received outside of comment periods, but prior to the expiration of the grant.

Task Goal Statement:

The goal of this task is to develop a numerical groundwater model to assess future water supply and streamflow benefits of the ASR program. Based on model predictions, the ASR program design will be refined to produce the maximum expected benefits to enhance instream flows in the Snoqualmie River and provide public water supply benefits, through optimization of recharge volumes, storage scenarios, and wellfield operations.

Task Expected Outcome:

Analysis with a numerical groundwater model that provides an appropriate tool to design and assess the performance of the ASR program for optimal benefits to streamflow enhancement and the City's public water supply.

Recipient Task Coordinator: Jeff Hamlin

Deliverables

Number	Description	Due Date
5.1	Presentation materials, including relevant figures, tables, and maps. Upload to EAGL and notify Ecology Project Manager when upload is complete. (Note that addressing comments from ECOLOGY and interested federally recognized Tribal governments is part of Task 7)	7/15/2023

SCOPE OF WORK

Task Number: 6 **Task Cost:** $7,300

Task Title: Capital and O&M Cost Assessment

Task Description:

A. The RECIPIENT will identify the capital and O&M cost requirements for implementing and operating the proposed ASR program.

Task Goal Statement:

The goal of this task is to provide accurate quantification of the planning-level costs for implementation and maintenance of the ASR program to be considered and incorporated into the recommendations of the FS Report (Task 8).

Task Expected Outcome:

Understanding of planning-level costs associated with implementation and long- term operation of the ASR.

Recipient Task Coordinator: Jeff Hamlin

Deliverables

Number	Description	Due Date
6.1	Summary Tables of O&M assessment (description of the capital and O&M assessment and associated conclusions, incorporated into the FS report and submitted to ECOLOGY).	7/15/2023

SCOPE OF WORK

Task Number: 7 **Task Cost:** 61,900

Task Title: Feasibility Study Report

Task Description:

A. The RECIPIENT will assemble the technical analyses completed under Tasks 2 through 6 to prepare the ASR Feasibility Study (FS) report. The FS report will assess the appraisal-level costs, and technical and regulatory viability of the project with respect to streamflow restoration and public water supply benefits, along with the other required elements of a Feasibility Study identified in the 2020 Streamflow Restoration Grant Guidance documents. The report will be structured to provide information required to support a viable application package to ECOLOGY for an ASR reservoir permit, as specified in Chapter 173-157 WAC. The results of the hydrogeological, numerical groundwater modeling, and geochemical modeling will be presented in the context of streamflow benefits and regulatory considerations, including the recommended quantities of groundwater withdrawal for public water supply use. FS findings will include an uncertainty analysis in the calculated streamflow benefits. The FS will also provide specific recommendations for pilot testing of the ASR program.

B. The RECIPIENT will prepare a presentation summarizing the findings of the draft FS and provide this presentation to ECOLOGY and interested federally recognized Tribal governments during a combined meeting. The RECIPIENT will include and discuss the comments/suggestions received within 60 days after delivery of the presentation into the Final Feasibility Study report, to the extent they are within the scope of work for the agreement. The RECIPIENT will share all comments received with ECOLOGY, including comments received outside of comment periods, but prior to the expiration of the grant.

If appropriate, the FS report will then include recommendations for addressing data gaps, including pilot test program approaches and durations, and recommended provisions for a Quality Assurance Project Plan (QAPP) to be revised, as necessary, under Task 3.

Task Goal Statement:

The goal of this task is to assemble the technical analyses completed under Tasks 2 through 6 into a comprehensive FS Report intended to allow ASR project review by ECOLOGY, City of Snoqualmie administrators and technical staff, and other stakeholders.

Task Expected Outcome:

Completion and distribution of the draft FS Report, followed by a final report addressing ECOLOGY and tribal government comments.

Recipient Task Coordinator: Jeff Hamlin

Deliverables

Number	Description	Due Date
7.1	Draft FS Report compiling technical materials and associated conclusions developed under Tasks 2 through 6. Draft report will meet Ecology's document accessibility standards. Upload to EAGL and notify Ecology Project Manager when upload is complete.	11/1/2023
7.2	Final FS Reports compiling technical materials and associated conclusions developed under Tasks 2 through 6 and addressing comments from ECOLOGY and federally recognized Tribal governments. Final report will meet Ecology's document accessibility standards. Upload to EAGL and notify Ecology Project Manager when upload is complete. Due date assumes 30-day Ecology review.	12/31/2023
7.3	Presentation materials, including relevant figures, tables, and maps. Upload to EAGL and notify Ecology Project Manager when upload is complete.	
7.4	Comments received from federally recognized Tribal governments. Upload to EAGL and notify Ecology Project Manager when upload is complete.	12/31/2024

Task Number: 8 **Task Cost:** 176,000

Task Title: ASR Pilot Testing

Task Description:

The RECIPIENT will conduct an initial pilot test of the ASR program under a new temporary ASR Reservoir Permit (to be obtained separately and in advance by the City), followed by performance analyses and comparison of results to the Task 5 model predictions (aquifer water levels and hydraulic parameters). An overview of the subtasks to be completed under this task is provided below.

A. The RECIPIENT will complete a pilot test with a focus on evaluating the ASR performance metrics identified in the final Feasibility Study Report that has incorporated stakeholder and ECOLOGY comments (e.g., aquifer/well levels, well yield, and water quality changes).
B. The RECIPIENT will instrument City wells with dataloggers for water level, flow, and field water quality (up to four additional private wells may also be identified and monitored).
    1. The RECIPIENT will conduct a system shakedown to evaluate the recharge, storage, and recovery system by conducting a brief period of ASR cycling (e.g., less than 1 day) to make sure all equipment and infrastructure is operable and to identify any necessary adjustments to be made.
    2. Following this initial system shakedown, the RECIPIENT will conduct the pilot test. The pilot test involves recharge, storage, and recovery within the Target Aquifer at a single City well. Recharge will occur over a single recharge season (e.g., over a continuous 6-week period to be scheduled sometime between October and May) at the highest rate that is reasonably sustainable (the actual recharge rate and duration will depend on well hydraulics and infrastructure performance). After the recharge phase is complete, stored water will be left in the aquifer for an extended period (e.g., several months, to be informed by the results of the preceding tasks) to assess water quality and water level response in the aquifer. At the conclusion of the storage phase, the RECIPIENT will recover water remaining in storage through pumping the same well used for recharge.
    3. During each phase of the ASR pilot test, the RECIPIENT will monitor water quality and the hydraulic performance of the well, Target Aquifer, and the City's drinking water distribution system. The RECIPIENT will analyze test data to inform future implementation of the ASR program. Any monitoring activities conducted as part of this task will be covered by an approved QAPP, prepared under task 3.

C. Prepare Pilot Test Report. The RECIPIENT will prepare a report documenting the water quality and hydraulic performance of the ASR program components observed during the pilot test as detailed in the approved QAPP. This report will recommend O&M procedures for preliminary implementation of the ASR program and/or identify any issues that may affect implementation.

Task Goal Statement:

Complete initial pilot testing to demonstrate feasibility and associated streamflow benefits of the ASR program.

Task Expected Outcome:

Demonstration of ASR program feasibility and associated streamflow benefits.

Recipient Task Coordinator: Jeff Hamlin

Deliverables

Number	Description	Due Date
8.1	A report presenting the data and analysis collected during the pilot test. Report will meet Ecology's document accessibility standards. Upload to EAGL and notify Ecology Project Manager when upload is complete.	12/31/2024

Attachment B: Labor Hours and Budget By Task

Work Element	Labor Budget Basis in Hours											Total Labor Budget	Other Direct Charges	Total
	Principal 2	Associate	Sr. Associate	Senior 2	Project 3	Project 1	Project 1	Staff 3	Sr. CAD	Sr. Editor	Coordinator 2			
Task 1: Water Rights on-Call														
on-call support	26	32				24				6		$ 19,932		$ 19,932
Task 2 - Hydrogeologic Characterization														
Data synthesis and Analysis		2		16	16			30				$ 10,570		$ 10,570
Cross-sections & Evaluate/Summarize Well Logs		2		8				8	16			$ 5,310		$ 5,310
Estimate Hydraulic Parameters		2		4				8				$ 2,342		$ 2,342
Identify/characterize Other Groundwater Users		2		8				40				$ 7,566		$ 7,566
Task 3 - Water Quality Assessment														
Prepare Draft & Final QAPP		12		32				44	10			$ 16,466		$ 16,466
Synthesize Existing data		4		16				48				$ 10,716		$ 10,716
WQ Sampling, synthesis, and analysis		4		8				16				$ 4,684	$ 10,000	$ 14,684
PHREEQC Modeling	4	20		40	60			24				$ 27,124		$ 27,124
Task 4- Regulatory Assessment														
Evaluation	8	16		24								$ 10,392		$ 10,392
Memorandum	2	8		10					2			$ 4,536		$ 4,536
Task 5 - Numerical Modeling														
Setup & Calibration		16		4	240			120	16			$ 64,488		$ 64,488
Sensitivity Analysis		4		4	60			60				$ 20,328		$ 20,328
Model Scenarios	4	8		8	60			60				$ 23,048		$ 23,048
Coordination on Results (presentation and meet	8	24		24	8			8				$ 14,600		$ 14,600
Task 6 Cost Assessment														
Identify System Changes	1	4		8								$ 2,739		$ 2,739
Obtain cost estimates for engineering		4		4				12				$ 3,324		$ 3,324
Estimate Costs for Regulatory Compliance		2		4								$ 1,238		$ 1,238
Task 7 - FS Report														
Prepare Draft Report Text	8	20		60	8			32				$ 24,324		$ 24,324
Figures & Tables				4	8			32	24			$ 9,848		$ 9,848
Present & Coordinate on Results	4	24		32	8			8	8			$ 16,244		$ 16,244
Prepare Final Report	4	16		24				8	8			$ 11,524		$ 11,524
Task 8 - Pilot Testing & Reporting														
Initiate Pilot Test (Mon. Network Setup. determi	8	32		80				180				$ 49,984	$ 25,000	$ 74,984
Pilot Testing and Analysis (storage and recovery)	8	32		60				160				$ 43,184	$ 15,000	$ 58,184
Reporting	8	24		40				40	8			$ 21,944		$ 21,944
Meetings, Coordination, EIM Uploads, and PM	16	32		32				24				$ 20,864		$ 20,864
Task 9: Reservoir Permit														
PreApp Meetings	4	6				2						$ 2,920		$ 2,920
Application Package	3	6				10				4		$ 4,486		$ 4,486
Ecy Coordination	6	8				4						$ 4,308		$ 4,308
Task 10: S1-28833 Prelim Permit														
Phase 1 revisions (complete)	2	12	4						2	4		$ 5,276		$ 5,276
Develop Phase 2 Compliance Program	2	6	8									$ 4,040		$ 4,040
Draft Phase 2 Compliance Plan Report	2	8	8			24			6	8		$ 10,444		$ 10,444
Final Phase 2 Compliance Plan Report	4	4	8			6			2	4		$ 5,964		$ 5,964
Task 11: G1-27589 Prelim Permit														
Draft Phase 2 CMP	2	8	2			32			8	6		$ 10,280		$ 10,280
Final Phase 2 CMP	2	8	2			12			2	2		$ 5,544		$ 5,544
Draft Phase 3 Mitigation Plan	4	24	4			20			4	4		$ 12,328		$ 12,328
Final Phase 3 Mitigation Plan	4	24	4			20			4	4		$ 12,328		$ 12,328
Task 12: AKART Analysis														
Technical Analysis (incl. sub coordination)	4	8				12						$ 5,056	$ 15,000	$ 20,056
Draft and final Report	4	8				12						$ 5,056	$ 10,000	$ 15,056
Task 13: On-call Agency/Stakeholder Support														
on-call support	24	24	8			4			16			$ 17,736		$ 17,736
Task 14: Canyon Springs Geotech														
4 site walks							60					$ 9,960	$ 1,000	$ 10,960
4 field reports		8					16			4		$ 5,088		$ 5,088
Task 15: Contract Support, Progress Reporting, & Meetings														
Comms	20	40										$ 15,320		$ 15,320
QA/QC	4	4	4			4						$ 3,792		$ 3,792
Invoicing	8	30									16	$ 11,252		$ 11,252
Total	208	586	52	570	468	186	76	986	144	46	16	$ 598,497	$ 76,000	$ 674,497

CITY OF SNOQUALMIE
AGREEMENT FOR CONSULTANT SERVICES

Water Rights Assistance

THIS AGREEMENT made and entered into by and between the CITY OF SNOQUALMIE, a Washington municipal corporation (the "City"), and Aspect Consulting LLC, a Washington corporation ("Consultant") is dated this 1st day of April 2015.

Consultant Business: Aspect Consulting LLC

Consultant Address: 401 Second Avenue S, Suite 201
Seattle 98104

Consultant Phone: 206.812.4748

Contact Name: Carl Einberger

Contact e-mail: ceinberger@aspectconsulting.com

Federal Employee ID No.: 91-2149055

Authorized City Representative for this contract Daniel J. Marcinko, Parks and Public Works Department Director

WHEREAS, the City desires to obtain water rights assistance services;

WHEREAS, public convenience and necessity require the City to obtain the services of a consultant with expertise in the area of water rights and water resources in the State of Washington; and

WHEREAS, the City finds that Consultant is qualified to perform and is experienced in performing the required services; and

WHEREAS, the City desires to engage the Consultant to in assist the City with the regulatory process for transferring existing water rights and obtaining new water rights.

NOW, THEREFORE, the parties herein do mutually agree as follows:

1. Employment of Consultant.

A. The City retains the Consultant to provide the services described in "Exhibit A" (the "Work"). Any inconsistency between this Agreement and the Scope of Work shall be resolved in favor of this Agreement. The Consultant shall perform the Work according to the terms and conditions of this Agreement.

B. The City may revise the Work and the compensation only by a written Change Order signed by the authorized City representative that shall become a part of this Agreement.

C. Work shall commence when the City issues a notice to proceed and it shall be completed no later than December 31, 2016, unless the completion date is extended in writing by the City.

2. Compensation.

A. The total compensation to be paid to Consultant, including all services and expenses, shall not exceed $ 59,167 as shown on Exhibit B, which shall be full compensation for the Work. Consultant shall notify the City when its requests for payment reach eighty-five percent of the total compensation.

B. The Consultant shall be paid in such amounts and in such manner as described in Exhibit B.

C. Consultant shall be reimbursed for Eligible Expenses actually incurred. "Eligible Expenses" means those types and amounts of expenses that are approved for reimbursement by the City in writing before the expense is incurred. If travel and/or overnight lodging is authorized, Consultant shall lodge within the corporate limits of City.

3. Request for Payment.

A. Not more than once every thirty days the Consultant shall file its request for payment, accompanied by evidence satisfactory to the City justifying the request for payment, including a report of Work accomplished and tasks completed, and an itemization of Eligible Expenses with copies of receipts and invoices.

B. All requests for payment should be sent to

City of Snoqualmie
Attn: Nancy Davidson, Operations Manager
38624 SE River Street
P.O. Box 987
Snoqualmie, WA 98065

4. Work Product.

A. The Consultant shall submit all reports and other documents specified in Exhibit A according to the schedule established in Exhibit A. If, after review by the City, the information is found to be unacceptable, Consultant, at its expense, shall expeditiously correct such unacceptable work. If Consultant fails to correct unacceptable work, the City may withhold from any payment due an amount that the City reasonably believes will equal the cost of correcting the work.

B. All reports, drawings, plans, specifications, and intangible property created in furtherance of the Work, and any intellectual property in such documents, are property of the City and may be used by the City for any purpose; provided that re-use without Consultant's permission shall be at the City's sole risk.

5. Substitution of Personnel.

A. The Consultant recognizes and agrees that if a change is made substituting or changing assigned key personnel, the Consultant shall be responsible for any and all costs associated with "Transfer of Knowledge and Information". The Transfer of Knowledge and Information shall be defined to include the labor hours spent reviewing project documentation, participating in meetings with Project personnel, and participating in site visits to familiarize oneself with the Project and project location(s). The City shall not pay for any time spent for the "Transfer of Knowledge and Information".

B. The Consultant shall provide sufficient advance notice of any intention to remove or reassign key personnel. The Consultant shall not remove or reassign the key personnel

assigned to this Project without written consent from the City. Exhibit C, Key Personnel, is a listing of key individuals for this work. Notice for the substitution of individuals and positions identified as Key Personnel shall include the following:

- An explanation of the reason for the reassignment or removal;
- The name of the person proposed to replace the individual; and
- Identification of the experience and qualifications of the individual proposed.

C. For individuals who are not identified as "Key Personnel" in Exhibit C, the Consultant shall provide documentation supporting the labor rate for the substituted personnel prior to submitting an invoice and the labor rate shall not exceed 110 percent of the originally assigned personnel's labor rate.

D. The Consultant shall remove from the Project any personnel or subconsultant if, after the matter has been thoroughly considered by the City and the Consultant, the City considers such removal necessary and in the best interests of the Project and so advises the Consultant in writing.

6. Termination of Contract. City may terminate this Agreement by sending a written notice of termination to Consultant ("Notice") that specifies a termination date ("Termination Date") at least fourteen (14) days after the date of the Notice. Upon receipt of the Notice, the Consultant shall acknowledge receipt to the City in writing and immediately commence to end the Work in a reasonable and orderly manner. Unless terminated for Consultant's material breach, the Consultant shall be paid or reimbursed for all hours worked and Eligible Expenses incurred up to the Termination date, less all payments previously made; provided that work performed after date of the Notice is reasonably necessary to terminate the Work in an orderly manner. The Notice may be sent by any method reasonably believed to provide Consultant actual notice in a timely manner

7. Assignment of Contract – Subcontractors. Consultant shall not assign this contract or sub-contract or assign any of the Work without the prior written consent of the City.

8. Indemnification.

A. To the extent provided by law and irrespective of any insurance required of the Consultant, the Consultant shall defend and indemnify the City from any and all Claims arising out of or in any way relating to this Agreement; provided, however, the requirements of this paragraph shall not apply to that portion of such Claim that reflects the percentage of negligence of the City compared to the total negligence of all persons, firms or corporations that resulted in the Claim.

B. Consultant agrees that the provisions of this paragraph 7 apply to any claim of injury or damage to the persons or property of consultant's employees. As to such claims and with respect to the City only, consultant waives any right of immunity, which it may have under industrial insurance (Title 51 RCW and any amendment thereof or substitution therefore). THIS WAIVER IS SPECIFICALLY NEGOTIATED BY THE PARTIES AND IS SOLELY FOR THE BENEFIT OF THE CITY AND CONSULTANT.

C. As used in this paragraph: (1) "City" includes the City's officers, employees, agents, and representatives; (2) "Consultant" includes employees, agents, representatives sub-consultants; and (3) "Claims" include, but is not limited to, any and all losses, claims,

causes of action, demands, expenses, attorney's fees and litigation expenses, suits, judgments, or damage arising from injury to persons or property.

D. Consultant shall ensure that each sub-consultant shall agree to defend and indemnify the City to the extent and on the same terms and conditions as the Consultant pursuant to this paragraph.

9. Insurance.

A. Consultant shall comply with the following conditions and procure and keep in force at all times during the term of this Agreement, at Consultant's expense, the following policies of insurance with companies authorized to do business in the State of Washington. The Consultant's insurance shall be rated by A. M. Best Company at least "A" or better with a numerical rating of no less than seven (7) and otherwise acceptable to the City.

1. Workers' Compensation Insurance as required by Washington law and Employer's Liability Insurance with limits not less than $1,000,000 per occurrence. If the City authorizes sublet work, the Consultant shall require each sub-consultant to provide Workers' Compensation Insurance for its employees, unless the Consultant covers such employees.
2. Commercial General Liability Insurance on an occurrence basis in an amount not less than $1,000,000 per occurrence and at least $2,000,000 in the annual aggregate, including but not limited to: premises/operations (including off-site operations), blanket contractual liability and broad form property damage.
3. Business Automobile Liability Insurance in an amount not less than $1,000,000 per occurrence, extending to any automobile. A statement certifying that no vehicle will be used in accomplishing this Agreement may be substituted for this insurance requirement.
4. Professional Errors and Omissions Insurance in an amount not less than $1,000,000 per occurrence and $1,000,000 in the annual aggregate. Coverage may be written on a claims made basis; provided that the retroactive date on the policy or any renewal policy shall be the effective date of this Agreement or prior, and that the extended reporting or discovery period shall not be less than 36 months following expiration of the policy. The City may waive the requirement for Professional Errors and Omissions Insurance whenever the Work does not warrant such coverage or the coverage is not available.
5. Each policy shall contain a provision that the policy shall not be canceled or materially changed without 30 days prior written notice to the City.

Upon written request by the City, the insurer will furnish, before or during performance of any Work, a copy of any policy cited above, certified to be a true and complete copy of the original.

B. Before the Consultant performs any Work, Consultant shall provide the City with a Certificate of Insurance acceptable to the City Attorney evidencing the above-required insurance and naming the City of Snoqualmie, its officers, employees and agents as Additional Insured on the Commercial General Liability Insurance policy and the Business Automobile Liability Insurance policy with respect to the operations performed and services provided

under this Agreement and that such insurance shall apply as primary insurance on behalf of such Additional Insured. Receipt by the City of any certificate showing less coverage than required is not a waiver of the Consultant's obligations to fulfill the requirements.

C. Consultant shall comply with the provisions of Title 51 of the Revised Code of Washington before commencing the performance of the Work. Consultant shall provide the City with evidence of Workers' Compensation Insurance (or evidence of qualified self-insurance) before any Work is commenced.

D. In case of the breach of any provision of this section, the City may provide and maintain at the expense of Consultant insurance in the name of the Consultant and deduct the cost of providing and maintaining such insurance from any sums due to Consultant under this Agreement, or the City may demand Consultant to promptly reimburse the City for such cost.

10. Independent Contractor. The Consultant is an independent Contractor responsible for complying with all obligations of an employer imposed under federal or state law. Personnel employed by Consultant shall not acquire any rights or status regarding the City.

11. Employment. The Consultant warrants that it did not employ or retain any company or person, other than a bona fide employee working solely for the Consultant, to solicit or secure this Agreement or pay or agree to pay any such company or person any consideration, contingent upon or resulting from the award or making of this Agreement. For breach or violation of this warranty, the City shall have the right either to terminate this Agreement without liability or to deduct from the Agreement price or consideration or to otherwise recover, the full amount of such consideration.

12. Audits and Inspections. The Consultant shall make available to the City during normal business hours and as the City deems necessary for audit and copying all of the Consultant's records and documents with respect to all matters covered by this Agreement.

13. City of Snoqualmie Business License. Consultant shall obtain a City of Snoqualmie business license before performing any Work.

14. Compliance with Federal, State and Local Laws. Consultant shall comply with and obey all federal, state and local laws, regulations, and ordinances applicable to the operation of its business and to its performance of the Work.

15. Waiver. Any waiver by the Consultant or the City of the breach of any provision of this Agreement by the other party will not operate, or be construed, as a waiver of any subsequent breach by either party or prevent either party from thereafter enforcing any such provisions.

16. Complete Agreement. This Agreement contains the complete and integrated understanding and agreement between the parties and supersedes any understanding, agreement or negotiation whether oral or written not set forth herein.

17. Modification of Agreement. This Agreement may be modified by a Change Order as provided in Paragraph 1, or by a writing that is signed by authorized representatives of the City and the Consultant.

18. Severability. If any part of this Agreement is found to be in conflict with applicable laws, such part shall be inoperative, null and void, insofar as it is in conflict with said laws, the remainder of the Agreement shall remain in full force and effect.

19. Notices.

A. Notices to the City of Snoqualmie shall be sent to the following address:

City of Snoqualmie
Attn: Daniel J. Marcinko
38624 SE River Street
P.O. Box 987
Snoqualmie, WA 98065

B. Notices to the Consultant shall be sent to the following address:

Aspect Consulting LLC
Attn: Carl Einberger
401 Second Avenue S, Suite 201
Seattle, WA 98104

20. Venue. This Agreement shall be governed by the law of the State of Washington and venue for any lawsuit arising out of this Agreement shall be in King County.

IN WITNESS WHEREOF, the City and Consultant have executed this Agreement as of the date first above written.

CITY OF SNOQUALMIE, WASHINGTON By: _____ Its: Mayor Date: April 25, 2016	ASPECT CONSULTING LLC By: _____ Typed/Printed Name: Carl Einberger Its: Associate Hydrogeologist Date: 4/1/16
ATTEST: Jodi Warren, City Clerk Date: April 25, 2016 AB16-061	
APPROVED AS TO FORM: Bob C. Sterbank, City Attorney Date: 5/3/2016	

Exhibit A
Scope of Work

Task 1 – Evaluate City's Water Right Portfolio/Recommend Actions

The purpose of this task is to evaluate the City's existing water rights portfolio and provide recommendations for water right asset preservation. Proposed work includes:

- Determine recommended course of action for claim wells.
- Address and clarify status of existing water rights; provide recommendations if action is warranted.
- Prepare a Technical Memorandum summarizing conclusions and recommendations.

The estimated total cost for Task 1 is $7,672.

Task 2 – Review Potential Water Rights for Purchase

The purpose of this task is to evaluate other existing water rights for potential purchase by the City. Proposed work includes:

- Conduct a screening level analysis of water rights upstream from approximately Snoqualmie Falls to evaluate potential suitability for purchase.
- Rank water rights for potential follow up (low, medium, high priority)
- Conduct a detailed evaluation of water right extent and validity of any potentially-available high priority rights identified through the screening level analysis. This work consider and build upon previous Aspect work and other available evaluations.
- Provide recommendations on pursuing purchase of above potential target rights.
- Prepare a Technical Memorandum summarizing the water rights evaluation and recommendations for next steps.

The estimated total cost for Task 2 is $10,392.

Task 3 – Support Processing of Existing City Water Right Application

The City has a water right application filed with Ecology with a priority date of March 16, 1995. The purpose of this task is to evaluate pathways to obtain approval by Ecology of this water right application. Proposed work includes:

- Develop an approach for additional permitting support for a new groundwater right, including potential modeling.
- Conduct a screening level analysis of potential mitigation options, identify low, medium and high priority mitigation options.
- Conduct detailed analysis of identified high priority mitigation options.
- Provide recommendations on the path forward with Ecology.
- Provide recommendations and next steps on preferred mitigation options.
- Prepare a Technical Memorandum summarizing work completed under this task and recommended next steps.

The estimated total cost for Task 3 is $24,300, including $4,500 in subconsultant expenses (Gray & Osborne).

Task 4 – Prepare Water Right Application(s)

Prepare a water right application for potential City use.

The estimated total cost for Task 4 is $4,203.

Task 5 – Management Reserve/Meetings
This task is intended to provide funding for meetings with the City and stakeholders as requested by the City within the constraints of the approved budget. In addition, this task includes project management tasks, including progress reports, staff coordination, and invoicing. It is anticipated that meetings will occur with the City and others, including:

- The City's project management team
- The City Council and the Council's Parks and Public Works Committee
- Other water right holders.
- The Washington State Department of Ecology.

The estimated total cost for Task 5 is $12,601, including $480 in subconsultant expenses (Gray & Osborne).

Project Cost Summary and Schedule
The estimated total cost for the proposed work totals $59,167. A detailed cost summary is provided in the attached Exhibit B.

Our proposed tentative schedule, pending an established contract authorization date, follows:

Proposed Deliverables and Schedule		
Task	**Deliverable**	**Due Date**
1	Technical Memorandum – City's Water Right Portfolio Evaluation and Recommendations	75 days after contract authorization
2	Water Right Application Preparation	60 days after staff authorization
3	Technical Memorandum – Third-Party Water Right Evaluation and Recommendations	90 days after contract authorization
4	Technical Memorandum – New Water Right Options and Recommendations	120 days after staff authorization
5	Meeting Notes/Minutes	Throughout the project

Exhibit B

Compensation

Exhibit B - City of Snoqualmie Water Rights Support Cost Estimate -

Project Management Plan

Job Number:	150386	**Date Authorized:**	Pending
Project Manager:	C. Einberger	**Budget:**	
Communications Charge:	4%	**Target Completion Date:**	

		Labor Budget Basis in Hours											
		TJF	DRH	CME	PSB	SDM	JB						
		Principal	Sr. Associate	Associate	Associate	Project	Sr. Staff	Project Assistant	GIS/CAD	Total Labor Budget	Other Direct Charges (ODC)	Subs	
		$ 209	$ 195	$ 182	$ 182	$ 136	$ 188	$ 80	$ 99				
Task	Work Element	$ 217.36	$ 202.80	$ 189.28	$ 189.28	$ 141.44	$ 195.52	$ 83.20	$ 102.96				
1	**Evaluate WR Portfolio/Recommend Actions**	4	1	18			14	3	2	$ 7,672			
2	**Prepare New WR Application - Canyon Springs**	3	1	8			8	2	1	$ 4,203			
3	**Review Potential WR for Purchase**	5	1	16			26	2	8	$ 10,392			
4	**Support WR Processing - Pending Application**	8	2	32	4	12	40	6	8	$ 19,800		$ 4,500	G&O
5	**Management Reserve/Meetings**	16	2	36	2			4	4	$ 11,821	$ 300	$ 480	G&O
	Total	36	7	110	6	12	88	17	23	$ 53,887	$ 300	$ 4,980	

Task Budget Summary

Task #	Task Title	Labor	ODC	Subs	Total
1	Evaluate WR Portfolio/Recommend Actions	$ 7,672			$ 7,672
2	Prepare New WR Application - Canyon Springs	$ 4,203			$ 4,203
3	Review Potential WR for Purchase	$ 10,392			$ 10,392
4	Support WR Processing - Pending Application	$ 19,800		$ 4,500	$ 24,300
5	Management Reserve/Meetings	$ 11,821	$ 300	$ 480	$ 12,601
	Total Project Budget	**$ 53,887**	**$ 300**	**$ 4,980**	**$ 59,167**

Exhibit C

Key Personnel

Carl Einberger, Project Manager

Tim Flynn, Project Principal

Dan Haller, Water Rights

Seann McClure, Project Hydrogeologist

Aaron Pruitt, Project Hydrogeologist

Russell Porter, Water System Planning and Engineering - Gray & Osborne

WATER CAPITAL PROJECT OR PROGRAM

SOURCE OF SUPPLY IMPROVEMENT PROJECT

CIP Project ID:	WAT17001CIP	**Total Project Budget:**	$2,622,644
Department:	Water	**Estimated Expenditures:**	$223,626
Project Status:	Analysis	**Remaining Project Budget:**	$2,399,018
Project Location:	Multiple Locations	**Percent Complete:**	7%
Project Contact:	Jeff Hamlin	**Email:**	jhamlin@snoqualmiewa.gov

Project Description:

This project will study methods to procure an additional source(s) of water supply and/or increase the capacity of existing sources, including but not limited to, the implementation of an Aquifer Storage and Recovery (ASR) program. Following the study, the City intends to implement the recommendations as specified and with Council approval.

Project Status:

Photo or Map:

Project Budget:

Pre-2021 Project Budget (A):	$	139,496
2021-2022 Project Budget (B)[1]:	$	249,148
2023-2028 Project Budget (C):	$	2,234,000
Pre-2021 Expenditures (D):	$	139,496
2021-2022 Expenditures (E):	$	43,536
2023-2028 Expenditures (F):		
Outstanding Contract Value (G):	$	40,594
Other Projections (if necessary) (H):	$	-
Estimated Expenditures (I = D:H):	$	223,626
Remaining Project Budget (J = A + B + C - I):	$	2,399,018

Project Schedule:

Project Stage:	Analysis	Design	Construction	Close Out

% of Stage Completed:	81%
% of Project Completed:	7%

Contracts[2]:

Description	*Type*	*Contractor*	*Contract Value*	*Project-to-Date Expenditures*	*Outstanding Contract Value*
Analysis	Original	Aspect Consult.	$ 59,167	$ 59,167	$ -
Analysis	Amend. No. 1	Aspect Consult.	$ 29,917	$ 29,917	$ -
Analysis	Amend. No. 2	Aspect Consult.	$ 93,560	$ 87,966	$ 5,594
Analysis	Amend. No. 3	Aspect Consult.	$ 35,000	$ -	$ 35,000
		TOTAL =	$ 217,644	$ 177,050	$ 40,594

Other Expenditures:

Description	*Project-to-Date Expenditures*
Staff Labor	$ 5,460
Other	$ 523
TOTAL =	$ 5,982

[1] Estimated following the end of the 2021-2022 biennium. Any unused budget is typically rolled over into the next biennium.

[2] All numbers include sales tax.