



Exhibit A
Scope of Work
Niawiakum Bridge Replacement Project

OBJECTIVE

The objective of this Agreement is to provide the professional services necessary to prepare the 30% Design and Permits for the Niawiakum Bridge Replacement Project.

In order to accomplish this objective, we have assembled a team of experts to accomplish the variety of tasks listed below, including Watershed Science and Engineering to complete the Hydraulic Analysis, Aspect Consulting to complete the Geotechnical Analysis, Osborn Consulting, Inc. to complete the Stormwater Analysis, and Widener and Associates to perform the environmental documentation.

Upon completion of the 30% Design, the contract will need to be supplemented to include necessary Environmental Services and Final Plans, Specifications, and Estimate (PS&E). Completing the 30% Design before scoping this work allows us to assemble a more appropriate scope of work for the design phase and account for the environmental impacts identified as a part of the 30% Design.

SERVICES

Sargent Engineers and its subconsultants will work in coordination with Pacific County (the County) to prepare the 30% Design for the replacement of the Niawiakum Bridge carrying S Bend Palix Road over the Niawiakum River.

In order to accomplish this, Sargent will rely on the County's Surveying Group to perform the necessary surveying and provide base mapping and survey in Civil 3D format. The file will include topographic contours and TIN used for contour generation. Sargent will coordinate with the County's Surveying Group and assist as necessary to ensure the end product takes all relevant factors into account.

Sargent Engineers and its subconsultants will perform the following tasks:

1. Project Management

Sargent Engineers will maintain an open line of communication with the County throughout the project to ensure that project needs are being met and to discuss key decisions as the project develops.

Sargent Engineers will arrange and manage the subconsultant contracts, and will coordinate subconsultant activities to ensure the project team remains on schedule and provides a quality product. Sargent Engineers will provide monthly invoicing of all consultant and subconsultant project work, along with brief progress descriptions.

Sargent Engineers shall hold up to two video conference meetings for this portion of the contract to discuss, review, and share information. One meeting will occur at the start of the project to exchange data and discuss the project requirements and goals.

Assumptions:

- All meetings will be virtual and none will be in-person.

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- Sargent principal and/or staff engineer will participate in meetings.

Deliverables:

- Monthly invoices and progress reports.

2. Hydraulic Analysis

Watershed Science & Engineering (WSE) will be retained by Sargent Engineers to provide hydraulic engineering services for the Niawiakum Bridge Replacement Project. WSE will lead the hydraulic engineering portions of the project by completing the following tasks:

A. Data Collection and Review

WSE will collect and review existing data and information required to complete the hydraulic investigation. Data will include, but not be limited to; river discharge data and flood frequency estimates, tidal records, current and historical aerial photographs, FEMA Flood Insurance Study (FIS) data, LiDAR and topographic data, bridge as-built plans, bridge inspection and maintenance reports, soil log data, and anecdotal information on past flood events.

Assumptions:

- Materials are available and can be obtained with reasonable effort.
- Pacific County Public Works (County) will provide existing bridge plans and maintenance reports as well as relevant anecdotal information.

B. Site Inspection and Survey Coordination

WSE's Senior and Staff engineer will travel to the project site to evaluate existing conditions in the vicinity of the bridge. This will include:

- Examining river channel and floodplain geomorphic characteristics, lateral migration and erosion activity, local scour, large woody loading and debris potential, stream bed sediment characteristics, and existing aquatic habitat features in the vicinity of the bridge.
- Examining bridge revetment characteristics.

Deliverables:

- A map detailing survey requested to support the hydraulic analysis. This will include survey of the existing bridge waterway, up to 6 channel cross sections, and a longitudinal profile of the river thalweg extending several hundred feet up and downstream from the bridge.

C. Hydrology

WSE will determine the 2-year, 25-year, 100-year, and 500-year annual instantaneous peak flood frequency design discharges using available stream gaging flow records (if they exist), flow data from a neighboring stream with similar basin characteristics transposed to the project stream, or published USGS regional regression equations.

D. Hydraulic Analysis

WSE will develop a HEC-RAS model of the Niawiakum River in the vicinity of the bridge crossing using LiDAR and cross section surveys. WSE will calibrate the model to known flow and highwater mark data if it exists and can be obtained. If it does not, WSE will use engineering judgement to select and adjust the model parameters. WSE will run the model to simulate the peak flows determined in Task C with both low and high tide downstream boundary conditions. The model will

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be used to help size the bridge waterway, to provide data required to evaluate lateral erosion and scour potential, and to develop scour countermeasures if they are required.

E. Channel Stability and Scour Assessment

WSE will determine if lateral erosion and/or local scour pose a threat to the new crossing. If they do, WSE will work with Sargent to address these hazards in the design.

F. Hydraulic Design Report

WSE will prepare a hydraulic design report to summarize and document the results of the investigation. It will include the recommended NBIS Scour Code rating for the new structure, a code that the County will need for their records. A draft of the report will be provided to the County and Sargent Engineers for review. Upon receipt of the comments, WSE will refine the report and submit a final version as a PDF.

Deliverables:

- Draft hydraulic design report (PDF).
- Final hydraulic design report (PDF).
- Scour Evaluation to include in the bridge file, which will include the recommended NBIS Scour Code.

G. Administration and Meetings

WSE will complete standard administrative duties such as frequent communication with Sargent Engineers, preparation of monthly invoices, and contract review. WSE will also participate in up to 2, 1-hour virtual meetings with Sargent and the County to discuss bridge options and analysis results.

3. Geotechnical Analysis

Aspect Consulting (Aspect) will be retained by Sargent Engineers to complete geotechnical explorations to characterize the subsurface conditions at the Site. They will utilize a variety of exploration techniques to optimize their efficiency and collect the data necessary for addressing the anticipated compressible/liquefiable soil hazards at the Site. Using the data from the explorations, they will complete geotechnical engineering analysis for supporting the design of the new single-span bridge. They will prepare and submit a geotechnical engineering report summarizing the results of their explorations, analyses, conclusions, and recommendations. Depending on the selected bridge alternative, additional geotechnical engineering may be required to support final design. They will complete the following tasks as a part of their scope of work.

A. Subsurface Investigation

Aspect will review available data at and near the Site, and coordinate and execute a geologic reconnaissance at the Site to observe the current conditions as well as to plan our subsurface explorations. Their reconnaissance will be performed by traversing the accessible portions of the Site and noting the slope and embankment inclinations and visible geologic features such as outcrops, scarps, vegetation patterns, drainage characteristics, and springs.

Aspect's subsurface explorations will consist of drilled soil borings and a cone penetration test (CPT) as described below. Their budget assumes we can coordinate and schedule the subsurface exploration activities to take place concurrently and over the course of 1.5 days. All field activities

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will be coordinated with the County and the appropriate Project stakeholders prior to the start of any work at the Site.

A minimum of 3 business days prior to their explorations, they will visit the Site to mark the exploration locations in white paint and/or stakes for planning and utility locating. Aspect will use the public one-call utility locating service and also subcontract with a private utility locating service to clear the proposed areas of exploration. Aspect should be provided with any drawings or other information available on utility locations within the limits of the Site. Aspect's fee does not include utility repair costs. They will take reasonable precautions to reduce the potential for damage to utilities; however, they do not assume responsibility for the cost of repairing utilities that are unmarked or incorrectly marked.

Aspect has assumed that a lane closure with traffic control will be required to facilitate the subsurface explorations. They will subcontract with a traffic control contractor, prepare and submit a Traffic Control Plan (TCP) to you for approval, and have their subcontractor execute the approved TCP during the subsurface exploration program.

Drilled Soil Borings

Aspect will advance two exploratory soil borings at the Site. They anticipate the borings can be located on either side of the existing bridge. The borings will be advanced using mud rotary drilling techniques from a truck- or trailer-mounted drill rig by a driller operating under subcontract to Aspect. Aspect will conduct density testing and collect samples in accordance with Standard Penetration Test (SPT) methods, in general accordance with ASTM International (ASTM) Method D1586 as well as collect relatively undisturbed samples using a thin-walled sampler (Shelby tube).

Aspect anticipates one of the borings will extend approximately 75 feet below the existing road surface or a minimum of 20 feet into dense, non-liquefiable soil or competent bedrock, whichever occurs first. The second boring will extend approximately 25 feet below the existing road surface and be utilized primarily for collecting data in support of potential embankment settlement and/or retaining wall evaluations. Their boring that is located on the west side of the bridge will be drilled in the roadway shoulder (if feasible) with samples collected to help inform stormwater infiltration feasibility.

The drilled soil borings will be supervised and logged by an Aspect field engineer or field geologist and used to directly observe subsurface conditions. Samples of the encountered soils will be collected for additional observation and laboratory testing. Cuttings generated by the soil borings will be drummed and hauled away. The borings will be backfilled with bentonite chips per Washington State Department of Ecology requirements and include surface patching to match the surrounding conditions (asphalt).

Cone Penetration Tests:

To augment the drilled soil borings and efficiently explore the subsurface conditions to a greater depth in anticipation of a significant thickness of relatively soft/loose alluvium at the Site, Aspect will subcontract with a CPT contractor to complete a CPT sounding to a depth of approximately 100 feet below the road surface or until refusal conditions are encountered, whichever occurs first.

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Tip resistance and friction sleeve resistance will be measured continuously in the CPT and seismic shear wave velocity measurements will be taken at 3.3-foot (1 meter) intervals. There will be no soil cuttings generated during the CPT sounding and upon completion, the nominally 1.5-inch diameter holes will be backfilled with bentonite-grout slurry in accordance with Washington Department of Ecology requirements.

Assumptions:

- Aspect assumes they can schedule and execute the drilled soil borings and CPT concurrently and over the course of 1.5 days to minimize travel and mobilization costs.
- All work will be within the existing right-of-way (ROW) or the County will secure rights-of-entry for Aspect staff and subcontractors to access private properties and complete any necessary coordination with the landowners prior to our explorations.
- Any permits other than standard drilling permits (such as right-of-way permits) will be provided by others.

B. Geotechnical Engineering Analyses

Aspect's engineering analyses will start with reducing the data gathered from their subsurface investigation program. Soil samples obtained from the explorations will be placed in air-tight containers and transported to Aspect's geotechnical laboratory for further examination. Selected samples will be submitted for laboratory testing of index and engineering properties. Tests may include natural moisture content; grain size distribution; consolidation testing; organic content; and Atterberg Limits.

Aspect will complete engineering analyses to assess the liquefaction potential of the Site soils, to identify suitable bridge foundation types and associated design parameters for axial and lateral resistance, suitable retaining wall types and design parameters, to evaluate the settlement potential of the Site soils under new embankment loads, to evaluate stormwater infiltration feasibility, and related design recommendations. Aspect's analyses will be completed in general accordance with the applicable County, WSDOT, and AASHTO LRFD criteria.

C. Reporting

Using the results of tasks A and B, we will prepare a draft geotechnical engineering report for the Project that will include the following:

- Project and Site description
- Results of the geologic reconnaissance and subsurface explorations.
- Exploration logs and a Site plan showing approximate exploration locations
- Laboratory test results.
- Seismic design considerations including liquefaction susceptibility and related hazards.
- Suitable bridge foundation types with corresponding axial and lateral design recommendations.
- Suitable retaining wall types with corresponding earth pressures and design recommendations.
- An assessment of settlement potential related to new embankment construction and design considerations.

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- A qualitative assessment of stormwater infiltration feasibility at the Site.
- Earthwork considerations, including:
 - temporary excavations.
 - construction dewatering.
 - imported structural fill and potential re-use of on-site soil as structural fill.
 - wet weather considerations.

Any review comments on Aspect's draft report provided by the design team will be addressed and the final report will be issued. They have assumed one round of report revisions in their scope where they assume Sargent Engineers will provide a consolidated set of written comments for resolution and incorporation into the final reports.

D. Project Management

Aspect will manage their work and that of their subcontractors. Aspect will correspond with the design team as needed with respect to contracts, insurance certificates, billing cycles, etc.

4. Stormwater Analysis

Osborn Consulting, Inc. (Osborn) will be retained by Sargent Engineers to assist with the stormwater design services for this project.

The stormwater design will include the following tasks:

- Review existing information including as-builts, wetland / stream reports, environmental documentation, geotechnical report, etc.
- Project limit and threshold discharge area (TDA) delineation, delineation of existing and developed surface areas.
- Assessment of stormwater minimum requirements, low impact development (LID), and water quality. Water quality BMPs will consider ESA requirements and recent Department of Ecology's 6PPD and 6PPD-quinone contaminant study findings.
- One site visit to review existing conditions and confirm stormwater facility siting.
- Preparation of 30% design stormwater plan and detail sheets. A separate stormwater general notes sheet will not be prepared. It is assumed that Osborn will contribute to the overall general notes sheet for stormwater notes.
- Preparation of 30% quantities and an Engineer's Estimate for stormwater elements.
- Preparation of a Stormwater Design Memorandum documenting the 30% stormwater design criteria, design, and supporting calculations.
- Coordination with Project Environmental and Permitting team on ESA requirements applicable for this project.
- Review and provide input to survey request, geotechnical investigation, and environmental permit documents provided by others.

Assumptions:

- The site visit will include two Osborn engineers to confirm Best Management Practice (BMP) siting and drainage patterns. All other meetings will be virtual.
- Osborn will attend up to two, 1-hour virtual meetings with Sargent and the County.

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- Osborn will assist with preparing pollution generating impervious surface (PGIS) tallies in support of environmental permitting. ESA consultation and environmental permitting will be completed by others. Osborn is not scoped to attend meetings with permitting agencies.
- Stormwater design will follow the Stormwater Management Manual for Western Washington (SWMMWW).
- Stormwater detention or flow control is not required. Stormwater design will include up to two water quality treatment BMP for treatment of new and replaced PGIS area to address ESA requirements anticipated.
- Stormwater conveyance, if necessary, will be minimal. No bridge drains or bridge stormwater piping will be necessary.
- TESC design will not be included in the 30% submittal. A SWPPP will also not be prepared for the 30% submittal.
- The Stormwater Design Memorandum will be a brief memorandum documenting the stormwater design, no more than 10 pages long, with attached exhibits illustrating existing and proposed stormwater conditions.
- Wetland hydroperiod analysis will not be necessary due to the extent/size of the wetland and tidal influences. HI-RUN analysis is not anticipated at this time, if required, it will not be completed by Osborn.
- Design effort includes 30% comment responses in excel format. Resubmittal of 30% plans and Stormwater Design memorandum is not included in the scope of work.
- The Level of Effort and scope assume one roadway/bridge design developed by Sargent Engineers.

Deliverables:

- 30% Stormwater- Plans and Detail Sheets.
- 30% Stormwater Estimate.
- Stormwater Design Memorandum.

5. Environmental Documentation and Permitting

Widener and Associates (Widener) will be retained by Sargent Engineers to perform the environmental documentation and permitting of the project. They will complete the following tasks as a part of their scope of work:

A. Design Assistance and Early Agency Coordination

Early input into the formation of project alternatives will be provided by Widener to ensure each alternative includes provisions to minimize impacts to the surrounding environment. This coordination within the various design elements of the project will identify and incorporate minimization measures early in the alternative development phase of the project and will ensure that an appropriate range of alternatives are developed prior to the agency coordination.

Sargent Engineers, with assistance from Widener and Associates, will assist the County in presenting the alternatives to both the state and federal permitting agencies (USFWS, NOAA, and FHWA) to identify the regulatory issues associated with each alternative. Potential minimization measures for each alternative will also be identified during the coordination with agency

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representatives. All permitting issues and the recommended permitting process for the preferred alternative will be documented in the project 30% Design.

It is assumed that this effort will be accomplished with the graphics and design drawings required to complete the 30% design and to conduct the open houses and that no other special presentation materials are required.

Deliverables:

- Widener will prepare meeting minutes and memoranda documenting the coordination activities with state and federal agencies, as required.

B. Wetland Delineation

The purpose of the wetland report is to identify jurisdictional wetland within the project corridors of Niawiakum River and the proposed alignment. Widener shall develop, implement, and complete field surveys to identify and delineate wetlands in the project area using the appropriate methods described in the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987), Wetlands Research, Technical Report Y-87-1, January 1987. Widener shall delineate wetlands within project area.

Widener shall prepare a comprehensive report that includes detailed wetland maps, documentation of survey methods, results, potential impacts from project actions, and recommendations for wetland protection and mitigation. The report also shall contain appropriate forms for wetland identification, delineation and function assessment required by the Army Corps of Engineers (USACE). The information in this report is intended for use in compliance with Section 404 of the Clean Water Act. The final report and associated documents shall be in a format acceptable to the USACE.

Delineated wetland boundaries shall be identified on the ground with flagging. The delineated wetland boundaries shall be mapped with accuracy acceptable to the USACE.

Deliverables:

- Electronic copy of a draft Wetland Delineation Report for review by County with accompanying draft special provisions if required.
- Electronic copy of a draft Wetland Delineation Report, incorporating the County's comments, for submittal to USACE.
- Electronic copy of a revised draft Wetland Delineation Report, incorporating comments by USACE, for submittal for approval.

C. Section 106 Report (Cultural and Historic Resources)

This work would include the preparation of the Section 106 report in accordance with the State Historic Preservation Office standards and guidelines. The work will include the following subtasks.

- Pertinent literature on the archaeology, ethnography, and history of the project area will be reviewed to determine the existence of archaeological sites and to refine the probability of archaeological resources and traditional cultural places in the project areas.

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- Widener will maintain contact with the local tribes for any information on historic Indian use of the project area.
- A systematic field reconnaissance will be conducted to identify previously recorded and/or unrecorded archaeological sites for the proposed project where ground-disturbing activities are expected to take place. Field reconnaissance will consist of the traverse of pedestrian transects at varying intervals, depending on terrain throughout the proposed project area. Shovel probes (digging a hole with a shovel) will be excavated, as deep as feasible, and in areas expected to have a high probability for cultural resources. Shovel probes will be augmented through auger probes to explore the deepest possible deposits. Shovel probes will be screened in highly probable areas and in soil matrixes too dense to identify small chipping debris.
- All new sites will be mapped, photographed, and recorded on Washington State Archeological Inventory forms and submitted to the state Office of Archeological and Historic Preservation (OAHP) for Smithsonian-numbers. Every effort will be made to include Tribal cultural resources personnel in assisting the field effort. Rights-of-entry will be provided by the City.

Deliverables:

- One (1) electronic PDF of a draft Section 106 Report will be prepared to describe cultural resources identified in the project area to meet state and federal standards for reporting as outlined in the guidelines provided by the OAHP. The report will include summary background information appropriate to a cultural resources assessment of the project area, including environment, previous cultural resources studies, ethnography/ethno history, and history. A discussion of agency and Tribal consultation, methodology, the results of the investigation, and a map of located archaeological sites will be provided. Recommendations will also be extended to any cultural resources that may be significant. Monitoring of construction excavation recommendations may also be included. The historic structures inventory form and/or archaeological site inventory form will be attached to the report as an appendix.
- One (1) electronic PDF of a revised draft Section 106 report incorporating County comments.
- Three copies of a final Section 106 report incorporating FRA and FHWA/WSDOT comments.

D. Biological Assessment (BA)

A BA will be prepared for the preferred alternative in accordance with WSDOT guidelines. The following subtasks will be undertaken in preparation of the project BA.

- Collect available documentation concerning the project activities and pertinent biological information. Biological information will include priority habitat and species data from the Washington State Department of Fish and Wildlife along with rare plant and high-quality ecosystem data from WDNR. This information will be reviewed, and a consultation strategy will be developed.
- Initiate informal consultation with United States Fish and Wildlife Service (USFWS) and National Oceanographic and Atmospheric Administration (NOAA) Fisheries by preparing written requests for lists of endangered, threatened, proposed, and candidate species.
- Conduct a field reconnaissance to investigate on-site habitat conditions.

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- Make telephone contact with the appropriate resource agency staff for input on species occurrence, habitat use, and potential project impacts.
- Prepare a draft BA addressing listed species, proposed species, candidate species, species of concern, and critical habitat. The BA will include a project description, a list of species, a description of the species and their habitat, an analysis of project effects, and mitigation recommendations.
- Provide the draft BA to the County for review and approval.
- Revise the BA, as appropriate, and submit the final BA to USFWS and NOAA Fisheries for their review, possible negotiation of mitigation measures, and concurrence.
- Concurrent with Endangered Species Act (ESA) consultation, Widener will coordinate with NOAA Fisheries to meet essential fish habitat (EFH) requirements under the Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended 1996. In doing so, Widener will provide NOAA Fisheries with the BA and a cover letter requesting the initiation of consultation, stating the effect determination(s), reasoning behind them, and proposed mitigation measures if any.
- If NOAA Fisheries responds with advisory EFH conservation recommendations, Widener will coordinate with the County and FHWA to jointly discuss the recommendations.
- Formally address and respond to NOAA Fisheries' recommendations within the regulated time frame.

Deliverables:

- Electronic copy of a draft BA for review by County with accompanying draft special provisions if required.
- Electronic copy of a draft BA, incorporating the County's comments, for submittal to FHWA/WSDOT.
- Electronic copy of a revised draft BA, incorporating comments by FHWA/WSDOT, for submittal to NOAA Fisheries and USFWS.
- Electronic copy of a final BA that incorporates NOAA Fisheries and USFWS comments.

E. Environmental Justice

Services required to complete an environmental justice (EJ) analysis includes the following main components:

- Collecting demographic data for the project area using local data sources and the US Census Data.
- Identifying any environmental justice populations in the area (minority or low-income populations).
- Review public outreach activities to ensure potential EJ populations are offered an opportunity to participate in project planning and decision-making.
- Identifying any potential disproportionate effects to EJ populations from project activities and identifying how impacts could not be avoided or minimized and what mitigation measures could be implemented.

Deliverables:

- Electronic copy of the draft EJ documentation will be provided.

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- Electronic copy of the final EJ documentation will be provided incorporating County comments.
- Electronic Copy EJ documentation will be provided incorporating WSDOT/FHWA comments if required. It is assumed that WSDOT/FHWA comments will not alter the basic conclusion of the documentation or require further alternative studies.

F. NEPA CE

Services will be provided to prepare a NEPA Categorical Exclusion Documentation Form (CE) with supporting documentation as required by FHWA and FRA. The CE will include the recommended NEPA determination (assumed to be a Documented Categorical Exclusion).

The project will be determined to be a Documented Categorical Conclusion and neither a NEPA Environmental Impact Statement nor an Environmental Assessment will be required.

Deliverables:

- Electronic copy of the draft ECS will be provided.
- Electronic copy of the final ECS documentation will be provided incorporating County comments.
- Electronic copy of the final ECS documentation will be provided incorporating FRA and FHWA/WSDOT comments if required. It is assumed that FRA and FHWA/WSDOT comments will not alter the basic conclusion of the documentation or require further alternative studies.

G. SEPA

The Consultant shall complete appropriate SEPA documentation including all needed studies, modeling, and analysis in accordance with State Environmental Policy Act (RCW 43.21C) and SEPA Rules (WAC 197-11). Widener will coordinate with the County to address comments on the SEPA Checklist and provide support for the SEPA process.

Deliverables:

- SEPA Checklist

H. Wetland Mitigation Plan

Widener shall develop and complete a wetland mitigation plan in accordance with Wetland Mitigation in Washington State Part 1: Agency Policies and Guidance guidelines. The information in this report is intended for use in compliance with Section 404 of the Clean Water Act. The final report and associated documents shall be in a format acceptable to the Army Corps of Engineers (COE).

Deliverables:

- Draft Wetland Mitigation Plan.
- Final Wetland Mitigation Plan.

6. Civil/Structural Analysis

Sargent Engineers will perform the following tasks to develop the 30% Design for the replacement structure, as well as coordinate the work of the subconsultant design team:

A. Site Reconnaissance and Data Collection

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Sargent Engineers staff will visit the site to collect information regarding existing/adjacent structures and other site features that may impact the project. The County-provided survey will be imported and used as a base map for the project, and any available traffic count data and detour routes will be examined.

Assumptions:

- The County will obtain any needed rights of entry to allow Sargent to access lands both upstream and downstream from the crossing.

B. 30% Design

Upon completion of the geotechnical, hydrologic, and hydraulic efforts, Sargent will use the topographic survey and base map of the site (provided by the County) to prepare schematic plans for one potential option for a two-lane bridge. This set of schematic plans will include the preliminary bridge alignment and layout, the proposed superstructure and substructure construction, the streambed configuration, and any additional necessary features (retaining walls, wetland mitigation, bridge barriers and approach rails, etc.). Stormwater and drainage geometry will be reviewed/performed by Osborn Consulting (see Task 4 above). The bridge and roadway layout will incorporate the requirements of the WSDOT Local Agency Guidelines, WSDOT Bridge Design Manual, the Pacific County Road Standards, and WDFW Water Crossing Design Guidelines.

Assumptions:

- The County will have 4 weeks to review the schematic plans and estimate in order to provide comments.
- Design effort includes 30% comment responses in excel format. Resubmittal of 30% plans is not included in the scope of work.

Deliverables:

- Preliminary plans and layout for a two-lane bridge option.
- Preliminary construction cost estimate for a two-lane bridge option.

The County will use the 30% design and estimate to coordinate with Local Programs to adjust for any expected shortfalls in the funding for this project. Upon completion of the 30% design, this contract will need to be supplemented in order to include the work associated with the final preparation of the Plans, Specifications, and Estimate, including, but not limited to, final structural/civil design, final stormwater design, and necessary additional permitting efforts.

Exhibit D
Consultant Fee Determination

Project: Niawiakum Bridge Replacement 30% Design

Salary Cost					
		Senior Project Engineer	Project Engineer	Design Engineer	
Task	Principal				Task Cost
Rate:	\$203.00	\$160.00	\$148.00	\$108.00	
Project Management	40				\$8,120
Project Meetings	20				\$4,060
Site Reconnaissance and Data Collection					
Site Visit	8	8			\$2,904
30% Design					
Investigate Retaining Wall Options	16	32			\$8,368
Roadway Layout	12	24			\$6,276
Preliminary Layout of One Bridge Options	16	32			\$8,368
Prepare One Schematic Plan and Elevation	16	32			\$8,368
Prepare Preliminary Cost Estimate	8	16			\$4,184
Permit Assistance	20				\$4,060
Total Hours	156	144	0	0	
Total Salary Costs					\$54,708
Reimbursables					
Mileage	300 miles @		\$0.625		\$188
Subconsultant Costs					
Hydraulic Services					\$27,766
Geotechnical Services					\$48,500
Stormwater Services					\$65,714
Environmental Permitting Services					\$152,200
Grand Total					\$349,076
Prepared By: Scott Olson				Date: October 17, 2022	



WATERSHED SCIENCE & ENGINEERING

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Estimate of Professional Services

Prepared for: Pacific County
Project: Niawiakum Bridge Replacement
Date: September 5, 2022
Prepared By: Chris Frei

Uses WSDOT Approved Overhead Rates

TASK DESCRIPTION	Hours							Totals
	Prin	Sr. Eng. I	Sr. Eng. II	Staff Eng.	Jr. Eng.	Sr. Geomorph	Contract Admin	
1. Data Collection and Review			4	8				\$1,609
2. Site Inspection and Survey Coordination			10	12				\$3,110
3. Hydrology			4	16				\$2,520
4. Hydraulic Analysis	4	2	16	40				\$8,633
5. Channel Stability and Scour Assessment	4		8	16				\$4,129
6. Hydraulic Design Report	2	2	24	8				\$5,925
7. Meetings and Administration			8				3	\$1,653
Total Hours and Direct Labor Cost (DL)								
	10.0	4.0	74.0	100.0	0.0	0.0	3.0	
Direct Labor Rate (\$/hr)	\$81.73	\$67.31	\$62.50	\$40.87	\$37.02	\$52.88	\$31.06	
Overhead (148.81%)	\$121.62	\$100.16	\$93.01	\$60.82	\$55.09	\$78.69	\$46.13	
Fee (30%)	\$24.52	\$20.19	\$18.75	\$12.26	\$11.11	\$15.86	\$8.30	
Labor Rate (\$/hr) (OH 150.07% and 30% fee)	\$227.87	\$187.67	\$174.26	\$113.95	\$103.22	\$147.43	\$86.43	
TOTAL LABOR COST	\$2,279	\$751	\$12,895	\$11,395	\$0	\$0	\$259	\$27,579

Direct Expense Detail

	Units	Rate	Cost
Mileage	300	\$0.625	\$187.50
		Total	\$187.50

Cost Summary

Total Labor	\$27,579
Total Direct Expenses	\$188
Total	\$27,766

Cost Estimate

We propose to complete this scope of work on a cost plus fixed fee basis in accordance with our all-inclusive billing rates summarized on the attached Actuals Not to Exceed (ANTE) Table with a budget of \$48,500. A breakdown of our budget estimate, on a per-task basis, is shown below.

There are opportunities for budget reductions if the Project stakeholders can provide traffic control services during the subsurface investigation program. We are available to discuss revisions to our proposed scope and budget.

Task	Aspect Labor	Subs¹/ODCs²	Total
Task 1 – Subsurface Investigation	\$7,730	\$19,741 ³	\$27,471
Task 2 – Geotechnical Engineering Analyses	\$9,243	\$3,548 ⁴	\$12,791
Task 3 – Reporting	\$6,510	-	\$6,510
Task 4 – Project Management	\$1,728	-	\$1,728
TOTALS:	\$25,211	\$23,289	\$48,500

Notes:

1. Subs include a drilling subcontractor, CPT subcontractor, private utility locator, traffic control services, and analytical laboratory.
2. ODCs include field vehicle, mileage, 1 night of lodging and per diem, GPS equipment, etc.
3. Includes \$9,057 for drilling subcontractor; \$5,256 for CPT subcontractor; \$4,025 for traffic control services; \$633 for private utility locator; \$771 for Aspect ODCs.
4. Lab testing subcontractor.

30/12/2022

Exhibit B

Project Name Niawiakum Bridge Replacement
Client Sargent - Scott Olson
Location Pacific County **Date** 10/1/2022

	Project Manager	Senior Biologist	Project Biologist	
1.1 Project Design and Environment Coordination	80	24	8	
1.2 Wetland Delineation				
Draft	16	24	60	
Final	8	7	24	
1.3 Section 106				
Draft APB	2		12	
Final APE	2		4	
Draft Report	2	8		
Final Report	2	4		
1.4 Biological Assessment				
Draft	40	30	240	
Revised Draft by WSDOT	24	24	80	
Revised Final Per FHWA comments	24	24	40	
NOAA/USFWS comments	24	24	40	
1.5 Environmental Justice				
Draft	8		32	
Revised Draft	2		16	
Final	2		8	
1.6 NEPA CE				
Draft	16	10	40	
Final	8	2	16	
1.7 SEPA				
Draft	4	8	24	
Final	2	2	8	
1.8 Wetland Mitigation Plan				
Draft	24	40	60	
Final	12	24	24	
Total hours	302	255	736	
Summary	Hours	DSC Rate	Cost	
Project Manager	302	\$74.00	\$22,348.00	
Senior Project Manager	255	\$55.00	\$14,025.00	
Project Biologist	736	\$32.00	\$23,552.00	
Section 106 Consultant			\$7,500.00	
Mileage and expenses			\$880.00	
Total Labor			\$59,925.00	
Overhead 110%			\$65,917.50	
Profit 30%			\$17,977.50	
TOTAL ESTIMATED COST			\$152,200.00	
Widener & Associates				Cowling & Co. LLC