Puyallup Tribe of Indians

PROFESSIONAL SERVICES CONTRACT

This Agreement, dated November 3, 2014, is entered into between the Puyallup Tribe of Indians, a federally recognized Indian Tribe (hereafter "TRIBE") through the Puyallup Tribal Council (hereafter "Council"), and Natural Systems Design (hereafter "CONSULTANT").

The two contracting Parties to this Agreement agree as follows:

1. RESPONSIBILITIES OF THE CONSULTANT

1.1. The CONSULTANT shall be responsible for conducting the statement of work, attached as Exhibit A.

1.2. The CONSULTANT shall be ultimately responsible to the COUNCIL, and shall perform contracting services under the immediate direction of Bill Sullivan, Director of Natural Resources, and Char Naylor, Tribal Water Program Manager.

1.3. The CONSULTANT shall provide the TRIBE with monthly statements of work performed, itemizing tasks performed, to the Tribe's Water Program Manager.

1.4. The CONSULTANT agrees that they shall not at any time, either during or following the term of the contract, reveal to anyone other than the COUNCIL, staff, attorneys, members, and such others as the TRIBE may approve, any information about or which concerns the TRIBE, including data generated or work products resulting from their work with the TRIBE other than routine information which is already public information, unless directed to do so by the TRIBE.

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2. RESPONSIBILITIES OF THE TRIBE

2.1. The TRIBE shall be responsible for the overall management of the project(s) detailed in the statement of work and the coordination of the consultant with the needs of the project.

2.2. The TRIBE shall designate a Contract Representative to serve as project manager to oversee the quality and quantity of work billed to this contract by the consultant. Until notified otherwise, TRIBE designates the TRIBE'S Water Program Manager, Char Naylor, to serve as contract representative.

2.3. The TRIBE shall be responsible for determining whether work product prepared by the CONSULTANT is complete and shall promptly notify the CONSULTANT of any corrections needed in work product.

2.4. In the event of a dispute of questions of fact or interpretation regarding this Agreement, the TRIBE and CONSULTANT agree to meet and attempt to negotiate a resolution. If the TRIBE and the CONSULTANT are unable to resolve the dispute at this stage, the dispute will be submitted to formal mediation with a mediator mutually agreed upon by the TRIBE and CONSULTANT. The TRIBE and CONSULTANT will share the cost of formal mediation equally.

3. NATURE OF WORK AND OWNERSHIP OF PRODUCT

3.1. All finished or unfinished written documents, photographs, maps, data, models, computer disks and reports prepared by the CONSULTANT under this AGREEMENT are the property of the TRIBE after payment to CONSULTANT and shall not be used by the CONSULTANT for any other purpose without the written approval of the TRIBE.

3.2. Consultant shall not be held liable for reuse of documents or modification of the subject data thereof, including documents on electronic media, by the Tribe or its representatives, for any purpose other than the original intent of this Agreement.

3.3. The CONSULTANT is an independent contractor under this Agreement and is not deemed to be an employee of the TRIBE.

3.4. No assignment of this Agreement, in whole or in part, may be made by the CONSULTANT without the prior written consent of the TRIBE.

3.5. CONSULTANT's work performed on behalf of the TRIBE pursuant to this Agreement will be executed in good faith and will meet prevailing customary and professional standards to the environmental consulting and engineering industry. The TRIBE agrees not to hold CONSULTANT liable for unforeseeable or undetectable circumstances or events beyond the reasonable control of consultant that may affect the quality and reliability of work performed by CONSULTANT (and professional associates and consultants of CONSULTANT) on behalf of the TRIBE.

4. CONFLICT OF INTEREST

4.1. It is understood that the CONSULTANT may enter into contracts with others during the term of this Agreement. CONSULTANT will identify any actual, perceived or potential conflict of interest as it relates to the scope of work incorporated herein. CONSULTANT agrees to notify the TRIBE'S Contract Representative of any conflict of interest at the time of discovery of such conflict, or potential conflict of interest.

4.2. It is also understood that the parties will work in good faith to resolve such potential conflicts to their mutual satisfaction.

5. CONSULTANT PAYMENT

5.1. For services furnished to complete the statement of work, attached as Exhibit A, the TRIBE shall pay the CONSULTANT a total amount of $129,109. The project budget is detailed in Exhibit A.

5.2. The CONSULTANT shall provide the TRIBE with a monthly invoice and a brief summary of the work performed, for tasks outlined in the Statement of Work, as attached in Exhibit A, to the Tribe's Water Program Manager.

5.3. The amount of each invoice will be determined based on the percentage of the scope of work completed during the invoice period.

5.4. The TRIBE agrees to pay the CONSULTANT within thirty (30) days of receipt of the CONSULTANT'S monthly invoice for all approved work.

5.5. CONSULTANT shall indemnify and hold the TRIBE harmless from any and all costs, liabilities, or obligations by reason of the failure of CONSULTANT or his or her employees, agents, subcontractors or assigns to comply with any applicable law.

5.6. CONSULTANT shall indemnify and hold harmless the TRIBE, its employees and agents against all loss, damage, liability, or costs to the extent arising out of the CONSULTANT's negligence in connection with this Agreement. CONSULTANT shall reimburse the TRIBE for all costs reasonably incurred to defend the TRIBE against such claims through attorneys of TRIBE'S choice, but only to the extent of Consultant's negligence.

5.7. The TRIBE shall indemnify and hold harmless CONSULTANT, its employees and agents against all loss, damage, liability or costs to the extent arising out of the TRIBE'S negligence in connection with this Agreement. The TRIBE shall reimburse the CONSULTANT for all costs reasonably incurred to defend CONSULTANT

against such claims through attorneys of CONSULTANT'S choice, but only to the extent of the Tribe's negligence.

6. DURATION, TERMINATION, AND NOTICE

6.1. The Term of this Agreement shall be from the date identified above through November 1, 2015 at 5:00 p.m. This Contract may be terminated at any time by the TRIBE by giving seven (7) calendar days written notice of termination. This contract may be terminated at any time by the CONSULTANT for cause by giving seven (7) calendar days written notice of termination. The TRIBE shall remain obligated to compensate the CONSULTANT for all services provided before termination of the CONTRACT. The Term of this Agreement may be extended by mutual agreement of the TRIBE and CONSULTANT.

6.2. Upon termination or expiration of the term of this Agreement, whichever occurs first, the CONSULTANT shall stop work and deliver to the TRIBE all work product materials and drafts in CONSULTANT'S possession within five working days and the CONSULTANT shall provide the TRIBE with an invoice for all work completed in accordance with Section 5 above.

6.3. Any formal notice provided under this Agreement shall be made as shown below:

To the CONSULTANT:
Mike (Rocky) Hrachovec, P.E.
Natural System Design
1900 N Northlake Way # 211Seattle, Washington 98103
Facsimile: (206) 268-0112 Email: Mike (Rocky) Hrachovec
[rocky@naturaldes.com]
Facsimiles and e-mails shall be deemed original documents.

To the TRIBE:

Char Naylor

Puyallup Tribe of Indians

3009 E. Portland Ave

Tacoma, Washington 98404

Facsimile: (253) 680-5520

Email: char.naylor@puyalluptribe.com

Facsimiles and e-mails shall be deemed original documents.

6.4. This Agreement represents the entire agreement between the TRIBE and the CONSULTANT and may be amended only in writing and signed by both parties.

The undersigned have executed this Agreement on the dates indicated below their respective signatures.

PUYALLUP TRIBE OF INDIANS	**CONSULTANT**
_____	_____
Bill Sterud, Council Chairman	
_____	_____
Date	Date

Exhibit A: Statement of Work and Budget

PROJECT UNDERSTANDING AND RESTORATION APPROACH

Upper Clarks Creek and its tributaries are in a state of imbalance between sediment supply and sediment transport capacity triggered by historical land use impacts such as channelization, timber harvest and urbanization. This imbalance has resulted in substantial channel incision. Excess sediment production from the incised channel segments has created maintenance issues for hatchery operations downstream and adversely impacted salmonid habitats and water quality in Lower Clarks Creek. The Puyallup Tribe facilitated development of a Sediment Reduction Action Plan for Clarks Creek in 2013 that described 23 proposed projects to reduce upland and in-channel sediment sources with a primary goal of reducing sediment loads in Clarks Creek by 50% over a 20-year period (Puyallup Tribe, 2013). The two project sites addressed in this proposal were prioritized in the action plan given the high sediment production per unit area for these in-channel sources (Pr05 and Pr06). PR05 refers to the upper Clarks Creek channel stabilization project and PR06 refers to the upper Clarks Tributary channel stabilization project. The locations of these projects are shown on the figure attached to this statement of work. PR05 and PR06 are located on Washington State Department of Fisheries land (Pierce County Tax Assessor Parcel #0420324000).

The primary objectives of the proposed project are to:

- Stabilize the 12-foot high headcut at the upper end of site Pr05;
  - Construct grade control and channel roughness elements in the incised segments of sites Pr05 and Pr06;
  - Stabilize loose gravels sloughing from the valley wall in the incised channel segments;
  - Reduce sediment loadings to the state hatchery intake pond and downstream salmonid habitats; and
  - Improve water quality in Clarks Creek.

NSD reviewed background information provided with the RFP and completed a site reconnaisance on July 3, 2014 to evaluate geomorphic characteristics of the stream corridor. Based on this preliminary review and reconnaisance, this proposal outlines an approach that will develop process-based solutions to address the project objectives. Our proposed approach will focus on restoring the fundamental role of wood in partioning shear stress and regulating sediment transport through the confined channel segments of Upper Clark's Creek and its tributary channel.

The Clark's Creek watershed is a classic example of sediment budget issues common throughout the urbanizing

Headcut at upstream end of treatment reach for site Pr05.

Unvegetated hillslope deposits sloughing gravel into channel below.

Dry creek channel at site Pr05 with approximately 10-foot high scarp indicating the likely pre-incision valley bottom.

Figure 1. Site photos from NSD's field reconnaissance at Clarks Creek.

areas of the Puget Lowland. The upland plateau in which headwater areas are located is underlain by unconsolidated glacial deposits that are highly erodible when subject to the shear stress exerted by channelized flow in confined valley segments. After retreat of the continental glaciers which scoured the Puyallup River valley, upland drainages experienced a period of rapid erosion until forests developed. Prior to logging and urbanization, the forests in the watershed helped reduce overland flows and stabilized hillslopes and banks. Trees delivered wood to the channels and added roughness features that facilitated the storage of sediment and creation of floodplains in the steep, narrow valley where such features would not have otherwise developed. Forest clearing for timber harvest in the watershed removed the fundamental elements providing resilience to erosion. In addition, historic straightening (and base level lowering) of the Puyallup River prompted incision up Clarks Creek, and urbanization in the watershed has increased the creek's peak flows. Together, these changes initiated erosion and triggered a period of major incision and valley instability.

Incision and increased sediment supply have had a significant impact in the proposed project areas as well as downstream. Currently, it appears that the primary sediment supply from the proposed project areas is from steep vertical and failing valley walls previously undermined by the channel head cut (Puyallup Tribe, 2013).

Restoration activities within the proposed project areas will, to the maximum extent practicable, restore natural stream function subsequently increasing erosion resilience and sediment storage capacity. By reducing sediment loads and attenuating peak flows, the restoration activities will also assist in meeting water quality objectives for dissolved oxygen and sediment (Clarks Creek Dissolved Oxygen and Sediment TMDL), pathogens, nutrients and toxics, reduce elodea growth, protect upstream infrastructure, and improve downstream habitat for salmonids and hatchery performance. The proposed project areas are currently not available to salmonids due to a passage barrier created by the intake dam for the WDFW hatchery.

RESTORATION APPROACH

The Integrated Streambank Protection Guidelines (ISPG) will be used to screen and identify the appropriate bed and bank stabilization methods. Preliminary site evaluation and review of Matrix 2 (ISPG) indicates this site may be well-suited for use of an engineered log jam for bed stabilization, which is identified as appropriate for a degrading reach. Our design would utilize numerous complex, full-spanning large wood structures throughout the project reach to stabilize existing sediment in the channel bed and banks and store incoming sediment from upstream and upslope. Bioengineering approaches incorporating native shrubs and trees would be implemented within these structures to add root mass and boost evapotranspiration to provide long-term stability of the native materials while also improving forest health. Wood installed within the bed and spanning through the active channel would be interlaced and comprised of multiple layers of large wood and slash to provide flow resistance and partition shear stress of incoming flows, reducing the ability of the stream to erode adjacent sediment as well as triggering aggradation within the structures. Research shows that even small quantities of large wood cover of a streambed (i.e. less than 2%) can provide roughly half of the total flow resistance in a stream (Manga and Kirchner, 2000).

In deeply incised areas, we will examine the feasibility of additionally filling the incised channel to reduce channel grade, arrest the headcut, reconnect the floodplain, raise the water table, provide water quality benefit, and buttress adjacent steep eroding banks. Hyporheic flow within the fill material would provide filtering and water quality improvement. The internal structural skeleton of the fill would primarily consist of logs, to simulate the natural condition that once existed.

We will use the ISPG to select bank protection methods suitable for the site. Preliminary site review and review of Matrix 2 (ISPG) indicates that a likely candidate may be log cribwalls with a bioengineered approach incorporating native vegetation to stabilize adjacent steep, eroding hillslopes composed of unconsolidated glacial outwash. A site survey and geotechnical analysis will determine specific mechanisms of slope instability and prioritize unstable slopes based on sediment input to the channel. Subsurface drains will be evaluated for their ability to dewater the slopes and whether toe and/or slope stabilization efforts will stabilize the slope sufficiently to significantly reduce

sediment generation. The degrading channel and slope conditions found on Clark's Creek are common within urban areas of the Puget Sound; our goal is to work in a transparent and inclusive manner to identify cost-effective design approaches for this project such that it can serve as a model for future work by the Tribe and/or other stakeholders.

METHODS USED AND SCOPE OF WORK

TASK 1 – SITE EVALUATION AND REVIEW OF EXISTING INFORMATION

NSD will assess Upper Clarks Creek and Upper Clarks Creek tributary to identify and describe the specific mechanisms of failure and channel instability according to the ISPG protocol, particularly referring to Table 2-1, "Mechanisms of Failure", the Site Characterization Checklist (Table 2-2) and mechanisms of failure that have thrown the reach into disequilibrium and associated reach-based causes as outlined in Table 3-1. The team will conduct a detailed review of previous investigations completed as part of the Clarks Creek Sediment Reduction Action Plan and other relevant studies such as the Clear/Clarks Creek Basin Plan, Clarks Creek TMDL and Water Quality Implementation Plan, and stormwater planning documents. Site hydrology will be characterized based on available information and considerations for potential hydrologic changes from future development in the upper watershed. Hydraulic information, including results from the HEC-RAS model prepared for the sediment study, will be used to understand general hydraulic characteristics of Clarks Creek within the project reach. In addition, our initial site reconnaissance for scoping this proposal observed a new development that has just cleared a large parcel along Fruitland Avenue for residential development. This task will include time to research and evaluate development plans for the upper basin in the context of rainfall-runoff modeling output completed as part of the Sediment Reduction Action Plan (Appendix D – Watershed Modeling Report Prepared by Tetra Tech). The initial field work will focus on achieving an overall project review and will be used to inform the kickoff meeting and determine the final content of the subsequent field work.

A kickoff meeting will be conducted concurrent with this task but is budgeted under Task 7.

Assumptions

- **Kickoff meeting will be 1-2 hours in duration and will occur concurrently with the initial site visit (approx. 5-6 hours) at a location in Puyallup to be specified by the Tribe.**

Deliverables:

- **Technical memorandum (4-6 pgs plus key photographs in appendix) documenting existing site conditions based on review of existing information and site visit. All data and field notes from the site evaluation will be included as appendices in the technical memorandum.**

TASK 2 – DESIGN OF CONCEPTUAL ALTERNATIVES

NSD will collaborate with the Tribe to refine project objectives and design criteria based on key findings from Task 1 as outlined in ISPG Chapter 4. Risk and cost will be considered as well as habitats which could benefit or be harmed by the potential restoration, stabilization strategies, and the duration and extent of disturbance during construction. Additionally, alternatives will be selected focusing on minimizing or eliminating the need for mitigation.

A collection of potentially appropriate bank protection methods for both sites will be identified initially using Chapter 5's Matrix 1 "Screening Treatments Based on Site Conditions" to consider how to resolve the site-specific slope failure mechanisms and identify which areas, if any, where the no action alternative would be preferred. Those elements which are determined to be potentially suitable (either "G - Good" or "G2 - Good in combination with

other suitable technique") will be further evaluated using Matrix 2 "Screening Treatments Based on Reach Conditions". Preferred techniques will be those with rating of "G" or "G2". Those which are rated "D", dependent on site conditions, will be briefly evaluated to determine potential suitability. It is anticipated that the log cribwall treatment with bioengineering will be a viable solution for bank stabilization in at least some of the project sites.

Figure 2- Intact stream corridor in Seattle with adequate wood loading that has maintained resilience to channel incision despite substantial increases to peak flow frequency and magnitude driven by development in the upper watershed.

Figure 3 – Wood in steep headwater channel of Olympic Peninsula, WA. Logs create sediment traps and surface roughness that dissipates energy of floods and debris flows. Logs are buried in alluvium and above the channel. As sediment accumulates, logs previously located above the channel can be incorporated into stream bed.

In determining conceptual design of the bed control, we will use the ISPG, and supplement it with new designs which NSD has developed and successfully implemented for degrading channels, including the roughened channel design, deep hyporheic flow path and large wood matrix. These three designs have been proven successful, but were not available at the time of the ISPG publication in 2003. These three designs, as well as any additional design conceived of by NSD staff will be integrated into the Matrix 2 as supplemental technologies with potential suitability assigned to them for evaluation purposes. We will compare potential designs to reference sites in urban and rural settings that are stable and have high habitat value, the majority of which have substantial quantities of large wood incorporated into the bed and banks (Figures 2 & 3).

In selecting the conceptual design alternatives for each site, we will refer to the Sediment Reduction Action Plan's recommendation to stabilize the channel bed with a roughened channel area assumed to be 25 feet wide and accommodating up to the 100-year discharge. In addition, our field reconnaissance effort identified substantial sediment inputs coming from adjacent un-vegetated slopes, approximately 30 feet high that were sloughing gravel into the channel bed. To accommodate this concern, we will also evaluate bank stabilization methods to reduce sediment input from valley hillslopes destabilized by past incision. We anticipate a need to raise the channel bed sufficiently to stabilize the toe of these hillslope deposits and extend vertically up the valley wall to support re-vegetation of these gravel deposits. Further, design alternatives that include project elements above the existing channel will be considered to ensure added sediment storage capacity within the reach as the channel aggrades around project features.

Preferred techniques based on the ISPG matrix analysis will be developed into up to three conceptual design alternatives that will be compared and evaluated based on how well they:

- re-establish the stream invert at a higher elevation;
- provide channel bed hydraulic roughness, stress partitioning, and modifications to channel gradient to allow for increased sediment storage capacity and flow attenuation;
- protrude above the water surface to provide structure and roughness for encouraging additional bed aggradation under future conditions; and
- allow for treatment of surface runoff and flow attenuation through a combination of hyporheic flow through the new channel bed and reconnection of the channel with its floodplain where feasible.

Due to limited site access and steep, confined terrain in the project area, we will also evaluate the suitability of the concept alternatives to be built either by hand or machine methods and evaluate the site impacts and restoration that would be associated with each approach. A presentation of the conceptual alternatives will be made to the Puyallup Tribe, WDFW, and the City of Puyallup and a preferred alternative will be selected to go to 30% and 60% design (Task 5). The Tribe, WDFW, and the City of Puyallup must concur with the preferred alternative. A physical model of the preferred alternative structure design for channel stabilization will be built at 1:24 or similar scale to determine constructability and provide a model for use in development of the design drawings and will be reviewed with stakeholders at the concept design level. Budget for traveling to Puyallup to conduct a design charrette that will present the conceptual alternatives and select a preferred alternative is included in Task 7.

Assumptions

- **Design charrette will be half-day in duration and will take place at a location in Puyallup to be specified by the Tribe**
- **The ISPG writup developed as a part of this Task will be a summary representation of the ranking and selection matrices with brief bullet-point descriptions. Due to funding limitations of Phase 1, a complete ISPG memorandum will be developed as part of Phase 2.**

Deliverables:

- **Base map showing existing conditions and plan view drawings of conceptual design alternatives (up to 3).**
- **Brief writeup (2-4 pgs) summarizing: (1) design alternatives with ISPG evaluation and ranking protocol, (2) design criteria for the project elements, and (3) feasibility of hand and machine methods.**
- **Photographs of physical model of preferred alternative structure design**

TASK 3 – SITE SURVEYS AND HYDRAULIC ANALYSES

NSD will complete two days of site survey at the two sites The field work will include the following: topographic surveying to set control hubs, develop channel profile and representative cross-sections and Ordinary High Water Marks to integrate with LIDAR data, collection of GPS data points of key elements including access routes, staging locations, significant slope failures and possible wetland areas. Field data collected as part of this task will be utilized as input data to the hydraulic and sediment transport analysis and in production of a topographic basemap for CAD drawings. The survey will focus on capturing elevation data at the bottom of the incised channel and will be integrated with LiDAR data representing adjacent hillslope areas. The field data collected will include:

- Channel geometry
- Hillslope morphology
- Geologic units
- Bed and bank materials
- Slope stability evaluation
- Vegetation
- Wood recruitment and function
- Ordinary High Water Marks (OHWM)
- Indicators of the pre-disturbance floodplain surface
- Construction access routes
- Wetland presence/absence within the likely construction area

The hydraulic and sediment transport analyses will utilize the field data, HEC-RAS model results from the sediment study, and other analytic tools to evaluate the channel hydraulic parameters, slope stability, and sediment storage capacity associated with the preferred treatment alternative selected in Task 2 for each project site. Hydraulic and sediment transport analysis methods will focus on at-a-section calculations that quantify the stress partitioning from wood placement, channel roughening, bank stabilization, and channel gradient modifications. The analyses will also quantify sediment reduction volume estimates.

Assumptions

- Geologic units for the project area will be identified based on the exposed bank and bed materials observable from the site investigation, and supplemented with review of existing information including past studies provided by the Tribe and review of NRCS soil survey database. No subsurface investigations will be performed.
- Wetland areas within the project area will be categorized simply as likely presence/absence – a wetland delineation will not be prepared under this scope. If wetlands are determined to be likely within a construction zone, subsequent delineation can be performed under a future scope of work.

Deliverables:

- Location of likely presence of wetland areas within the project area shown on the existing conditions basemap
- Technical memorandum (4-6pages plus appendices) summarizing the site survey data collected, and hydraulic and sediment transport analyses performed. All survey data, field notes, photos as well as the hydraulic and sediment transport analyses and input data associated with these analyses will be conveyed to the Tribe as an addendum to the technical memorandum or under separate cover as part of this task.

TASK 4 - 30% SITE DEVELOPMENT AND PLANTING PLANS

We will work with the Puyallup Tribe in coordination with WDFW and the City of Puyallup to develop and incorporate the following site development components into the 30% engineering plans for the two sites: clearing and access (including tree removal if req'd); staging, stockpiling and sequencing; stream crossings; erosion control and mitigation elements for in-water work (as necessary); diversion and dewatering (as necessary); and public viewing areas (as applicable). Planting and management plans will also be developed for both sites that will focus on the reestablishment of native plant communities that will provide long-term stability and ecological health for the site. Based on findings from the site survey and an understanding of successional forest stages, NSD will select appropriate species for each site based on the current successional stage from pioneer to climax species. Due to funding limitations this task will only be taken to 30% design as part of Phase1. In phase 2 these elements will be taken to 60% and 90% design.

Deliverables:

- Development of site development components and planting plans for both sites and incorporation into the 30% engineering plans.

TASK 5 – PREPARATION OF 30% & 60% PLANS, SPECIFICATIONS AND COST ESTIMATES FOR UPPER CLARKS CREEK AND TRIBUTARY STABILIZATION PROJECTS

NSD will provide a design narrative explaining the project recommendations, design justification, cost estimates, and materials used for construction. Plans will be developed in Autocad, 22x34-in format and will be provided electronically as PDFs and CAD files. We will present preliminary (30%) drawings that illustrate the different restoration elements and proposed construction approach (hand, machine, helicopter, etc) at a meeting with project partners (budgeted under Task 7). Stakeholder comments will be included and design detailing will be added to develop 60% design documents, to be sufficient for permitting. Documentation will be compiled to produce a basis of design report. Stakeholder comments to the 30% design will be incorporated and construction detailing will be added to develop the 60% design, which we anticipate will include the following design sheets:

- Cover sheet
- General notes
- Existing conditions site plan with
- Grading plan and profiles including floodplain and side channel features and proposed OHWM
- Structure details (plan and profile)

OHWM
- Restoration plan with access and staging areas identified
- Temporary erosion and sediment control plan, including diversion / dewatering plan
- Planting plan and schedule

Assumptions

- "Typical" designs for in-channel and bank stabilization structures will be developed which can be adjusted to accommodate site conditions in different locations.

Deliverables:

- 30% & 60% design plans, specifications and cost estimate in electronic format (PDF) sized for 11"X17". Hard copies and/or CAD files will be provided as desired. Final drawings will be provided in both CAD and PDF format.
- Basis of design report that summarizes project background; goals and objectives; site evaluation; concept design development; hydrologic, hydraulic, geomorphic, and sediment transport modeling and analyses; planting plan; design development; construction considerations; and summary of stakeholder communications. This report will draw as needed from memoranda produced as parts of earlier tasks.

TASK 6 – PERMITTING

NSD will provide project permit application services in order to obtain regulatory approval of the project. We will verify permit requirements, solicit and collect information from regulatory agencies and the landowner (WDFW), complete application forms, and submit the project permit application package to the appropriate agencies as well as the Tribe, WDFW, and the City of Puyallup. We will correspond with agency personnel as needed and will attend one site walk-through with Agency staff to answer project questions. Potential presence of wetlands within the project area will be determined with a review of National Wetlands Inventory database, review of City of Puyallup records, review of existing documents and onsite presence/absence survey.

Assumptions

- The Tribe will coordinate with the tribal cultural resources specialist regarding the permitting needs of these projects. Cultural resource investigation is anticipated to be sufficient with an Inadvertent Discovery plan, to be prepared by the Tribe.
- This project may qualify for the State's new streamlined JARPA process which waives the need for completion of SEPA (State Environmental Policy Act) documentation or local permits.
- Construction approaches will be explored that do not fall under ACOE jurisdiction to waive need for ACOE permit.
- To speed permitting, the site walkthrough is anticipated at 30% design, immediately after which the SPIF and 30% designs will be submitted to ACOE and WDFW to speed permitting. The feasibility of this approach will be discussed with ACOE and WDFW staff prior to the site walkthrough.
- If the presence/absence survey indicates likely presence of wetlands within the project area, additional scope and budget will be needed to perform wetland delineation, if required by regulators.

Deliverables:

- Completed JARPA and Specific Project Information Form (SPIF),
- ½ day site visit with and walkthrough with staff from ACOE, WDFW, the Tribe and the City of Puyallup.

- SEPA documentation will be prepared if the State streamlined JARPA process does not apply to this project
- Local permits (clear and grade, critical areas) will be prepared if the State streamlined JARPA process does not apply to this project

TASK 7 – MEETINGS FOR KICKOFF, DESIGN CHARETTE, 30% REVIEW

Our project manager will provide regular status updates to project partners via e-mail or by phone. Updates will be provided to facilitate the tracking of progress and to communicate major findings as data becomes available. We will also produce monthly progress reports to accompany our invoicing for services completed. We assume facilitation of up to 3 meetings will be required (kickoff; design charrette – alternative selection; 30% design review).

Assumptions

- Meetings will be in Puyallup, WA at a location to be specified by the Tribe.
- The Tribe will be included in all communications with agencies and project partners

Deliverables:

- Monthly status reports, updates, and invoices (up to 6)
- Up to 3 Meetings with client, stakeholders, and permitting agencies
- Correspondence with project partners via email and phone to maintain open communication

PROJECT BUDGET AND SCHEDULE

The budget estimate below is made based on the scope of services outlined above.

Every effort will be made to allow construction to occur in 2015. Key to this will be the willingness of ACOE to accept 30% designs and SPIF to start permit review concurrent with design development. If permits are not issued by March 1, 2015, construction may need to be deferred to 2016.

TABLE 1 – PROJECT SCHEDULE AND BUDGET

TASK	DESCRIPTION	BEGINNING DATE	ENDING DATE	BUDGET
1	SITE EVALUATION AND REVIEW OF EXISTING INFORMATION	11-15-14	11-30-14	$5,940
2	DEVELOP CONCEPTUAL DESIGN ALTERNATIVES	12-01-14	12-15-14	$16,217
3	CONDUCT SITE SURVEYS AND HYDRAULIC ANALYSES	11-15-14	11-30-14	$30,870
4	30% SITE DEVELOPMENT & PLANTING PLANS	12-15-14	02-15-15	$4,880
5	PREPARATION OF 30%, & 60% PLANS, SPECIFICATIONS, AND COST ESTIMATES	11-15-14	02-15-15	$31,410
6	PREPARATION OF PERMIT APPLICATIONS	12-15-14	02-15-15	$19,645
7	SITE VISITS AND MEETING ATTENDANCE	ONGOING	ONGOING	$20,147
			TOTAL	$129,109

Phase I Budget: Clarks Creek Channel Stabilization

Job Number:	0
Client:	Puyallup Tribe
Job Name:	Clarks Creek Channel Stabilization
PM:	Chelsea Young
Owner:	Puyallup Tribe
Date:	10/31/2014

Task	Task Description	T. ABBE (Principal Geomorph)	K. HRACHOVEC (Principal Engineer)	A. JOHNSON (Principal Biologist)	L. EMBERTSON (Senior River Engineer)	M. REINHART (Senior Geomorph)	M. FISCHER (Senior Ecologist)	J. SODEN (Senior Biologist)	S. CONROY (Senior Biologist)	P. TROTTER (Senior Biologist)	N. SILVERMAN (Project Engineer)	D. STEWART (Project Engineer)	M. ERICKSON (Project Geomorph)	S HIGGINS (Project Geomorph)	C. COLEMAN (Project Planner)	P. BROOKS (Senior Planner)	C. YOUNG (Staff Engineer)	K. ANDREWS (Staff Engineer)	D. DOOLEY (Staff Engineer)	B. KELLER (Staff Scientist)	D MATSUMOTO (Senior CAD/GIS)	M WALLER (CAD/GIS)	D FRENCH (CAD/GIS)	D. DUNCAN (Project Assistant)	A. HRACHOVEC (Project Assistant)	K. HINN (Project Assistant)	Total Hours	Labor Cost	Expenses	Total Cost
	Billing Rates	$210	$210	$210	$165	$160	$160	$160	$160	$160	$135	$135	$125	$125	$120	$125	$115	$115	$115	$100	$90	$80	$80	$70	$65	$65				
1	Site Evaluation and Review Existing Information																													
1.1	REVIEW & SYNTHESIZE EXISTING DATA											1		10			12										23	$2,765		$2,765
1.2	TECH MEMORANDUM											1		8			12										21	$2,515		$2,515
1.3	ADMIN / COORDINATION																4							1	1	1	7	$660		$660
	Subtotals	0	0	0	0	0	0	0	0	0	0	2	0	18	0	0	28	0	0	0	0	0	0	1	1	1	51	$5,940	$ -	$5,940
2	Develop Conceptual Design Alternatives																													
2.1	DEVELOP CAD BASEMAP (EC)																8				20						28	$2,480	$0	$2,480
2.2	DEVELOP CONCEPT ALTS	4	4											8			10										26	$3,830	$0	$3,830
2.3	DRAFT CONCEPT ALTS	2	8											8			12				10						40	$5,380	$0	$5,380
2.4	DEVELOP PHYSICAL MODEL OF PREF. ALT	2	8														12										22	$3,480	$77	$3,557
2.5	ADMIN / COORDINATION																6							2	1	1	10	$960	$0	$960
	Subtotals	8	20	0	0	0	0	0	0	0	0	0	0	16	0	0	48	0	0	0	30	0	0	2	1	1	124	$16,140	$ 77	$16,217
3	Conduct Site Surveys																													
3.1	FIELD DATA COLLECTION	14	14									30		30					30								118	$17,130	$ 880	$18,010
3.2	FIELD WORK PREP AND DATA PROCESSING	2	2									4		8					16								32	$4,220	$ 600	$4,820
3.3	TECH MEMORANDUM		1									8		8													17	$2,290	$ -	$2,290
3.4	HYDRAULIC ANALYSIS / STRESS PARTITIONING	2	4		8							16		8													38	$5,740	$ -	$5,740
3.5	WETLAND PRESENCE/ABSENCE EVAL															30											30	$3,750	$0	$3,750
	Subtotals	18	21	0	8	0	0	0	0	0	0	58	0	54	0	30	0	0	46	0	0	0	0	0	0	0	235	$33,130	$ 1,480	$34,610
4	30% Site Development and Planting Plans																													
4.1	30% PLANTING PLAN		1				4									16	2				20						43	$4,880		$4,880
	Subtotals	0	1	0	0	0	4	0	0	0	0	0	0	0	0	16	2	0	0	0	20	0	0	0	0	0	43	$4,880	$ -	$4,880
5	30%, 60% Plans, Specifications, and Cost Estimates																													
5.1	30% PLANS AND COST ESTIMATE	2	8									4					24				40						78	$9,000		$9,000
5.2	60% PLANS AND COST	2	12									4					24				60						102	$11,640		$11,640
5.3	BASIS OF DESIGN REPORT	2	4									4					24										34	$4,560		$4,560
5.4	30%, 60% SPECIFICATIONS	2	6									4					30										42	$5,670		$5,670
5.5	ADMIN / COORDINATION											4															4	$540		$540
	Subtotals	8	30	0	0	0	0	0	0	0	0	20	0	0	0	0	102	0	0	0	100	0	0	0	0	0	260	$31,410	$ -	$31,410
6	Permitting																													
6.1	VERIFY PERMITTING REQUIREMENTS											2				8											10	$1,270		$1,270
6.2	JARPA		4									4				10	8				8						35	$4,385		$4,385
6.3	SPIF		4													10											14	$2,090		$2,090
6.4	SEPA CHECKLIST															24											24	$3,000		$3,000
6.5	CORRESPONDANCE W/AGENCY STAFF															8											8	$1,000		$1,000
6.6	ADMIN / COORDINATION											2				4									1	1	7	$900		$900
6.7	LOCAL PERMITS (CLEAR/GRADE, SENS. AREAS)															16											16	$2,000		$2,000
6.8	SUBMITTAL AND TRACKING OF PERMITS															10											10	$1,250		$1,250
	Subtotals	0	8	0	0	0	0	0	0	0	0	8	0	0	0	90	8	0	0	0	8	0	0	0	1	1	124	$15,895	$ -	$15,895
7	Meetings for Kickoff, Design Charette, 30% Review																													
7.1	SITE VISIT AND KICKOFF	10	8									2		14				14									48	$7,410	$417	$7,827
7.2	DESIGN CHARETTE - PREF ALT SELECTION	8	8									2						14									32	$5,240	$[illegible]	$[illegible]
7.3	30% DESIGN REVIEW MTG	8	8									2						14									32	$5,240	$295	$5,535
	Subtotals	26	24	0	0	0	0	0	0	0	0	6	0	14	0	0	0	42	0	0	0	0	0	0	0	0	112	$17,890	$ 1,031	$[illegible]
	SubTotals	60	104	0	8	0	4	0	0	0	0	94	0	102	0	136	187	42	46	0	158	0	0	3	3	3	949	$ 125,285	$ 2,916	$ 128,[illegible]
	Admin Allocation (5% of labor)																													$ -
	Labor Contingency																													$ -
	Subcontractor Fees																													$ -

Service =

+4% markup =