KITTITAS COUNTY
DEPARTMENT OF PUBLIC WORKS

AGENDA STAFF REPORT

AGENDA DATE: June 2, 2015

ACTION REQUESTED: Approve the Supplemental Agreement Number 1 between WATERSHED Science & Engineering Inc. and Kittitas County, Washington Flood Control Zone District, to provide consulting services for the Yakima River Multiple Benefit Flood Hazard Reduction & Habitat Restoration Corridor Plan.

BACKGROUND: Kittitas County entered into an agreement on October 23, 2013 with WATERSHED Science & Engineering, Inc. to provide consulting services for the Yakima River Multiple Benefit Flood Hazard Reduction & Habitat Restoration Corridor Plan. Additional work is needed to complete this plan.

The level of stakeholder involvement needed to complete this project was underestimated in the original scope of work. Also, the consultant's existing conditions evaluation revealed that the Jefferies Levee provides significant flood reduction benefits to downstream floodplain and the Hansen Pits Levee. However, the Jefferies Levee was outside of the study area in the original scope of work. Therefore, the scope of work should be revised to increase the amount of stakeholder involvement and expand the project study area to include the Jeffries Levee. The requested supplement to the consultant agreement will provide the needed schedule and resources to complete this work.

This request is to extend the consultant agreement completion date to September 30, 2015 and increase the maximum amount payable to $177,758, an increase of $17,798.

Staff is requesting the Board to authorize the Chair signature on the Supplemental Agreement Number 1 between WATERSHED Science & Engineering Inc. and Kittitas County, Washington Flood Control Zone District, to provide consulting services for the Yakima River Multiple Benefit Flood Hazard Reduction & Habitat Restoration Corridor Plan.

INTERACTION: Public Works

RECOMMENDATION: Authorize Chair signature.

HANDLING:	Please return a signed resolution to Public Works and two signed copies of the Supplemental Agreement Number 1.
ATTACHMENTS:	Resolution and three originals of the Supplemental Agreement Number 1
LEAD STAFF:	Mark Cook, Public Works Director

BOARD OF COUNTY COMMISSIONERS
COUNTY OF KITTITAS
STATE OF WASHINGTON

RESOLUTION NO. _____

TO EXECUTE THE YAKIMA RIVER MULTIPLE BENEFIT FLOOD HAZARD REDUCTION & HABITAT RESTORATION CORRIDOR PLAN SUPPLEMENTAL AGREEMENT NUMBER 1

WHEREAS: Kittitas County Flood Control Zone District received funding from the Salmon Recovery Funding Board (SRFB) for the Yakima River Multiple Benefit Flood Hazard Reduction & Habitat Restoration Corridor Plan project; and

WHEREAS: The project is administered by the Recreation and Conservation Office (RCO), and sponsored by the Kittitas County Flood Control Zone District and Kittitas County Conservation District; and

WHEREAS: Matching funds are being provided by the US Bureau of Reclamation, Washington State Department of Transportation, Mid-Columbia Regional Fisheries, and Kittitas County Flood Control Zone District; and

WHEREAS: The project will involve identifying and prioritizing actions for salmonid species in a three-mile long reach of the Yakima River south of Ellensburg; and

WHEREAS: The project will also identify flood hazards throughout the reach and determine the restoration and protection needs of the Hansen Pits Levee and Ringer Loop Road areas; and

WHEREAS: Kittitas County requires civil and hydraulic engineering services to complete the study; and

WHEREAS: The County selected WATERSHED Sciences and Engineering to provide these services; and

WHEREAS: On November 5, 2013, the Board of County Commissioners approved Resolution 2013-130 to authorize an agreement between WATERSHED Science & Engineering, Inc. and Kittitas County, Washington Flood Control Zone District, to provide consulting services for the Yakima River Multiple Benefit Flood Hazard Reduction & Habitat Restoration Corridor Plan; and

WHEREAS: Kittitas County, Washington Flood Control Zone District has determined that the scope of work should be revised to increase the amount of stakeholder involvement in this study and expand the project study area to include the Jeffries Levee; and

WHEREAS: The proposed Supplemental Agreement Number 1 is for WATERSHED Science & Engineering, Inc. to provide consulting services as shown in Exhibit A; and

NOW, THEREFORE BE IT RESOLVED that the Board of County Commissioners, in the best interest of the public, does hereby authorize the Chair signature on the Supplemental Agreement Number 1 between WATERSHED Science & Engineering, Inc. and Kittitas County, Washington Flood Control Zone District.

DATED on this 2nd day of June, 2015, at Ellensburg, Washington.

BOARD OF COUNTY COMMISSIONERS
KITTITAS COUNTY, WASHINGTON

ATTEST:

_____
Gary Berndt, Chair

_____
Clerk of the Board

_____
Obie O'Brien, Vice-Chair

_____
Paul Jewell, Commissioner

Exhibit A

Consulting Services Supplemental Agreement Number 1

Washington State Department of Transportation

Supplemental Agreement Number 1	Organization and Address Watershed Science and Engineering, Inc. 110 Prefontaine Pl. S., Suite 508 Seattle WA 98104 Phone: 206 521-3000	
Original Agreement Number Kittitas County Res No. 213-130		
Project Number	Execution Date June 2, 2015	Completion Date September 30, 2015
Project Title Yakima River Multiple Benefit Flood Hazard Reduction & Habitat	New Maximum Amount Payable $ $177,758	
Description of Work Conduct an investigation to develop an integrated plan to reduce flood hazards and improve fish habitat along a three-mile reach of the Yakima River extending from the Hansen Gravel Pits to the mouth of the canyon.		

The Local Agency of Kittitas County, Washington Flood Control Zone District desires to supplement the agreement entered into with Watershed Science and Engineering, Inc. and executed on October 23, 2013 and identified as Agreement No. _____

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

The changes to the agreement are described as follows:

I

Section 1, SCOPE OF WORK, is hereby changed to read:

See Attached Scope of Work

II

Section IV, TIME FOR BEGINNING AND COMPLETION, is amended to change the number of calendar days for completion of the work to read: Completion Date Changed to September 30, 2015

III

Section V, PAYMENT, shall be amended as follows:

Payment changed to $177,758

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

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

By: Larry M Karpack

Consultant Signature

By: _____

Approving Authority Signature

Date

DOT Form 140-063 EF
Revised 9/2005

Modified May 13, 2015
(Scope additions / refinements are in red)

Scope of Work
Yakima River
(Hansen Pits to Yakima Canyon)
Multiple Benefit
Flood Hazard Reduction & Habitat Restoration
Corridor Plan

Kittitas County Public Works and partners seek to develop an integrated vision/plan to reduce flood hazards and improve / preserve habitat along a three mile reach of the Yakima River which extends from the Hansen Pits (a series of abandoned gravel pits) downstream to the mouth of the Yakima River Canyon (Figure 1). The goal is to identify flood reduction and habitat solutions that achieve landowner and community goals, are supported by a diverse group of stakeholders, and will be eligible to receive funding for implementation from multiple sources.

Watershed Science & Engineering (WSE) and sub-consultant Herrera Environmental Consultants (Herrera) have been selected to guide the development of the plan and to complete the technical investigation required to identify solutions. This document serves as the consultant's scope of which will consist of five primary tasks:

- Task 1. Stakeholder Participation
- Task 2. Existing Condition Evaluation
- Task 3. Flood Reduction and Habitat Restoration Opportunities
- Task 4. Integrated Corridor Plan and early Action Projects
- Task 5. Project Management

These tasks are described below.

Task 1. Stakeholder Participation

Active stakeholder participation is essential. The County and Kittitas County Conservation District (Conservation District) will partner to lead this task and the consultant team will provide support. County and Conservation District staff have existing professional relationships with key stakeholders and have successfully completed similar stakeholder engagement activities on past projects.

Stakeholder participation will focus on communication and engagement of three groups: 1) specific individual landowners, 2) a technical advisory committee, and 3) the general public. The primary activities and/or responsibilities of each group and the tasks to be completed by the consultant team are described below.

- Project Kick-Off Meetings

- Individual Landowner Meetings – A single meeting will be held with key individual property owners who have a significant stake in the outcome of the project. County, Conservation District, and consultant staff will ask the landowners to:
    - Describe observations of past flood hazards (they will be encouraged to provide photographs or other information that will be useful to the team)
    - Share flood hazard concerns
    - Provide recommendations to preserve and improve habitat
    - Provide recommendations to reduce flood hazards
    - Identify limitations or constraints.
- Technical Advisory Group Meeting – County and Conservation District staff will select the technical advisory group members, setup a 2 hour kick-off meeting, and provide an overview of roles and responsibilities. The consultant project manager and a representative from Herrera will present an overview of the investigation. In preparation for the meeting, WSE and Herrera will prepare a draft list of project objectives and alternative evaluation criteria modeled after those used for the Manastash Creek Corridor Flood Hazard Reduction / Habitat Enhancement Plan. Following County and Conservation district review, the list will be presented to technical advisory group, who will be encouraged to provide feedback and any specific knowledge of the project reach that may be helpful for the consultant team.
- Public Meeting – One 2-hour evening meeting will be held with the general public to describe the project. County and Conservation District staff will organize and lead the meeting. WSE's project manager will provide a brief overview of the planned technical investigations and seek input and feedback from the audience.

- Presentation Existing Condition Investigation Results and Preliminary Actions
    - Individual Landowner Meeting – A meeting will be held with key individual property owners to discuss the findings of the existing condition investigation and to present a preliminary list of possible flood hazard reduction and habitat enhancement actions.
    - Technical Advisory Group Meeting – County and Conservation District staff will coordinate a two hour meeting at which the WSE's project manager and a representative from Herrera will provide an overview of the findings of the existing condition investigation and present a preliminary list of flood hazard reduction and habitat enhancement actions.
    - Public Meeting – One 2-hour evening meeting will be held with the general public to describe the findings of the existing condition investigation and to present a preliminary list of possible habitat enhancement / flood hazard reduction actions. County and Conservation District staff will organize and lead the meeting.

- Stakeholder Feedback on Proposed Actions
    - Landowners – Up to 10 meetings will be conducted with landowners to seek their input and feedback on proposed flood and habitat actions. Meetings will be with individual landowners and/or with small groups of landowners. Meetings will be held at the County

office, at landowner homes, and/or on the landowner's property while walking proposed project sites.

- TAG – Up to eight meetings will be held with members of the technical advisory group to seek input and feedback on proposed flood and habitat actions. Meetings will be held at a public meeting facility, the County office, via phone conference calls, and/or in the field.

- County Staff and Commissioner Briefings – County staff and the commissioners will be briefed as needed to inform and seek feedback on proposed flood and habitat actions.

- Presentation of the Integrated Corridor Plan
  - Individual Landowner Meeting – A meeting will be held with the key individual property owners to present and discuss the draft corridor plan.
  - Technical Advisory Group Meeting – The WSE project manager and a representative from Herrera will present the draft plan and seek feedback. The draft plan will be provided to the members of the committee at least one week prior to the meeting.
  - Landowner Group Meeting – The WSE project manager will present the draft corridor plan to the general public.

Assumptions:

- Each set of meetings will take place on the same day.
- One representative from WSE and one from Herrera will participate in the kickoff meetings and presentation of the Existing Conditions Investigation and Preliminary Actions. WSE's project manager will participate in the presentation of the Corridor Plan.
- The County or Conservation District will prepare meeting minutes if required.

Deliverables:

- Power Point Presentations or other materials and as needed for the:
  - Project kick-off meetings
  - Existing condition and preliminary action meetings
  - Corridor plan presentation meetings.
- List of project objectives and evaluation criteria.

Task 2. Existing Condition Evaluation

The consultant team will document existing habitat and flood/erosion hazard conditions by completing the two investigations described below. Herrera will lead the effort to document existing habitat conditions, and WSE will lead the investigation to evaluate flood and erosion hazards.

Task 2.1 Existing Habitat Documentation. Existing habitat conditions within the project reach will be documented by completing the following tasks:

- **Data Review and GIS Mapping**. Herrera will review existing data on the fish presence and habitat use and conditions. They will examine current and historic aerial photographs, channel bathymetry, and LiDAR imagery to identify different classifications of aquatic habitat and terrestrial vegetation communities. GIS will be used to create draft maps that identify and locate the different habitat units. The maps will also locate key habitat forming features (such as large woody debris) and anthropogenic features that may affect habitat conditions (such as bank armoring and levees).

- **Field Inspection.** Herrera will conduct a field investigation to verify the mapping created as part of the Data Review and GIS Mapping, to identify and define the past and present geomorphic processes responsible for habitat formation within the project reach, and to identify habitat restoration/enhancement project opportunities. The inspection will be conducted both on foot and by floating the river in a drift or jet boat.

- **Hydraulic Aquatic Habitat Conditions.** Alterations in the natural hydrologic regime of the Yakima River have significantly affected habitat quality and availability. In Task 2.2 below, WSE will use existing information to document how mean daily and annual peak flows have changed since the upstream reservoirs were constructed. This data will be provided to Herrera who will use it to help form conclusions on how the reservoirs have impacted channel processes and therefore aquatic habitat quantity and quality.

  In Task 2.2 below, WSE will use the hydraulic model to estimate the location and quantity of aquatic edge habitat that would be present during the average annual mean daily discharge. Herrera will provide WSE with velocity and depth criteria to be used to classify the habitat. A GIS map showing the edge habitat will be created and provided to Herrera for use in refining/verifying the draft habitat unit maps created above.

  WSE will also use the hydraulic model to estimate the amount of floodplain habitat in the form of sloughs and swales that have been cut off from the river channel by berms, levees, road fill, etc.. This data will be provided to Herrera, who will include this data in their habitat tables and will identify the cutoff areas on the habitat maps.

- **Finalization of Habitat Maps and Habitat Data Table.** The GIS maps created above will be refined to reflect the observations from the field inspection and the data provided by the hydraulic model. Tables will be created that list the surface area of each habitat unit and also lists the surface area of habitat that has been cut-off by anthropogenic features.

- **Technical Memorandum.** Herrera will prepare a write-up that will accompany the maps to present the findings of the Existing Habitat Investigation.

  Assumptions:

  - Two Herrera staff will conduct the field inspection. An engineer/geomorphologist with habitat restoration and planning design experience, and a fisheries biologist.
  - The habitat field inspection will be coordinated with flood and erosion hazard field inspection (described in Task 2.2 below) so that the river guide and boat costs can be limited to a single day.
  - Report text will be kept to a minimum and most information will be presented via figures.

- Existing wetlands (if any) will not be delineated or assessed in a way that could satisfy local, state, or federal agency regulatory requirements.

Deliverables: (note – all items below will be presented in the Existing Conditions Report)

- GIS maps that identify existing condition habitat units
- GIS map(s) that present edge habitat based upon velocity and depth criteria.
- Table that lists surface area of each habitat unit.
- Technical memorandum that includes tables and figures.

Task 2.2 Existing Flood and Erosion Hazard Documentation. WSE will identify and document current flood and erosion hazards and assess the condition of existing flood protection countermeasures, including the dikes along and adjacent to the Hansen Pits. This will be accomplished by completing the following:

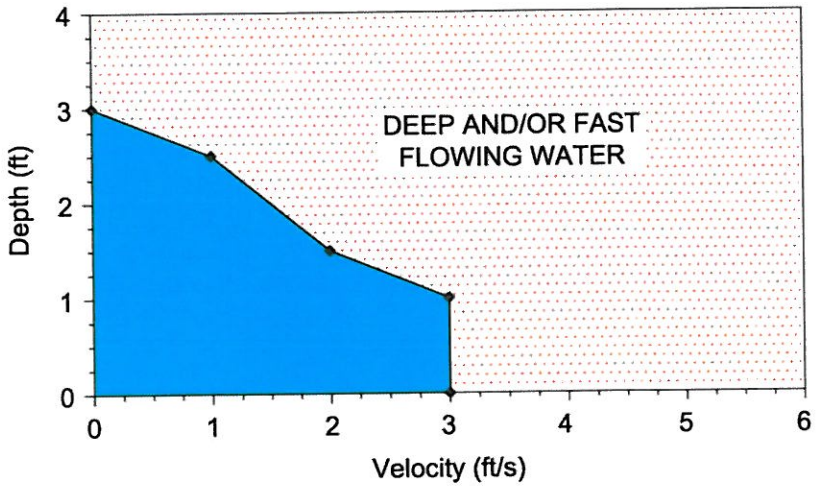
- **Discussions with County and Conservation District.** In addition to seeking information from the landowners in the meetings described above, WSE will talk with County and Conservation District staff to record their eyewitness observations or knowledge of past floods and to document how they perceive the river has changed with time. WSE will seek to obtain photographs they may have of past flooding or erosion.
- **Hydrology.** WSE will review the hydrologic analysis performed by the U.S. Bureau of Reclamation (USBR) for the Schaake levee setback. It is assumed that the analysis completed by the USBR will provide the information required to draw conclusions as to how the reservoirs have altered river mean daily and annual peak flows. It is also assumed that the USBR report will provide estimates of current annual instantaneous peak discharges for the project reach.

  This information will be used to:

  - Determine how flood risk is different today than it was before the reservoirs were constructed.
  - Understand how the reservoirs have impacted the characteristics of the river channel within the project reach.
- **Field Inspection.** WSE will conduct a field investigation to examine existing channel and floodplain conditions as well as existing flood and erosion protection features. The inspection will be conducted both on foot and by floating the river in a drift or jet boat and will take place at the same time as the habitat field inspection.
- **Hydraulic Modeling.** The existing USBR two-dimensional SRH-2D model of the Schaake reach extends from approximately the Umptanum Road bridge downstream to Stone Road -- approximately the middle of the project reach for this investigation. WSE will obtain and review the model SMS input files. They will extend the input files to the downstream end of the project reach near Ringer Loop Road using 2008 LiDAR available from the US Army Yakima Training Center and 2012 river bed soundings available from the USBR. The model will be calibrated to observed flood events if flow and observed high water mark data are available. If they are not, WSE staff will make reasoned judgments to assign appropriate model parameters. In addition to running the model for one habitat discharge (average annual mean daily flow) as described above, the model will be run for the 2-, 10-, and 100-

year annual instantaneous floods to examine and document flood hazard and erosion risk. Water surface elevation, depth, and velocity GIS figures will be created for each discharge and a short write-up will be prepared to describe model development. These will be incorporated into technical memorandum described below.

- **Flood Risk Zones for Public Safety**. For the existing condition 100-year flood, WSE will create GIS maps of the corridor that show flood hazard risk based upon the principle of deep and fast flow shown in the graph below. This is a concept that is based upon research published by the U.S. Bureau of Reclamation* which examines depth and velocity risk thresholds for children and adults.



*USBR, December 1988. "ACER Technical Memorandum No. 11 - Downstream Hazard Classification Guidelines".

Flood hazards will be categorized as follows:

- **Severe**: Area within 100-year flood limits with greater than 3 foot flow depth or 3 fps velocity.
- **High:** Area within 100-year flood limits with flow depth between 1' and 3' or velocity between 1 fps and 3 fps.
- **Medium:** Area within 100-year flood limits with flow depth less than 1' or velocity less than 1 fps.
- **Low:** Areas outside of the 100-year flood for existing conditions.

- **Lateral Channel Migration or Bank Erosion Risk Areas**. Historical aerial photographs of the project reach will be examined and channel planform alignments delineated. These will be compared to document planform changes and historical lateral movement of the river. Planform lines will be delineated from three different historical photographs. These results will be shared with Herrera to inform their geomorphic characterization of habitat forming processes in the reach.

  The output from the hydraulic model (depth, water surface elevation, and velocity maps) will be examined to identify areas where lateral movement of the river is most likely to occur in

the future. Particular interest will be paid to conditions along and through the Hansen Pit ponds and dike and near Ringer Loop Road.

- **Avulsion History and Potential.** The historical aerial photographs and hydraulic model output will be examined to determine if channel avulsions are common within the project reach and to determine whether avulsions are likely to occur in the future. Avulsions can have a significant impact on lateral channel migration potential within a river corridor. A GIS map will be created to show the locations of past avulsions and to identify sites where avulsions are mostly likely to occur in the future.
- **Technical Memorandum.** WSE will prepare a brief write-up that will accompany the maps to present the findings of the existing flood and erosion investigation.

Assumptions:

- The USBR will provide their SRH-2D model or at a minimum their conceptual SMS mesh input files.
- The USBR will provide the river bathymetry they recently collected.
- The USBR will provide the surface TIN they recently developed for their modeled reach.

Deliverables (note – all items below will be presented in the Existing Conditions Report):

- Summary/description of observations (and photographs) made by landowners, County and Conservation District staff, and others during past flood events.
- GIS maps of depth, water surface elevation, and velocity for each discharge modeled.
- GIS maps that present flood hazard public safety risk zones based "Fast and/or Deep" flow.
- GIS Maps comparing historical river channel planforms.
- GIS Map showing historical and likely future avulsion sites.
- Memorandum.

Task 3. Flood Reduction and Habitat Restoration Opportunities

Based upon input received in Task 1 and the findings of Task 2, Task 3 will consist of identifying and evaluating actions that can be implemented to preserve or enhance habitat and to reduce flood and erosion hazards. The consultant team will complete the following tasks:

- **Preliminary Identification of Habitat Enhancement Actions.** Based upon the findings above, Herrera will identify potential habitat enhancement actions along the project reach. The location of each action will be identified on a map of the corridor and included on a list in a spreadsheet.
- **Preliminary Identification of Flood and Erosion Hazard Reduction Actions.** Based upon the findings above, WSE will identify potential flood and erosion hazard reduction actions for the entire project reach. The location of each action will be identified on a map of the corridor and included on a list in a spreadsheet.

  Actions will include two different levee setback alignment alternatives for the existing dike along the Hanson Pits, and will consider options to protect Canyon Road, Ringer Loop, and

Riverbottom Road. Up to four flood alternative actions total, at one or more of the proposed locations, will be evaluated at least in conceptual form with the hydraulic model under 100-year conditions. Results will be used to help inform the consultant team as they rank the alternative flood actions. Deliverables under this task will not include any detailed modeling results or the generation of GIS mapping output for the alternative actions.

- **Preliminary Screening and Ranking of Potential Actions.** Herrera, with support from WSE, will use the evaluation criteria developed at the start of the project to screen and rank the habitat and flood/erosion hazard reduction actions.
- **Preliminary Recommended Actions.** Based upon the results of the evaluation above and feedback received from the landowners and technical committee, WSE and Herrera will identify actions that should be included in the multiple benefit corridor plan. The maps created above that show the preliminary actions will be refined to show those actions that will be included in the plan. Each map will be accompanied by a brief summary that will describe key attributes of each action.
- **Extension of Project to include Jefferies Levee.** The existing condition evaluation revealed that the Jefferies Levee provides significant flood reduction benefits to downstream landowners west of the river by redirecting a major percentage of flow toward the east floodplain and the Hansen Pits levee. This has exerted highly erosive forces on the Hansen Pits levee which is a primary cause of the damage and partial failure of the levee. WSE will run the project hydraulic model to quantify and define the impact of the Jefferies levee and to examine up to three Jefferies levee modification alternatives to reduce impacts to the Hansen Pits levee and east floodplain lands.
- **Refinements to Habitat Enhancement Actions Based Upon Stakeholder Feedback.** Herrera, with support from WSE, will refine the proposed set of habitat projects to reflect feedback received from landowners and technical advisory group members. This will be an interactive process requiring multiple sets of refinements, for it will be challenging to arrive at a set of actions that will be supported by the diverse group of engaged stakeholders. The project footprint, and therefore the potential habitat enhancement area, will be extended downstream from Ringer Loop Road to the mouth of the Canyon and upstream to the head of the Jefferies Levee.
- **Refinements to Flood and Erosion Hazard Actions Based Upon Stakeholder Feedback.** WSE will refine the proposed set of preliminary flood hazard reduction actions to reflect feedback received from landowners, technical advisory group members, and County staff. This will be an interactive process requiring multiple sets of refinements, for it will be a significant challenge to arrive at a set of actions that will be supported by the diverse group of engaged stakeholders.

Assumptions:

- Up to 30 habitat enhancement actions and 8 flood and erosion hazard reduction actions will be identified.
- Habitat enhancement actions will include general recommendations to enhance the habitat benefits of Hansen Pits, but will not include a detailed evaluation or design -- this will be done in the future as part of a separate project that is focused solely on the restoration and protection of Hanson Pit site.
- No detailed engineering design work will be completed for any of the proposed actions.

Deliverables:

- Figures that identify the type and location of each preliminary action.
- Table that lists all preliminary actions and ranks actions based upon evaluation criteria.
- A worksheet for each action that describes the action, the potential benefits and impacts, the relative cost and priority.

Task 4. Corridor Plan and Early Action Projects

- **Priority Projects.** WSE and Herrera will work with the County and with the technical advisory committee to identify specific actions that can be moved forward quickly and for which grant funds may be available. Up to two flood/erosion hazard reduction and three habitat restoration/preservation priority projects will be identified. The projects will be developed to a conceptual design level that is satisfactory to seek grant funds (per Salmon Recovery Funding Board Manual 18, Appendix D). This will include preparation of concept level plans, construction cost estimates, and descriptive text.
- **Multiple Benefit Flood Hazard Reduction and Habitat Restoration Corridor Plan.** A succinct report will be prepared that will serve as the road map to an integrated vision to improve both flood protection and habitat along the Yakima River project reach and its floodplain. The target audience will be non-technical individuals and professionals including landowners, elected officials, and interested stakeholders. It will contain sufficient technical information to inform grant applications. A draft version of the plan will be submitted to the County and technical advisory committee for review and comment. Upon receipt of comments, WSE will refine and submit the final plan to the County.

Assumptions:

- All submittals will be electronic PDF or Word files.

Deliverables:

- Up to two early action flood/erosion hazard reduction and three habitat enhancement concepts developed to a level of detail that is adequate for grant applications – figures, construction cost estimate and descriptive text.
- Draft and final plan document

Task 5. Project Management

WSE will manage the consultant team and will be responsible for providing the following project management duties:

Communication with County Project Manager: Through informal phone calls and e-mail WSE will keep the County's project manager updated on the status of the project and/or specific project tasks. This will include working together to set dates and times for all landowner and technical committee meetings. Herrera will manage their staff as appropriate and will be in regular communication with WSE's project manager.

Monthly Project Invoices: WSE's project manager will prepare and submit monthly invoices. The invoices will include a brief summary of the work that was completed during the invoiced month. Herrera will prepare and submit monthly invoices to WSE

Sub-Consultant Agreements: WSE will prepare contracts for all sub-consultants.

Communication and Invoices: Frequent communication will continue with the County project manager. Project progress reports and invoices will prepared submitted monthly.

WATERSHED
SCIENCE & ENGINEERING
110 Prefontaine Place South, Suite 508
Seattle, WA 98104
Tel. (206)521-3000

Estimate of Professional Services

Prepared for: Kititas County
Project: Yakima River Multiple Benefit Corridor Plan
Amendment 1
Date: May 27, 2015
Prepared By: Jeff Johnson

Watershed Science & Engineering Hour Estimate	Hours						Direct Labor		WSE Loaded Labor	Herrera Loaded Labor	Loaded Labor
TASK DESCRIPTION	Prin	Sr. Eng.	Engineer	Jr. Eng.	GIS Tech	Contract Adm	Totals		Totals	Totals	Totals
Task 1. Stakeholder Participation											
Individual / Group Landowner and TAG member meetings, Briefings to County Staff	32			8			$2,256		$6,690	$1,000	
								Sub-Total	*$6,690*	*$1,000*	*$7,690*
Task 2. Existing Condition Evaluation											
								Sub-Total			
Task 3. Flood Reduction and Habitat Restoration Opportunities											
Extension of Project Reach to include Jefferies Levee	Note -- We were able to cover costs for this extra work through cost efficiencies in the original budget.										
Refinements to Habitat Enhancement Actions Based Upon Stakeholder Feedback.	4			4			$366		$1,086	$1,500	
Refinements to Flood and Erosion Hazard Actions Based Upon Stakeholder Feedback	24			16			$1,973		$5,851		
								Sub-Total	*$6,938*	*$1,500*	*$8,438*
Task 4. Corridor Plan and Early Action Projects											
								Sub-Total			
Task 5. Project Management -- PM Communication and Invoices	4					4	$394	Sub-Total	*$1,168*	*$500*	*$1,668*
								Total	$14,796	$3,000	$17,796
Total Hours and Direct Labor Cost (DL)	64.0	0.0	0.0	28.0	0.0	4.0					
Direct Labor Rate ($/hr)	$63.46	$54.09	$37.26	$28.13	$35.00	$35.00	$4,989				
Overhead (OH) 166.56% (WSDOT Approved)							$8,310				
Fixed Fee = 30%(DL) (WSDOT Approved)							$1,497				
TOTAL LABOR COST	$4,061	$0	$0	$788	$0	$140	$14,796				

Herrera

	Units	Rate	Cost
Herrera Loaded Labor			$3,000
Herrera Expenses			
		Total	$3,000

Direct Expense Detail

	Units	Rate	Cost
Mileage (assume four trips at 200 miles per trip)		$0.565	$0
Other			
		Total	$0

Cost Summary

Total WSE Labor	$14,796
Total Herrera	$3,000
Total WSE Direct Expense	$0
Total	$17,796