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Dear HCCC Advisory Groups,

Since 2013, the Hood Canal Salmon Enhancement Group (HCSEG) and project partners have systematically been working on Lower Big Quilcene River Design project by meeting with and listening to the key community groups, local Tribes, WDFW, public landowners, state agencies including WDFW and county commissioners. This level of involvement was (is) necessary and provides a steady development and advancement of project goals that will ultimately shape the designs from conceptual to preliminary. This design project will include features for restoring salmon habitat in the lower Big Quilcene River but in doing so a few significant components, including addressing shellfish concerns in Quilcene Bay, are needed to be assessed along the way. Due to the multiple benefits approach of the project, a patchwork of funding is necessary to complete all goals. Earlier this year, when Lower Big Quilcene River Preliminary Design - phase 2, SRFB proposal was initially written (May-June 2015) the HCSEG and project partners were confident additional funding/match would be awarded (FPBD or ESRP) and with SRFB funding would produce a preliminary design by 2016. In July 2015, it was evident funding levels would not be available but necessary to accomplish a preliminary design. With the hope that SRFB funding was still achievable, HCSEG and project partners reconvened and using the project goals as a guide, revised the deliverables for phase 2, essentially breaking down the project into achievable steps/phases.

The intent of this letter is provide further information for scope of work listed in the revised SRFB proposal of 8-27-15 and to clarify key questions and concerns of the Lower Big Quilcene River Preliminary Design - phase 2 proposal raised by the HCCC advisory group members at the August 25, 2015 meeting. This letter will include; 1) a summary scope of work and deliverables to be completed of the current project #13-1209 (phase 1), 2) a summary of the deliverables and scope of work of project #15-1204 (phase 2) request, 3) a summary of

deliverables and scope of work to be completed in phase 2 with the additional funding request, and 4) an overall project tasks outline.

Project #13-1209 - Phase 1 – Scope of Work

The work to be completed in Phase 1 is almost complete and is designed to support the overall proposed restoration project within the Lower Big Quilcene River. Phase 1 work, to be completed by end of 2015, is the building block for future work to be completed in phase 2, and includes the following efforts:

1. Complete 3 key stakeholder meetings and local landowner meeting.
2. Design base maps and complete 3 conceptual designs with draft recreational access opportunities, evaluated by key community stakeholders, interest groups and be ready for phase 2 hydrodynamic modeling.
3. Gather and evaluate all previous data and information on hydrodynamic models; these include Delft 2D & 3D, NAVFAC, all peer reviewed models. Calibrate models including model grid for the lower Big Quilcene River and Bay.
4. Complete four model river scenarios associated with a 2 year and 100 year flows and compare of results of existing conditions model simulations with previous model efforts.
5. Provide background information on shellfish resources in Quilcene Bay that will provide development of alternative scenarios. This includes 1) reviewing all available literature relevant to the physical and water quality conditions in the Bay, 2) review literature describing the physical and water quality tolerances of the shellfish grown in the area, 3) reconnaissance level assessments and interviews, 4) record YSI data from the river delta for a month to determine initial salinity, turbidity, temperature and pH.

The 3 conceptual designs, a draft public access plan on the 3 designs and the above mentioned work will be included in a report and uploaded into PRISM by December 2015.

Project #15-1204 – Phase 2 – Scope of Work

The work to be completed in phase 2 in regards to this proposal will build upon the work completed in phase 1. The logical next step of this project will be to address flooding and shellfish concerns, conduct final model calibration and modeling of the 3 conceptual designs produced in phase 1. Currently, we have heard shellfish concerns to be addressed are changes in salinity and sediment in Quilcene Bay. To complete full modeling, it consists of combining a

2D surface model with 3D subsurface model to provide insight and detailed results of flooding scenarios and sediment dispersion on design features noted in the 3 designs. The cost to complete full modelling of the 3 designs with both freshwater and saltwater models will take the bulk of resources and is reflected in current 8-27-15 budget that includes current and additional requested funding and therefore reduces funding in other tasks that are not essential to support the modelling effort at this time. In order to support and further refine the modelling efforts, only essential water quality/shellfish monitoring data will be collected and focused during extreme weather scenarios. Additionally, work in this proposal will include continued community involvement and will be necessary as modelling outputs on the 3 designs are completed.

If additional SRFB funding request (\$100,000) is obtained modelling efforts will need expanded and include potential impacts of sediment transfer to shellfish and infrastructure within the estuary or bay. Likewise, with additional funding, at least 2 soil borings test will be included in the work. Soil boring tests are designed to evaluate soils and subsoils in a profile and provide direction in design features including road modifications of Linger Longer and/or Rodgers Road locations.

As outlined in the current revised 8-27-15 SRFB proposal, the work in phase 2 with the current SRFB funding request of \$200,000 (and match) will include the following;

1. Hydrodynamic/Hydraulic Modelling (2D & 3D) – Final calibrations. Efforts will be combined with existing and collection of current water quality conditions to produce final model calibrations. Essential water quality data/shellfish monitoring data is to include but are not limited to existing and current salinity in Quilcene bay, existing bathymetry, water level data, locations and invert elevations for current water intakes located in the Bay that service hatchery, salinity monitoring data associated with the Bay-water intakes and tidal elevation information. The model grid will be refined to extend downstream beyond the mouth of the bay needed to model salinity and currents within Quilcene Bay. Existing salinity and current data collected in Quilcene Bay will be reviewed for use in calibration of the refined model.
2. The models (2D & 3D) will be used to evaluate effects of flooding extent, depths and velocities within the river and floodplain as well as current salinity within the bay on the 3 conceptual designs from phase 1. The mean annual, 2 year and 100 year flows coupled with king-tide conditions will be used to evaluate the 3 designs and potential impacts within the Bay and estuary.

3. Community involvement will include evaluation of results produced in modelling efforts to determine the potential impacts to the shellfish industry. Meetings will be documented and used to further define the next steps of the project.

Project #15-1204 – Phase 2 – Scope of Work – with additional funding requested

The additional SRFB funding request of \$100,000 will be applied to expand the modelling efforts, continue community outreach, and pre-preliminary design work including 2 soil boring tests. To complete the modelling efforts, further evaluation of river sediment transport into Quilcene Bay will be evaluated. Sediment dispersal, a shellfish community concern, produced by river flooding will be evaluated through subsurface modelling of the 3 design alternatives. This additional modelling effort will provide crucial details that will advanced the evaluation of the 3 designs and further address concerns of the shellfish community.

HCSEG and project partners fully appreciate the time and efforts the HCCC advisory groups and SRFB reviewers have spent evaluating this project and proposal. This design project is at times complex with many working parts operating at different speeds, but generally all moving in the same forward direction. I hope this letter clarifies the advisory group's questions and concerns for the work to be completed in this project proposal/phase 2, and therefore will help to attain the funding requested (current and additional) for the currently named, The Lower Big Quilcene River Design Project. A diagram that outlines the project tasks is included for your review.

Sincerely,

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Hood Canal Salmon Enhancement Group

cc: Alicia Olivas, Mike Ramsey, Mendy Harlow

Lower Big Quilcene River Design Project Task Outline 9-15-2015

