

Mid-Columbia Fisheries Enhancement Group and
Benton Conservation District

REQUEST FOR PROPOSALS

Temperature and Hydrodynamic Modeling of Causeway Modification near Bateman Island at the Mouth of the Yakima River

February 15, 2011

Background and Purpose of Study

The Washington State Salmon Recovery Funding Board has provided funding for an assessment of habitat and non-habitat factors influencing the success of salmonids at the confluence of the Yakima and Columbia Rivers. Past work has indicated that temperature may be a key limit of salmonid success in that area. Mid-Columbia Fisheries Enhancement Group (Mid-Columbia Fisheries) and Benton Conservation District (BCD) seek an in-depth study of temperature interactions between the Yakima and Columbia Rivers at their confluence, with an emphasis on the role of the Bateman Island causeway. Additional physical parameters, including dissolved oxygen, turbidity, flow and sedimentation, will also be investigated.

The project partners are seeking a qualified scientific or engineering consultant to conduct a hydrodynamic and water quality modeling study of the potential effects of causeway modification at Bateman Island, Benton County, WA.

The major purpose of the study is to determine what changes would occur in temperature and flow dynamics in the area if the causeway were modified or removed, either completely or partially. The effects of causeway removal on sedimentation patterns, turbidity, and dissolved oxygen are also of interest.

Scope of Work

Respondents to this request should feel free to propose a technical approach that, in their professional judgment, best meets the purposes of the study. Guidance on the desired scope of work and the distribution of effort is provided below.

1. Study effort should be directed at predicting water quality, flow and sedimentation effects of causeway removal, with an emphasis on the relationship between water quality parameters and salmonid habitat availability/quality.
2. The major water quality variables to be quantitatively simulated are temperature, dissolved oxygen, and turbidity. The major physical variables of interest are the patterns of flow and sedimentation within the Yakima Delta area.
3. The geographic area of interest is the confluence of the Yakima and Columbia Rivers. The model should include those areas where changes could occur in response to causeway modification.

4. It is expected that this study will require new field data collection as well as use of existing data to develop, calibrate, and verify the modeling analysis. In-kind support for field data collection will be made available at no cost to the contractor from the project partners and from local resident volunteers. In proposing new field data collection for this study, respondents may incorporate in-kind assistance of the following nature:
 - a. Benton Conservation District staff can calibrate, deploy, and monitor continuous recording thermometers and dissolved oxygen probes, conduct water sampling for turbidity, temperature, and dissolved oxygen, and perform other monitoring activities.
 - b. Local resident volunteers may be able to provide boat time and simple maintenance and reading of water level gages or other instrumentation.
5. The predictive modeling analysis for water quality, flow and sedimentation effects will include two causeway removal scenarios: (1) complete removal, and (2) partial removal or modification.
6. The model should investigate seasonal variations in water quality, flow and sedimentation.
7. Proposals should include consultant participation in two meetings in the local area with the Yakima Delta Technical Advisory Group, and one public open house. The first meeting will occur near the beginning of the study in order to describe the field work to be conducted and to coordinate the local assistance needed. The second meeting should occur toward the end of the project to present and discuss the study findings and receive comments on a draft final report. The public open house will occur in the fall of 2012. The consultant will need to participate in these meetings, but is not being asked to coordinate or facilitate the meetings.

Project Schedule and Reports

It is expected that a contract will be executed for this work no later than April 1, 2011. A draft final report for review by the Yakima River Delta Advisory Group will be due by October 15, 2012. A final project report incorporating changes made in response to timely review comments will be due December 1, 2012. The final report must include an executive summary, a methods section, results in narrative and graphical form, and conclusions directly addressing the study questions.

Content of Proposals

Proposals must be no more than 15 pages in length, including the following:

1. A narrative statement that addresses the scope of work and describes the study design, including the field methods, the use of BCD or volunteer in-kind services, the modeling techniques to be employed, and the manner in which the results will be analyzed and presented.

2. A proposed budget not to exceed \$85,000.
3. A recent resume of the principal investigator(s) and all key personnel showing qualifications relevant to the proposed study.
4. A description of the equipment, software, instrumentation, and facilities available to the investigator(s) for use on this study.

Criteria for Selection

Proposals will be reviewed by the project partners and the Yakima Delta Technical Advisory Group. Selection of a contractor by the project partners will be based on the following considerations:

1. Technical merit of the proposal.
2. Responsiveness of the proposal to the scope of work described above.
3. Qualifications and experience of the investigator(s) regarding studies of this nature, and availability of appropriate equipment, instruments, and facilities.
4. Experience or familiarity of the investigator(s) with Yakima River dynamics.
5. Cost.

Proposal Submission

Two hard copies and one digital version of proposals shall be delivered to Mid-Columbia Fisheries at the following address:

Rebecca Wassell
Mid-Columbia Fisheries Enhancement Group
421 North Pearl Street, Suite 216
Ellensburg, WA 98926
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Proposals shall be received by March 15, 2011.