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Request for Engineering and Environmental Consulting Services Ebey's Prairie Drainage and Water Quality Improvement Conceptual Design Support

Project Background and Purpose

Whidbey Island Conservation District (WICD) desires to contract for engineering and environmental consulting services to assist with planning agricultural drainage and water quality improvements in the Ebey's Prairie watershed near Coupeville, Washington. The Ebey's Prairie watershed encompasses roughly 2.5 square miles of farm land and rural residential development located immediately south of Coupeville, and is situated entirely within the Ebey's National Historical Reserve. Figure 1 (attached) shows the approximate boundaries of the watershed.

Addressing surface water quality impairments in the Ebey's Prairie watershed has been identified as a specific near-term action (NTA) in the Puget Sound Partnership's 2014 Action Agenda. WICD's conceptual approach to implementing the NTA is to try to integrate improvements to drainage infrastructure with on-site treatment of runoff through infiltration, bio-retention and other low-tech best management practices to reduce or eliminate pollutants from runoff before it flows into Admiralty Inlet. The watershed's existing drainage infrastructure consists of a varied network of publicly-owned storm drains and privately-owned field ditches and subsurface drainage tiles. WICD has identified much of this infrastructure during the process of addressing several site-specific water quality impairment issues over the years, but does not have a comprehensive inventory of the entire drainage system, nor a watershed-wide plan for how improvements to drainage and water quality best management practices can mutually support each other.

Scope of Services and Deliverables

WICD desires to contract for engineering and environmental consulting services to support the development of a comprehensive plan and conceptual designs for integrating drainage improvements with on-site runoff treatment across the entire 2.5 square mile watershed. At the present time, we anticipate that the scope of services will include completion of the following general tasks:

- Review existing documentation to identify all major components of the watershed's existing surface and subsurface drainage infrastructure.

- Prepare a comprehensive site plan of the watershed’s surface and subsurface drainage infrastructure.
- Complete coarse-scale hydrologic modeling to estimate flow rates of surface and subsurface drainage at selected locations of interest in the watershed’s drainage network. Identify key locations where drainage capacity is inadequate to drain soils for agricultural purposes.
- Review previous studies and existing data to identify “hot spots” of water quality impairment and areas where it may be feasible to implement treatment best management practices.
- Identify conceptual engineering and/or land management alternatives for resolving high priority agricultural drainage and water quality impairment problems identified in the previous tasks.
- Meet with stakeholders to select preferred alternatives and then prepare conceptual-level engineering designs or land management recommendations for these preferred alternatives.

Each of these tasks is described below. We anticipate that the precise scope of services may change based on recommendations by the selected consultant during contract negotiations.

Task 1: Review Existing Information and Prepare a Site Plan

WICD will provide the consultant with as-built documentation of storm drains and subsurface drain tiles in the watershed, to the extent that they are available. In addition, WICD will interview large farm landowners to try to determine chronically poor drainage areas and approximate locations and sizes of buried drain tile networks for which no as-built documentation exists. WICD requests that the consultant use this information to prepare a GIS-based site plan with appropriate layers for storm drains, ditches, drain tiles, natural water courses, locations where tile systems outlet to surface ditches, and other relevant features. WICD, the consultant and other stakeholders will agree in advance on the precise boundaries of the watershed planning area.

Task 2: Model Drainage Capacity

WICD requests the consultant to carry out a focused hydrologic modeling study to evaluate key drainage issues that are relevant to the project purpose. We anticipate that issues will include estimating runoff flows and routing from relevant sub-basins of the overall catchment area, identifying areas where runoff from storm drains contributes to overloading of subsurface drain tiles and/or ponding of farm fields, and estimating capacity (or lack of capacity) of subsurface field drainage at chronically poor drainage locations. The conclusions from the modeling study will be used to support the development of drainage improvement alternatives (Task 4), and accordingly the numeric precision of the modeling should be appropriate for conceptual-scale engineering design purposes.

Task 3: Identify Water Quality “Hot Spots”

WICD will provide the consultant with documentation of previous studies of water quality impairment issues in the watershed. These studies have primarily focused on elevated nutrient and fecal coliform concentrations in runoff from animal feeding operations and other specific locations within the watershed. They also include a broader-scale evaluation of the Dept. of Ecology (ECY) funded Ebey’s Prairie Watershed Stormwater Remediation Project (G1300075). WICD requests that the consultant review the findings of these studies in the context of the Task 2 hydrologic study to identify specific locations where it may be feasible and effective to implement best management practices (BMPs) for source control and treatment of runoff.

Task 4: Develop Conceptual Alternatives

Based on the conclusions of the preceding tasks, WICD requests that the consultant identify specific combinations of BMPs for source control, treatment, flow attenuation and/or drainage capacity improvements that will support the project objectives of improving agricultural drainage and water quality, and which will be feasible to implement at the locations of interest identified in Tasks 2 and 3. These combinations of BMPs will be grouped into conceptual alternatives for potential implementation at the locations of interest. WICD anticipates that the BMPs potentially may include, but not be limited to, covering nutrient runoff sources; re-configuring or re-grading ditches; constructing vegetated filter strips and bio-retention/bio-filtration facilities; replacing, upgrading or removing drain tile networks; and converting areas of chronically poor drainage into regional runoff attenuation or bio-retention zones.

The consultant will be asked to present and describe each alternative in a written report and on the comprehensive watershed site plan that was prepared under Task 1. WICD will arrange for meetings of stakeholders to vet the preliminary alternatives and to provide feedback to the consultant on alternatives that they wish to develop in further detail.

Task 5: Prepare Conceptual Designs

The consultant will be asked to prepare conceptual-level engineering designs and cost estimates for up to five of the alternatives that were identified and vetted in Task 4. The design work should include calculation of basic quantities of construction work, identifying site-specific design issues, and estimating construction costs. WICD anticipates that existing LiDAR topographic data and other existing site measurements will be sufficient for developing the conceptual designs, but will be available to carry out additional focused field measurements to support the conceptual design effort at the consultant’s request. Development of each design will include preparation on one or more engineering plan sheets, as appropriate.

Budget and Schedule

WICD has budgeted roughly \$13,000 in grant funding for the consulting services described above. Our target for completing the consulting services is December 15, 2016. We anticipate awarding a contract for this work by October 21, 2016.

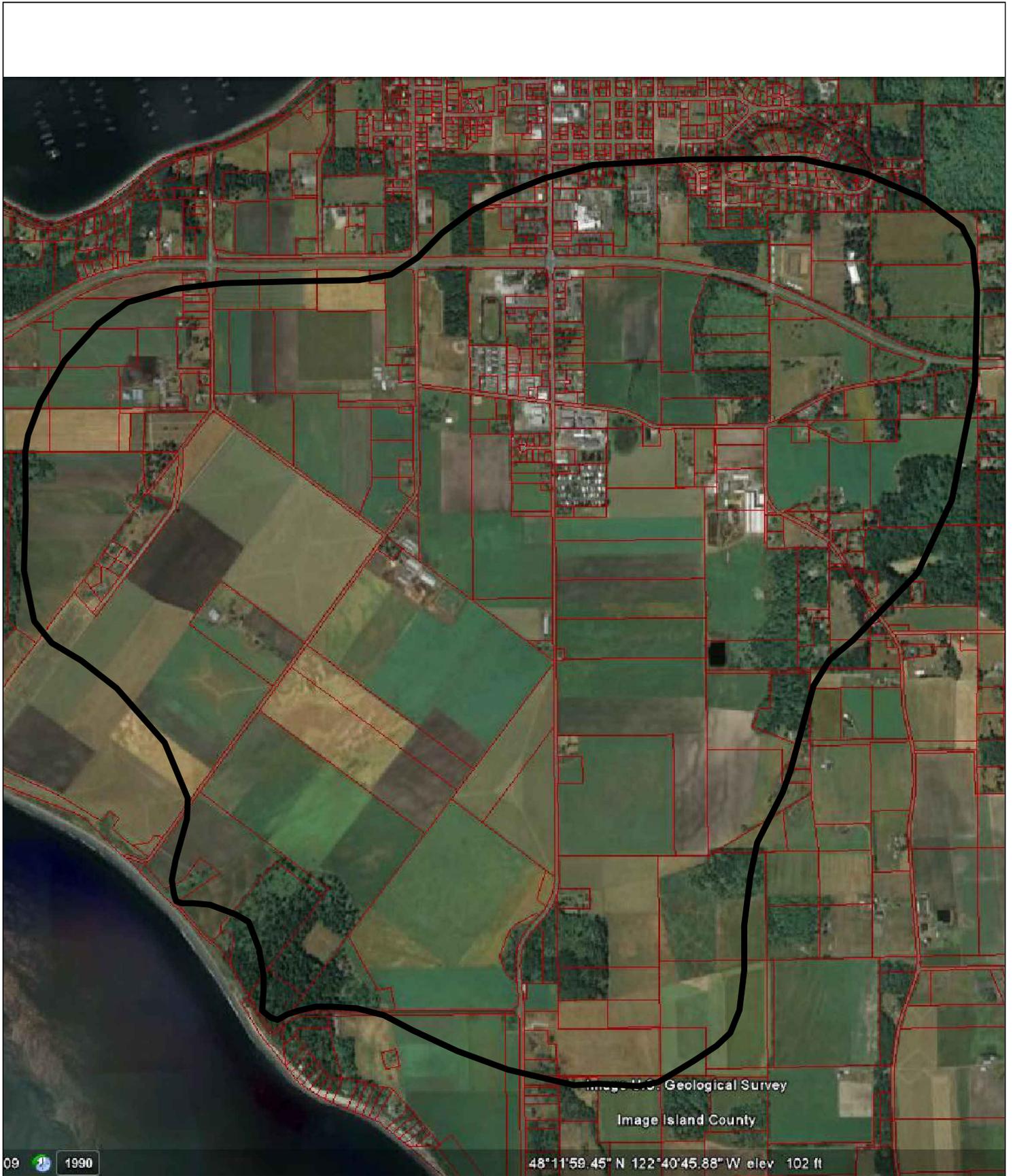
Request for Proposals

WICD requests proposals from interested consulting firms to provide the services described above. Proposals should include a brief technical discussion that outlines and justifies the consultant's proposed approach, a cost estimate for the work and a brief description of a few project examples where the consultant has used the proposed approach to address objectives similar to this project. These example project descriptions should include client or owner contact information. We request that proposals should be brief, ideally not to exceed five or six pages. The contract award will be based on WICD's evaluation of the consultant's technical approach and previous project experience.

Proposals must be received by October 14, 2016 to be considered. Please submit the proposals either by mail or email to:

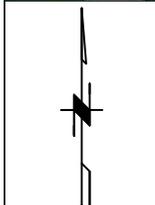
Karen Bishop
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PO Box 490
Coupeville, WA 98239-0490
Tel. (360) 678-4708
Email karen@whidbeycd.org

For questions about the technical approach and objectives of this project, please contact Mr. Tom Slocum, PE at tel. (360) 428 4313 or email tom@skagitcd.org .



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48°11'59.45" N 122°40'45.88" W elev 102 ft



**Whidbey Island
Conservation District**
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**Ebey's Landing
Drainage Basin**

Date: _____ Sheet _____ of _____.