Project: Development of a Model for the Assessment of Biogeochemical Dynamics and Restoration Strategies in Penn Cove

Situation: U.S. EPA Region 10 is soliciting proposals for focused scientific studies and technical investigations that will assist with developing, monitoring, evaluating, or informing key programs or strategies for implementing the Action Agenda to restore and protect the greater Puget Sound ecosystem.

Inputs		Outputs			Short		Outcomes Medium		Long
Penn Cove Hydrodynamic Study Penn Cove Nutrient		Research: Assessment of Nutrient Sources, Dynamics, and Impacts Research: Assessment of Sediment			Understand factors controlling bacterial and algal communities		Opening of 90%		
Penn Cove and		Research: Assessment of Bacterial,			in Penn Cove	closed shellfish harvest areas in Penn Cove for			
Stormwater Water Quality Monitoring		Algal, and Dissolved Oxygen Dynamics			Understand factors controlling dissolved oxygen in Penn Cove		beneficial uses		Monitoring of and permanent
Skagit River to Penn Cove Sedimentation Study		Research: Modeling of Penn Cove and Saratoga Passage current and residence time dynamics			Understand influence of Skagit River, waste	Penn Cove study as a model for data-driven		availability of shellfish harvest areas in Penn	
Penn Cove Bottom Sediment and Pore Water Characterization	$\left  \right\rangle$	Research: Biogeochemical modeling of Penn Cove		water, and stormwater inputs on Penn Cove water quality Understand and mobilize needed resources for diversion or other management actions	ecosystem restoration and shellfish reopening efforts in Puget Sound	<b>→</b>	Cove for the benefit of designated uses		
Penn Cove Bacterial and Algal Monitoring		Research: Modeling of Outfall Relocation and Effluent Reduction Scenarios				by tribal, commercial and recreational user			
Stormwater and Waste Water Treatment and/or Diversion Analysis		Research and Design: Diversion and treatment alternatives for STP effluent and/or stormwaters into Penn Cove				Use of previously closed shellfish areas by tribal,			
Policy and Management Analysis with Coupeville and WA DOE/DOH		Analysis: Regulatory standards and best management practices for opening closed shellfish harvest areas			Coordinate with WA DOE/DOH to review and approve shellfish bed opening	v	commercial and recreational users		