

b. Budget Justification by Federal Budget Category

Federal funds requested

PERSONNEL – \$18,000.00

Northwest Straits Foundation staff will provide project support. One annual salary costs \$24,000. Staff will be assigned 25% time on this project, for an annual cost of \$6,000. Total project cost \$18,000.00.

CONTRACTUAL – \$648,010.00

Northwest Straits Foundation - \$18,900.00. The Foundation will provide overall fiscal management including subcontracts management, grant accounts management, bookkeeping, invoicing, A-133 audits, and financial reporting. The Foundation contracts out these services at \$75/hour.

University of Washington Bothell – \$60,000

Personnel:

Principal Investigator: Salary is budgeted at 0.05, 0.05 and 0.03 FTE's for Dr. Turner in years 1, 2, and 3, respectively. Dr. Turner will serve as the Technical Contact for the grant, coordinate the efforts of the various principal investigators, take the lead in preparing required grant reports, direct the nutrient sampling efforts in Penn Cove, and manage the efforts of the UW students working on the project. Total PI hours:186.

- Research Assistant 1: This hourly wage employee will work 28 hours of work at Penn Cove for Years 1 and 2, taking the lead in collecting nutrient, suspended sediment, and bacteria samples from a boat operated by Penn Cove Shellfish, Inc. RA1 will also attend 1 grant-related meeting per year in Coupeville and spend 15 hours a year organizing data and submitting quarterly reports of the field work findings. Total hours for RA 1 are 47 hours in Year 1 and 45 hours in Year 2.
- Research Assistant 2: This hourly wage employee will work 28 hours of work at Penn Cove for Years 1 and 2, taking the lead in collecting plankton samples from a boat operated by Penn Cove Shellfish, Inc. RA2 will spend 12 hours for Years 1 and 2 analyzing the plankton samples, organizing data provided to us on mussel growth statistics, and submitting quarterly reports on the results. RA2 will attend 1 grant-related meeting per year in Coupeville. Total hours for RA2 are 43 hours in Year 1 and 42 hours in Year 2.
- Laboratory Assistant: This hourly wage employee will work 44 hours of work for Years 1 and 48 hours in Year 2, taking the lead in analyzing the nutrient grab samples from Penn Cove and submitting the results in spreadsheet format on a quarterly basis to the PI.
- Laboratory Supervisor: Christy Cherrier, Science Lab Coordinator for the IAS Program at UW, will work 25 hours in Year 1 training the Laboratory Assistant in the proper procedures of nutrient analysis and supervising their first two analysis runs.

Benefits: The University of Washington applies the following rates to all salary costs according to employee position: Faculty: 23.6%; Professional Staff: 29.3%; Hourly: 13%.

Supplies: Funds (\$1000) are budgeted to purchase a Kevlar profiling cable (10m long) for use with the PI's Satlantic SUNA nitrate sensor. This piece of equipment is critical for the operation of the instrument, particularly in generating vertical profiles of nitrate concentrations from a boat, and it will be subject to harsh conditions and significant wear and tear. The foul weather gear (3

used slickers - \$120), GPS (\$500), batteries (\$100 for both Year 1 and 2), and nutrient sampling bottles (\$630) are also for use on the research cruises (the PI and both RAs will collect data on 4 cruises/year for Years 1 and 2). The filters (\$224), autoanalyzer reagents (\$400), cleaning supplies (\$73) and vacuum pump (\$800) are all required for analyzing the nutrient grab samples collected by RA1 during Years 1 and 2. \$11,774 is budgeted for supplies needed to conduct bacterial analyses of the samples to be collected by RA1, while \$2134 is budgeted to service equipment used in the bacterial analyses.

Travel: Funds are requested for 6 roundtrips to Coupeville (90 miles @\$0.55/mile) in Year 1 and another 6 roundtrips in Year 2 in order to conduct sampling. Rides will be shared by the PI and the 2 research associates.

Other Direct Costs: For both Year 1 and 2, \$100 is budgeted for shipping frozen water samples (5 bottles twice a year) to personnel of the US Geological Survey for analysis.

Indirect Costs: The University of Washington's negotiated rate with the Department of Health and Human Services (agreement date 10/13/09) is 26% for off-campus projects.

Battelle Pacific Northwest Division – \$176,472

Senior Personnel - \$52,773: For budgeting and proposal purposes, Battelle utilizes labor categories. Labor Escalation Rates: FY11 @ 1.0325, FY12 @ 1.0284 and FY13 @ 1.0413. Calendar Months Per Task (T)

| Staff/Labor Category | Total Funding | T1 | T2 | T3 | T4 |
|---|---------------|------|------|-----|-----|
| Khangaonkar, Tarang P, Staff Scientist | \$13,086 | .32 | .32 | .16 | .26 |
| Yang, Zhaoqing, Sr. Research Scientist | \$5,627 | .42 | | .16 | |
| Labiosa, Rochelle, Sr. Research Scientist | \$5,045 | | .65 | | |
| Wang, Taiping, Research Scientist | \$28,389 | 2.05 | 2.77 | .41 | .26 |
| Schrempf, Rosalind, Technical Editor | \$627 | | | | .11 |

Fringe Benefit Rate - \$19,790: Battelle calculates fringe as a percentage of labor. Currently, the percentage is 37.50% for each year. Elements included in the fringe benefit rate are flexible reimbursement plan, FICA taxes, pension, unemployment compensation, worker's compensation, employee/dependant medical insurance, group life insurance, long term disability

insurance, retiree medical insurance, savings plan, dental assistance, tuition refund, routine medical examinations and relocation costs of new staff.

Travel - \$489: Six (6) day trips for 1 staff member to attend business meetings in Mt. Vernon, WA are costing for Task 4. Proposed travel costs personal mileage at the current FTR rate of \$.50 per mile.

Travel Escalation Rates: FY11 @ 1.015, FY12 @ 1.019 and FY13 @ 1.02

Total Direct Charges - \$73,051

Indirect Costs - \$88,850: Battelle's negotiated Indirect Cost Rate Agreement with the US Department of Energy (DOE) includes an Organizational Overhead (Org OH) rate that is applied on a per technical hour performed basis. Org OH (\$34,762) is applied to each technical organization and represents costs for management, supervision, and administration of technical departments. Org OH also includes costs for building and utilities and for research equipment such as small tools, lab supplies, laundry, decontamination/waste disposal, maintenance, and expenses associated with Battelle-owned equipment with an initial cost less than \$50,000. Also included is a factor for reimbursement to the Government for use of DOE-owned equipment with an initial cost less than \$50,000 for work performed under Battelle's Use Permit contract (DEGM05-00RL01831) with DOE.

Current Org OH is as follows for Battelle staff proposed for this research project:

- Marine Sciences Laboratory \$33.55 \$33.50 \$33.70 \$33.70
- Org Development Systems \$12.35 \$12.75 \$13.20 \$13.65

- Program Development and Management (PDM, \$5,789), a cost factor of 5.2% will be applied during FY10 (5.4% applied through FY13) to the Value Added cost factors (ODCs, travel, Org OH, salary and fringe) plus total direct materials (supplies, and subcontracts). PDM includes costs for business development, planning, and monitoring for a specific group of projects. The PDM rate is reviewed and approved annually by DOE.
- CAS 414 (\$672), is applied to direct staff labor hours in Battelle and DOE buildings. Average rate of \$.64 in FY10 and \$.65 in FY11 – FY13 for Battelle buildings and \$.28 for FY10, \$.27 for FY11, \$.25 for FY12- FY13 respectively.
- Based on Battelle's approved Indirect Rate Agreement with DOE, a General & Administrative (G&A, \$47,626) adder is allocated to final objectives by applying the appropriate rate, currently 42%, applied to the value-added base (salary, fringe, organizational overheads, PDM, and travel). G&A includes general functions such as Accounting, Legal, and Personnel department costs, as well as costs for bid and proposal, IR&D, and contract administration, etc.

Fee - \$14,571: Based on Battelle corporate policy, 9% fee is applied to cost-reimbursement, federally funded projects.

United States Geological Survey – \$155,001

Personnel

Post-doc (0.33yr)

Technician salary + fringe (0.33yr)

Technician Overtime

Supplies

Lab/field supplies

Field related expenses (travel, boat time, shipping)

Analytical costs (stable isotopes, nutrients, Ra, Rn, 210Pb)

Reports/Publications

Travel

Domestic travel to conferences (1/yr)

Overhead

In-Kind

Swarzenski salary: 2 month + fringe

Grossman salary: 2 month + fringe

Island County Planning and Community Development – \$21,480

Island County proposes the following scope of work to conduct storm water quality monitoring activities in the Town of Coupeville. The County shall measure the surface freshwater parameters routinely monitored in Island County and measured for the Town of Coupeville during a 2008/2009 water year surface water study. The specific parameters to be sampled and standard operating procedures shall be part of a Quality Assurance Project Plan to be developed by the Town or their project partners.

Task 1 – Administration and project management (\$1,400)

The county will administer, maintain, and manage the project. Compilation and submission of water quality data will be included in this task.

Task 2 – Preparation of Quality Assurance Project Plan (\$1,500)

Under this task the County will assist the Town or their associates in completing a Quality Assurance project Plan (QAPP) describing in detail the study objectives and associated procedures and methodologies that will be used to ensure the objectives are met. The QAPP will include detailed information on the Town's water quality monitoring project

including types of data and samples to be collected, sampling locations, frequency, procedures, analytical methods, data quality objectives, quality control procedures, data management protocols and data assessment procedures. A discussion of data accuracy and statistical requirements will be included. The QAPP will be designed in accordance with the Washington State Department of Ecology (DOE) Guidelines for Preparing Quality Assurance Project Plans for Environmental Studies (July 2004).

Required Performance:

1. The draft QAPP for storm water quality monitoring will be submitted to the Town or their associates within 45 days from the date of contract approval.
2. If changes are required to gain WA DOE or US EPA approval of the QAPP, the County shall make the necessary changes and return a final draft to the Town or their associates within 15 days from receiving the edited draft.

Task 3 – Water Quality Monitoring (\$15,000)

The County will conduct monitoring of specific water quality parameters including fecal coliform bacteria, nutrients and other pollutants potentially found in Coupeville storm water over a one-year period. This monitoring will be performed in accordance with the sampling methodologies and quality assurance procedures specified in an approved QAPP.

Sampling frequency of each parameter is described in more detail below:

- A. Fecal Coliform Bacteria: The County will collect samples for fecal coliform bacteria at the five primary Coupeville storm water outfalls. This sampling will assist in calculating fecal coliform bacteria loading from specific areas within the Town. These samples will be collected from each outfall every month (as flow permits) over a 24 month period. One additional sample shall be taken during August, November, February and May (as flow permits).
- B. Nutrient analysis: Island County will collect nitrate, nitrite and ortho-phosphorus samples (as flow permits) during the 24 months of the project with an additional sample of each parameter, as well as total nitrogen during August, November, February and May (total nitrogen will be sampled only once during these months).
- C. Electro-Chemical Parameter: Temperature, pH, Dissolved Oxygen, Conductivity, and Turbidity. Electro-chemical parameters will be collected during all sampling events.
- D. Flow and precipitation monitoring: Monitoring of total flow and localized precipitation rates will occur during all sites. This information is vital to understanding total pollutant loads.

Required Performance:

Monitoring identified parameters at the frequency described in 3a – 3d over a 24 month period (~summer 2010 – summer 2012) at 5 locations within the Town. Replicate and trip blank samples will be included for quality assurance at a frequency established in the QAPP.

Total = \$17,900

Indirect Admin = \$3,580 (@ 20%)

Contractor to be determined – \$75,000

Task 3 - Final Reclaimed Water Feasibility Assessment:

Activities:

- A. Based on all information and data collected under the preceding tasks the RECIPIENT will

prepare a Penn Cove Shellfish Bed Reopening Feasibility Assessment Report which will include results and conclusions.

Technical and scientific information will identify impediments to healthy Penn Cove shellfish harvest and the steps needed to remove them. Recommended actions pertaining to restoration and protection management strategies will be presented. The report will include pertinent GIS figures, data tables, and photographic documentation. Action steps will include a recommended restoration plan. A draft assessment report will be submitted to the EPA for review, comment and approval prior to issuing a final report. Report will include an analysis of technical feasibility of dealing with storm water, ground water and waste water issues uncovered in preceding tasks. A comparison of various treatment, water supply, distribution and use alternatives and a basis for selection or rejection of alternatives will be provided. Selection will be made of the most promising alternatives for further evaluation. Consideration of reliability of water supply, value of reclaimed water and associated nutrients, groundwater augmentation, stormwater management, waste water treatment and water quality benefits will be included in the assessment. Estimation of capital costs, operational and maintenance costs, engineering feasibility, energy analysis, environmental and water quality impacts, public and market acceptance and water rights will be addressed. Finally, using life cycle costs, a comparison of unit costs of stormwater and waste water treatment to reclaimed water for the same market under present and future conditions. The analysis will account for avoided costs associated with water disposal and mitigation of environmental impacts, and the market value of the reclaimed water resource. Reference information regarding public acceptance planning in similar regional programs will be studied and applied to the project. Similarly local planning and other governmental policies as well as state policy and regulations will be analyzed for potential impact to project feasibility. Analysis will include any recommended future actions related to policy changes. This task will build upon the Washington Department of Ecology and Health coordination task included in this project.

Required Performance:

1. Development and submission of Draft Feasibility Assessment Report
2. Development and submission of Final Feasibility Assessment Report

Island County Marine Resources Committee – \$35,000

During the information and data collection process under the preceding tasks the RECIPIENT will coordinate with Washington State Departments of Health and Ecology for future shellfish bed reopening.

During all periods of performance the RECIPIENT will inform, coordinate and respond to the advice and guidance of local Washington State Department of Health and Ecology staff on project planning and future request for reassessment of the currently closed shellfish bed areas. The principle focus of this task will be a small, incremental coordination between project technical staff completing project tasks and the relevant state regulators. The end purpose of the staff is seamless and timely final coordination of the re-assessment by Washington State of the currently closed Penn Cove shellfish harvest areas.

Performance:

1. Coordination of technical discoveries and data with Washington State Departments of Health and Ecology staff during the life of the project
2. Development and submission of Coordination Report

Contractor to be determined (may be folded into other researchers' workplans) – \$7,927

A. Under this task the RECIPIENT will prepare a quality assurance project plan (QAPP) for the

program that will describe in detail the study objectives and the associated procedures and methodologies that will be used to ensure these objectives are met. The QAPP will include detailed information on the water quality monitoring approach including; types of data and samples to be collected, sampling locations, sampling frequency, sampling procedures, analytical methods, data quality objectives, quality control procedures, data management protocols, and data assessment procedures. Flow monitoring will be included in selected locations to support future, potential marine TMDL development. The monitoring approach will include an explanation of how the project will yield sufficient information to achieve the purpose and intent of the monitoring. Finally, a discussion of data accuracy and statistical requirements will be included. The QAPP will be designed in accordance with Guidelines for Preparing Quality Assurance Project Plans for WA DOE Environmental Studies (July 2004).

- B. The RECIPIENT will submit the QAPP to the EPA for review, comment, and approval prior to commencing any monitoring activities.

Required Performance:

3. Draft QAPP for water quality monitoring by _____ 2010
4. Final QAPP for water quality monitoring by _____ 2010

Western Washington University – \$99,130

Personnel: (a 3% annual cost of living increase has been incorporated for salaries in years 2 and 3)

- Principal Investigator: Salary is budgeted at 0.16, 0.15 and 0.085 FTE's for Dr. Van Alstyne in years 1, 2, and 3, respectively.
- Research Associate: Salary is budgeted 0.114, 0.105, and 0.025 FTE's for an Exempt Research Associate (Sue-Ann Gifford) who will assist with data sonde calibration, maintenance, and deployment, will attend annual meetings, and will assist with the preparation of annual and final reports.
- Marine Technologist: Funds are included for a Marine Technologist I for 16 hours per year (@\$19.88/hr) as a diver to retrieve and deploy data sondes in Years 1 and 2.

Benefits: Benefits are 30%, 45% and 45% of salaries for the PI, Research Associate, and Marine Technologist, respectively, as required by WWU.

Supplies: Five hundred dollars (\$500) is also budgeted annually in Years 1 and 2 for SCUBA equipment maintenance and repairs and air fills. Three thousand dollars (\$3000) is budgeted in Year 1 for the construction of a device for towing data sondes. In year 1, \$3500 is budgeted for a chlorophyll sensor that will be added to a Hydrolab data sonde that is already owned by WWU. In years 1 and 2, \$500 is budgeted annually for chemicals for calibrating the Hydrolab data sondes. One thousand dollars (\$1000) is budgeted in years 1 and 2 for repairs to the Hydrolab data sondes. These sondes are five years old and have spent the majority of that time in seawater. Repair costs are based on historical uses for similar projects.

Travel: Funds are requested for 4 roundtrips to Penn Cove (60 miles @\$0.55/mile) in Years 1 and 2 for sonde deployment and sampling. Funds are also budgeted for one roundtrip annually to Seattle (200 miles per trip @ 0.55/mile) for meetings with project participants.

Other Direct Costs: In Years 1 and 2, \$1320 (2 trips x 6 hrs/trip x \$110/hr) is budgeted annually for the use of SPMC research vessels to retrieve underwater data sondes (2 trips x 6 hours/trip@\$110/hour). Boat fees include the cost of a boat skipper and one AAUS-certified diver.

Indirect Costs: Indirect costs are calculated as 53.1% of salaries as required by WWU.

OTHER - \$33,090.00

The Northwest Straits Foundation currently has no federally negotiated indirect rate and is including overhead costs in the 'Other' object class category. USEPA funding will account for more than 25% of the Foundation's yearly budget during the 36 months of this proposed project. Therefore, we are requesting 25% of total overhead costs. See Table 1 for overhead costs breakdown. Total project cost - \$33,090.00.

Non-federal in-kind contributions

Table 1. Overhead costs breakdown

| Other direct costs | unit price | annual expense | 3-year expense | 100% cost | 25% cost |
|--------------------------------------|-------------|----------------|----------------|----------------------|---------------------|
| rent/mo. | \$ 710.00 | \$ 8,520.00 | \$ 25,560.00 | \$ 25,560.00 | \$ 6,390.00 |
| travel/mo. | \$ 450.00 | \$ 5,400.00 | \$ 16,200.00 | \$ 16,200.00 | \$ 4,050.00 |
| printing/copy etc. | \$ 500.00 | \$ 1,100.00 | \$ 3,300.00 | \$ 3,300.00 | \$ 825.00 |
| computer support and maintenance/mo. | \$ 100.00 | \$ 1,200.00 | \$ 3,600.00 | \$ 3,600.00 | \$ 900.00 |
| telephone & internet/mo. | \$ 200.00 | \$ 200.00 | \$ 600.00 | \$ 600.00 | \$ 150.00 |
| utilities/mo. | \$ 200.00 | \$ 200.00 | \$ 600.00 | \$ 600.00 | \$ 150.00 |
| accounting/audit/yr. | \$20,000.00 | \$20,000.00 | \$ 60,000.00 | \$ 60,000.00 | \$ 15,000.00 |
| insurance/yr. | \$ 4,000.00 | \$ 4,000.00 | \$ 12,000.00 | \$ 12,000.00 | \$ 3,000.00 |
| office expenses | \$ 3,500.00 | \$ 3,500.00 | \$ 10,500.00 | \$ 10,500.00 | \$ 2,625.00 |
| | | | | | |
| | | | | | |
| total | | | | \$ 132,360.00 | \$ 33,090.00 |