

**NEP Pathogen Grant
Implementation Strategy
2012 Work Plan**

June 15, 2012



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National Estuary Program Pathogen Grant

A. Summary Information

Purpose, Objectives, and Major Categories

This National Estuary Program (NEP) Lead Organization cooperative agreement to prevent, reduce and control pathogens in Puget Sound was awarded to the Washington Department of Health in February 2011. This was one of seven NEP Lead Organization assistance agreements that the Environmental Protection Agency (EPA) awarded at that time to Management Conference Partners to support Puget Sound recovery. An 'Overview of the Puget Sound National Estuary Program Management Conference and Funding Agreements under CWA Section 320' is provided as an appendix and introduces the general role and relationship of these Lead Organizations. This amended work plan has been developed and formatted to be consistent with the National Estuary Program FFY 2012 Funding Guidance.

Pathogens enter Puget Sound from wastewater treatment plants, onsite sewage systems, livestock, vessels, and stormwater runoff. Approximately 100 wastewater treatment plants discharge to Puget Sound. About 300 large onsite sewage systems and more than a half million small onsite sewage systems are located in the Puget Sound basin. According to the Puget Sound Action Agenda, commercial agriculture, small farms and rural development comprise about 30 to 35% of the lands in Puget Sound which can produce sediment, nutrient, pathogens, and toxins that find their way into Puget Sound. Commercial and recreational boats can contribute to water quality problems when sewage is discharged into the Sound.

Pathogens present a public health risk through consumption of shellfish and contact with polluted waters through recreational activities. Of the approximately 190,000 shellfish harvest areas in Puget Sound, about 36,000 acres—or about 19% of commercial and recreational shellfish beds—are closed due to pollution. Over the past 30 years, Department of Health, Office of Shellfish and Water Protection (OSWP) has downgraded the classification of about 56,000 acres and upgraded the classification of about 46,000 acres. Restoring shellfish growing areas, avoiding shellfish closures, and protecting people from disease are primary objectives of the Pathogen Grant.

Pathogen pollution comes from many sources and land uses. OSWP has focused pathogen grant investments in rural and agricultural lands which cover about a third of the Puget Sound region. There are seven major areas of focus where we believe we will have the greatest impact:

- Onsite sewage system (OSS) management

- Pollution Identification and Correction programs
- Livestock management
- Recreational and commercial vessels
- Centralized wastewater/stormwater
- Pathogen monitoring, research, data management and reporting systems
- Cross-cutting projects

OSWP has two primary approaches for improving pathogen source control. Two-thirds of the six year Pathogen Grant budget will be invested directly in local programs and practices to improve management for OSS, livestock, sewage from vessels, rural stormwater, and other pollution sources. In addition to these direct local investments, we will use funds to build regional infrastructure to support local pathogen management programs.

Alignment with the Puget Sound Action Agenda

To encourage focused attention on specific actions needed to address threats to Puget Sound, the Puget Sound Partnership has identified three strategic initiatives: protection of habitat to support salmon recovery; protection of water quality from urban stormwater runoff; and protection of shellfish from rural runoff.

This proposed work plan supports at least three of the Puget Sound Action Agenda's twenty ecosystem recovery targets including shellfish beds re-opened, onsite sewage, and swimming beaches. The outputs and/or outcomes of each sub-award will be assessed for their relative contribution to these recovery targets and the findings will be documented through EPA's FEATS reporting system.

These three Action Agenda ecosystem recovery targets provide a framework for investments.

1. The recovery target for shellfish calls for a net increase of 10,800 harvestable shellfish acres from 2007 to 2020. OSWP has identified restoration opportunities to upgrade polluted shellfish growing areas in Puget Sound which are summarized on the 2020 Shellfish Restoration Table in the Appendix. The table provides direction for restoration efforts in Puget Sound.
2. The second recovery target aims to achieve a high level of OSS management in marine recovery areas and other designated areas sensitive to pathogen pollution. The 2020 goal is to help counties inventory all OSS, achieve a 95 percent inspection rate, and fix all failures found in these areas.
3. The third recovery target aims to ensure that all monitored beaches meet enterococcus standards.

The Six Year Implementation Strategy in section C shows how major investment areas and projects link to specific elements of the Action Agenda.

Sequence of Investments in Major Categories

OSWP and other LOs have developed strategies for six years of federal funding. Year 1 through 6 corresponds to federal grants for 2010 through 2016. The Lead Organizations received year 1 and 2 funds in 2011. Each area of investment is described below along with the sequence of investments planned over the life of the grant.

A. Onsite Sewage System Management

Local OSS Management Support

Puget Sound local health jurisdictions (LHJs) are required to develop and carry out plans to ensure that OSS are properly managed to protect public health and water quality with emphasis on operation and maintenance (O & M) activities in areas sensitive to pathogen pollution. All twelve Puget Sound counties have developed local management plans and most have designated one or more marine recovery areas or other areas for enhanced OSS management.

The ecosystem recovery target in the Puget Sound Action Agenda calls for enhanced management for OSS located in marine recovery areas and other areas that are sensitive to pathogen pollution. Currently, state and local funding are inadequate to support the level of OSS management needed in Puget Sound. Funding in years 1 through 6 will help LHJs build capacity to inventory and inspect OSS and fix failures. Through a competitive process in years 1 and 2, ten of twelve Puget Sound LHJs received awards up to \$150,000 to implement local OSS management programs. Over the course of six years, approximately 29 percent of the Pathogen Grant will support OSS management programs and other OSS work either through competitive or direct awards to individual counties and through projects that help build a sustainable regional infrastructure for on-site sewage management.

Regional OSS Management Support

Funding

In the fall of 2011, OSWP met with LHJs to identify OSS issues which could benefit most from regional support. Funding topped the list. OSWP will use funds from year 2 of the Pathogen Grant to work with key regional interests, research issues and needs, and develop a regional funding proposal to support local OSS programs. Thurston County Health Department successfully led an effort in 2012 to pass legislation (SSB 6116) to

allow counties to collect fees for local OSS management via property tax statements. Thurston County is also using PIC funds to explore funding options for converting OSS to sewers in areas that border urban growth areas. All these projects are in the Puget Sound Action Agenda.

Best Practices/Regional Resources

The Pathogen Grant will be used to develop other tools and information to improve local OSS programs and help local health jurisdictions meet the OSS recovery target. Identifying successful OSS management practices will result in better and more consistent programs throughout the region and provide criteria to guide future investments. Year 1 funds supported the development of a video to help property owners understand and care for their OSS which many local health departments will use. Year 3 funds (2012) will support another Action Agenda project, assessing best practices and performance standards and recommending approaches to improve O & M programs. This analysis will apply the adaptive management principles described in this document on page 12. In years 4 through 6, OSWP will continue to work with the local health jurisdictions, the Pathogen Core Group, and the Pollution Advisory Group to identify other regional opportunities and investments to build OSS management capacity in Puget Sound.

B. Pollution Identification and Correction (PIC) Programs

Local PIC Program Support

About 30 percent of the six year Pathogen budget will be allocated to local PIC programs or regional support for PIC. PIC programs monitor watersheds for fecal coliform bacteria. Pollution hot spots trigger intensive community outreach and property surveys to identify and correct sources such as onsite sewage systems and livestock. Investigators work with property owners to correct problems by providing technical assistance, incentives and if necessary, enforcement. We provided awards to eight Puget Sound counties to establish or implement PIC programs in years 1 and 2. In year 3, we will award at least two more grants to counties for PIC programs. For years 4 through 6, we plan to continue to support PIC programs where needed in Puget Sound to protect watersheds that influence areas with significant shellfish resources and high use swimming beaches. The threatened list for shellfish growing areas and the shellfish restoration table in the Appendix will be consulted to help guide where we offer funds and begin coordinating and negotiating scopes of work with counties. Monitoring data obtained through the BEACH program will be used to identify high risk recreational beaches which need protection.

Recreational Beaches

People are exposed to disease causing organisms of various sorts when they play in contaminated water. The Departments of Ecology and Health currently receive federal

funding to monitor enterococci bacteria in popular Puget Sound beaches and notify the public about health risks. Funding for years 1 through 3 has increased the number of beaches monitored in Puget Sound. Over 2 percent of the Pollution Identification and Correction category of the Pathogen Grant is allocated for this work. Federal funding for the BEACH program may end in 2013. When the status of federal base funding is known, the Pathogen Core group will evaluate the direction of future support for the BEACH program in consideration of the near term actions for the BEACH program in the Action Agenda. Coordinating monitoring through the BEACH program and PIC to improve and protect recreational beaches as described in the Action Agenda will occur in years 4 through 6.

Regional PIC Support

Standards of Practice

Establishing PIC standards early will benefit local programs by identifying essential elements of successful PIC programs. Addressing the challenges that counties face when they respond to state water quality violations is an important aspect of this work. We will work with counties, EPA, Department of Ecology and tribes to develop PIC standards and identify roles and responsibilities for local and state agencies. We will use the standards to guide funding decisions and create a supportive infrastructure for PIC in the Puget Sound region. Comments from local agencies that serve on the Pollution Advisory Committee for the Pathogen and Toxics/Nutrient grants have identified promising ideas for sustainable funding, supportive legislation and policies and suggestions for state assistance to support local pathogen management in Puget Sound. Their comments are included in the Appendix. We will continue to work with local jurisdictions and other stakeholders to develop these ideas.

Sharing Resources

Counties that have PIC programs funded in years 1 and 2 are developing resources that will be helpful for counties that are just beginning their PIC programs or for counties that receive future PIC investments. Thurston and Kitsap Counties have been doing PIC work for years and their experience provides valuable models for establishing standards to help new programs. Good examples of county and tribal co-management will be provided by Mason County and a planning effort led by the Hood Canal Coordinating Council will coordinate a regional PIC program for Hood Canal by Jefferson, Kitsap and Mason Counties and the Skokomish and Port Gamble S'Klallam tribes. Since PIC addresses multiple pathogen sources, the regional resources developed for OSS and agriculture will also benefit PIC programs. OSWP will be on the lookout for examples of successful PIC work and will share practices and resources with the counties that receive PIC awards.

C. Livestock Management

Agricultural investments made through the Pathogen Grant are closely tied to PIC programs because they address two critical components of successful PIC programs— incentives and enforcement. The Department of Ecology and OSWP contributed year 1 and 2 funds from the Toxics/Nutrient Grant and Pathogen Grant for a Clean Water Best Management Practices (BMP) fund to help landowners correct pollution problems from livestock. Many Puget Sound counties are challenged in their attempts to achieve landowner compliance with water quality standards for farm pollution. Ecology and OSWP are pooling funds from year 3 to conduct agricultural inspections and enforcement as needed for counties with significant agriculture and for counties that receive PIC awards. This work carries out elements of the Shellfish Initiative for the Pollution Control Action Team, a coordinated multi-agency effort to protect shellfish beds in Puget Sound. Efforts will be initially focused in Whatcom County starting in 2012.

Directors from Departments of Ecology, Agriculture and Health and the Conservation Commission will identify priority areas to better target and coordinate voluntary incentive and regulatory programs for rural landowners and working farms. Funds from years 4 through 6 of the Pathogen Grant will provide resources to help implement their recommendations.

D. Recreational and Commerical Vessels

The Pathogen Grant will fund the development of a petition to EPA to establish a No Discharge Zone (NDZ) to prohibit recreational and commercial vessels from discharging sewage in all or parts of Puget Sound. Department of Ecology is leading this effort assisted by People for Puget Sound, Washington State Parks and the Environmental Protection Agency. Year 1 investigates what is needed to put together a successful application including an analysis of pump out capacity. Efforts in year 2 will continue to gather information to fill data gaps, obtain input from various stakeholder groups, determine the geographic expanse of the NDZ, and culminate in a draft petition to EPA. Years 3 through 6 will continue outreach to garner support for the program and improve pump out capacity resulting in the final petition to EPA when sewage management facilities are sufficient to support the designation.

E. Centralized Wastewater/Stormwater

Of all the sources of pathogens that enter Puget Sound, reducing impacts from municipal treatment plants and stormwater outfalls is most challenging. The east side of Puget Sound from Everett to Olympia and several other areas in the Sound are closed to shellfish harvest because of these pathogen sources. The Puget Sound Action Agenda identifies no new initiatives and focuses on continuing programs for municipal discharges. It is beyond the

financial scope of the Pathogen Grant and transcends OSWP's responsibility to correct sources and address the impacts from millions of gallons of wastewater that flow into Puget Sound every day. However, OSWP believes that improving coordination among the agencies that manage outfalls and addressing knowledge gaps on currently unregulated impacts from pathogens, can help reduce impacts to shellfish and to other marine species and habitats. About 3 percent of the Pathogen Grant is allocated to address centralized wastewater impacts and pathogen research related to discharges.

Outfall Strategy

Various state resource agencies have management responsibilities for outfalls that flow into Puget Sound:

- The Department of Natural Resources as state steward of submerged lands, manages leases for outfalls and surrounding habitat.
- The Department of Ecology manages permits for wastewater and stormwater discharges and sets pollution reduction targets through its total maximum daily load (TMDL) process.
- The Department of Health is responsible for protecting public health by restricting shellfish harvest where pollution is a threat, including areas around outfalls.
- The Department of Fish and Wildlife manages permits for work that occurs in aquatic lands.

Year 1 funds have been budgeted for work to begin in 2012 to develop a coordinated plan, produce a prioritized list of outfalls for pollution reduction or removal and identify a sustainable funding plan for implementing an outfall strategy. Funding from years 4 through 6 will focus on implementation of the coordinated, prioritized work plan as budget allows to protect shellfish beds from wastewater and stormwater impacts. A primary focus of the strategy will be to develop and implement an agreement with Department of Ecology that allows DNR ample time to provide actionable comments on new or renewing NPDES permits, with objectives, timelines and benchmarks for impact reductions, and with increased attention to the outfalls on the priority list.

F. Pathogen Monitoring, Research, Data Management and Reporting Systems

OSWP is using National Estuary Program (NEP) funds to improve our data management and reporting systems to reduce public exposure to disease. OSWP reduces the risk of disease and death by monitoring and reporting on shellfish area closures and biotoxin threats and disseminates this information primarily through our website, which receives over 1.3 million hits per year. Commercial and recreational shellfish growers, harvesters, and consumers rely on OSWP monitoring and closure information to make decisions about when and where it is safe to harvest shellfish. The current data system, designed to

respond to threats that emerge suddenly, was developed in the mid-1990s using a platform that is no longer reliable. The system is becoming unstable and this threatens our ability to act quickly and efficiently in order to protect public health.

The Pathogen Grant is helping us build a safer, more effective, and dependable data management and reporting system that will shorten the time between data collection, input, and notification. The system will improve our ability to adaptively manage pathogens through source control efforts and share data with stakeholders and the public.

Funds from years 1 and 2 will allow us to combine our current interactive maps, recreational shellfish closure database and water quality and harvest site database onto one stable, easy to view data system on a modern and stable platform. In year 3, we will add features to the database that increase data sharing with the public and our partners, increase transparency of data, provide better customer service, and increase efficiency. In years 4 through 6, we will continue to improve the data system and explore links to other systems, such as the Washington State Coastal Atlas.

Pathogen Research

Protecting people from pathogens relies on the ability to estimate risk and delineate where and when it is safe to harvest shellfish. We are investing in research and monitoring that will help agencies evaluate shellfish safety risk and make better decisions on shellfish area classification and status. Projects for years 1 through 3:

- Development of a monitoring, laboratory analysis, and public notification program to track the dinoflagellate that causes diarrhetic shellfish poisoning (DSP) recently found in Puget Sound.
- Water quality studies of selected shellfish wet storage areas in Puget Sound will help correlate environmental conditions with potential causes of illness that may restrict harvest.
- Public domain nitrogen removal technologies for OSS will be evaluated for their ability to also reduce pathogens. Standards and guidelines for their use will be developed if testing shows the systems are effective and reliable.

Projects planned for years 4 through 6:

- Projects in support of FDA efforts to evaluate MS2 coliphage (MSC) as a viable viral indicator for human sewage. Studies to generate additional information and data are needed to better define how MSC could potentially be used for shellfish growing area management and classifications. Studies will include shellfish uptake, sewage treatment evaluations, and assessment.

- Modeling of circulation patterns and typical fecal coliform loads of Salish Sea rivers. This will help to determine the fraction of pathogens that originate from the watershed and estimate the effect that climate and land use change will have on pathogens.

G. Cross-Cutting Projects

Recognizing that many projects most valuable for Puget Sound's recovery often deal with more than one area of emphasis, the Lead Organizations and EPA agreed to set aside 10 percent of the NEP funds for cross-cutting projects. The LOs decided to use cross cutting funds to support a Quality Assurance Coordinator to provide guidance and review of quality assurance project plans. For years 1 and 2, LOs funded their own projects which have cross cutting characteristics. Of all the Pathogen Grant investments, PIC and the Outfall Strategy are the most cross-cutting by nature. Most PIC projects include multiple partnerships and approaches, and while most focus solely on fecal coliform bacteria, corrective actions also improve other water quality problems such as nutrients. Encouraging inter-agency coordination for outfall management addresses multiple pollution sources and reduces negative impacts to water quality and marine habitat.

For years 3 through 6, LOs will share project lists and continue to look for opportunities to invest cross-cutting funds.

Development and Guidance

The Office of Shellfish and Water Protection (OSWP) collaborated with Department of Ecology to develop a proposal which outlines a pathogen management strategy for Puget Sound in response to a request for proposals issued by EPA. The implementation strategy continues to be substantially based on the strategies outlined in the proposal. Guidance is also provided by the following groups:

- **Pathogen Core Group:** Comprised of OSWP managers, Department of Ecology, EPA and the Puget Sound Partnership, this group is critical in developing investment strategies and budgets, measuring performance, and connecting work to the Puget Sound Action Agenda.
- **Pollution Advisory Group:** This broad-based stakeholder group is convened as needed to provide guidance for pathogen grant investments. Invited entities include local integrating organizations, counties, shellfish industry members, state and federal agencies, state and municipal organizations, the scientific community, and Puget Sound protection groups. The Pollution Advisory Group has provided comments on the Pathogen Grant Implementation Strategy and 2012 Work Plan which are included in the Appendices.

- **Lead Organization Group:** State and Tribal agencies that are managing NEP grant funds (DOH, Ecology, WDFW, DNR, Commerce, PSP, NWIFC), EPA, and the Puget Sound Partnership meet twice each month to coordinate work and develop collaborative strategies to protect and restore Puget Sound.
- **Local Health Jurisdictions/Counties:** We consult with local health jurisdictions as needed to ground truth the Pathogen grant implementation strategy. OSWP holds quarterly meetings with local health jurisdictions which provide a good opportunity to update them about the grant and obtain their input for areas of investment.
- **Tribes:** We have been working with the Northwest Indian Fisheries Commission and some of the Tribes in Puget Sound to enlist their knowledge and expertise to help protect tribal shellfish resources and protect water quality with Pathogen Grant investments. Tribal comments on this document are included in the Appendices.
- **Local Integrating Organizations (LIOs):** LIOs are groups established to facilitate local implementation of the Action Agenda. OSWP recognizes that LIOs are a valuable resource to consult on making investments and carrying out projects in their communities.

Adaptive Management

Adaptive management principles provide a framework and ideal for overall grant management and for guiding the work conducted through the Pathogen Grant at the individual project level. OSWP has chosen to invest funds to build local and regional capacity for adaptive management of pathogen sources. Classic examples of the adaptive management process are the PIC and OSS management programs, which:

- Characterize the sources, pathways, loadings and effects of pathogens;
- Prescribe solutions to reduce or eliminate the impacts;
- Take action to implement identified solutions; and
- Monitor the effectiveness of solutions to determine the course of future actions.

Tracking progress and learning from the successes and challenges of individual projects allows us to build a body of experience and knowledge that we can use and share to improve management of pathogen sources. Every barrier overcome whether technical, social, political, or financial is a lesson learned that illuminates the next step forward.

To do this well, we need to analyze the work, assess how well it's advancing the Ecosystem Recovery Targets, and adjust course as needed. The next section describes this process.

Measuring Performance

We measure our progress in reference to the pathogen related ecosystem recovery targets in the Puget Sound Action Agenda. Logic models for each Pathogen Grant investment are included in the Appendix. Readers are also encouraged to reference OSWP's *2012 Shellfish Areas Listed as Failing, Threatened or of Concern* and the Shellfish Restoration table in the Appendix. Every year, OSWP evaluates the status of shellfish growing areas and summarizes the findings in an annual report called the Early Warning System summary. This report identifies locations in each growing area where water quality is threatened (close to failing the standard or pollution sources may impact public health) and areas of concern which still meet the standards for current classification but water quality is declining. The Shellfish Restoration table shows classifications of growing areas in each county linked to pathogen pollution sources. The Pathogen Core Group will use these tools to guide investments, assess performance, and make adjustments to the implementation strategy.

After the Grant

Programs and activities funded through grants are vulnerable to cuts after the money stops. With this in mind, OSWP is trying to build sustainable investments that, after the NEP funds end, will endure and fund projects which advance and accelerate our progress for meeting ecosystem recovery targets.

- Investments will strengthen local and regional infrastructure for pathogen management for OSS and PIC. We will develop options and raise awareness and support for sufficient and more reliable sources of funding to support local O & M programs and to repair or replace failing on-site sewage systems.
- We have requested local governments to include a sustainable funding plan as part of their grant funded work for OSS management and PIC.
- The outfall strategy will include a long term funding plan for implementation.
- Establishing a No Discharge Zone in Puget Sound will provide a permanent way to help reduce sewage discharges from vessels.
- The data management and reporting system is designed to last several years to serve OSWP's mission to protect people from disease.
- Improvements in pathogen monitoring and research will advance protection of public health and commercial, tribal and recreational shellfish resources.

B. Overview of 2012 Projects

Following are summaries for new and ongoing projects that will be supported with 2012 funds. These projects are shown with shading in the attached spreadsheet titled “Six Year Pathogen Grant Implementation Strategy”. Both competitive and directed sub-awards may be made under this work plan based on the guidance that has been established by the Lead Organizations for this purpose.

Main Category: OSS Management

Project: OSS Management Plans (O&M Programs) Local Support, Ongoing

Objective: Prevent OSS from polluting shellfish growing areas and protect water quality.

Description: Implement local OSS O&M programs to inventory, inspect, and fix failing OSS in priority areas of Puget Sound.

Action Area goals and sub-strategies:

- 10,800 shellfish acres restored to harvest.
- All OSS inventoried, 95% current with inspections and all failures fixed.

Sub-strategies/Near Term Actions (NTAs):

C5.1 Effectively manage and control pollution from small on-site sewage systems.

C7.1 Improve water quality to prevent shellfish downgrades and achieve upgrades.

C9.3 Restore and protect water quality at swimming beaches.

Potential Partners and their Roles: Puget Sound local health jurisdictions (LHJs) will carry out this work. Implementation of the plans and programs involves ongoing coordination with industry service providers and OSS owners. DOH provides technical and financial support. Other agencies and tribes play roles in water quality programs and projects involving OSS (e.g. PIC).

Proposed Outputs and Deliverables: OSS management programs improved, focusing on areas designated for enhanced management. Investments in core O&M functions will increase the number of designated areas, the number of OSS inventoried, the percentage of OSS current with inspections, and failures fixed.

Estimated Milestones: Within 3 months of project start date, all participating LHJs will carry out work to implement their OSS management plans. LHJs report on the recovery target biannually (1/1 and 7/1).

Estimated Budget: \$880,000 in subawards to local health jurisdictions for O & M work and OSS repairs.

Anticipated Results:

- a. **Short term deliverables:** Number of properties inspected will increase, regularity of inspections will improve, and failures will be found and fixed.
- b. **Intermediate outcomes:** Local health jurisdictions will improve management of OSS and meet the 2020 target for OSS.
- c. **Long term outcomes:** Pathogen loading to shellfish growing areas and other waters will be reduced.

CWA core programs: 4) Address diffuse, nonpoint sources of pollution, 6) protect coastal waters and Large Aquatic Ecosystems through the National Estuary Program.

Project: Large on-site sewage systems (LOSS) database documentation and data management procedures. *New*

Objective: Improve LOSS permitting and program compliance through enhanced data collection and management.

Description: DOH will assess LOSS project files, document and enter data in the LOSS database, and set up procedures to effectively collect and manage data on an ongoing basis. Key data fields include type of treatment, historical repairs, maintenance issues, and monitoring results. Data uses include LOSS permitting and compliance actions. The project advances ongoing LOSS work activities of the Puget Sound Action Agenda to more effectively track maintenance requirements and repairs. All LOSS in Marine Recovery Areas will be documented, tracked, and permitted, and wastewater treatment deficiencies addressed and corrected in a timely manner.

Action Area goals and sub-strategies:

- 10,800 shellfish acres restored to harvest.
- Human related contributions of nitrogen do not result in more than 0.2 mg/L reductions in dissolved oxygen levels anywhere in Puget Sound.

Substrategies/NTAs:

C5.2 Effectively manage and control pollution from large on-site sewage systems (LOSS).

Potential Partners and their Roles: The project will cull data from program files and other sources using a variety of means and will involve collaboration mainly with LOSS owners, local health jurisdictions, and Ecology.

Proposed Outputs and Deliverables: Perform database entry and documentation of system details and existing monitoring and performance data for LOSS.

Develop procedures to systematically collect, assess, and use data for permitting, compliance actions, and program reporting on the Puget Sound Action Agenda and GMAP. Synch up data management enhancements with other anticipated data system improvements.

Estimated Milestones: Data entry and file research will begin by July 2012 and be completed by June 30, 2013. (Assumes temporary employee works full-time for 9 months)

Database process documentation will be complete by June 30, 2013.

Estimated Budget: \$50,000

Anticipated Results:

- a. **Short term deliverables:** Fully populated database. Data entry and reports process documentation.
- b. **Intermediate outcomes:** Better permitting, program reporting, and oversight and management of LOSS data to improve compliance and react quickly to situations that are threats to public health and the environment.
- c. **Long term outcomes:** LOSS performance assurance. Protection of groundwater and surface water quality, and shellfish growing areas and swimming beaches.

CWA Core Programs: 4) Address diffuse, nonpoint sources of pollution, 6) Protect coastal waters and Large Aquatic Ecosystems through the National Estuary Program.

Project: OSS Management Plans (O&M Programs) Regional Support. *New*

Objective: Prevent OSS from polluting shellfish growing areas and protect water quality.

Description: Assess the OSS O&M programs to identify best practices, showcase successes, determine common performance standards, and recommended approaches to improve the core functions of the programs.

Action Area goals and sub-strategies:

- 10,800 shellfish acres restored to harvest.
- All OSS inventoried, 95% current with inspections and all failures fixed.

Sub-strategies/NTAs:

C5.1 Effectively manage and control pollution from small on-site sewage systems.

C5.1 NTA2 Best practices and recommended approaches to improve core functions of the OSS O&M programs.

C7.1 Improve water quality to prevent shellfish downgrades and achieve upgrades.

C9.3 Restore and protect water quality at swimming beaches.

Potential Partners and their Roles: Puget Sound local health jurisdictions will contribute input and resources to shape useful work products. Other agencies and interests will be consulted as appropriate to refine the analysis and work products.

Proposed Outputs and Deliverables: Specific outputs will be determined in project design phase. Findings and products will be shared broadly and used to improve the programs and progress achieving the OSS recovery target.

Estimated Milestones: Project design completed by December 2012 and final analysis completed by June 2014.

Estimated Budget: \$150,000

Anticipated Results:

- Short-term Deliverables:** The project will take the form of an adaptive management analysis to improve the O&M programs and help LHJs meet the OSS recovery target.
- Intermediate outcomes:** Improved regional consistency on key program elements and outputs; added progress inventorying, inspecting, and fixing OSS.
- Long term outcomes:** Reduced pathogen loading to shellfish growing areas and other waters.

CWA Core Programs: 4) Address diffuse, nonpoint sources of pollution, 6) Protect coastal waters and Large Aquatic Ecosystems through the National Estuary Program.

Main Category: Pollution Identification and Correction (PIC)

Project: PIC Local Support, On-going program. *New*

Objective: Prevent multiple pathogen sources from polluting shellfish growing areas and impacting water quality.

Description: Fund PIC local programs to reduce pollution from OSS, livestock, stormwater runoff, and other pathogen sources.

Action Area goals and sub-strategies:

- 10,800 shellfish acres restored to harvest.
- All OSS inventoried, 95% current with inspections and all failures fixed.
- All monitored beaches meet enterococcus standards.
- Human related contributions of nitrogen do not result in more than 0.2 mg/L reductions in dissolved oxygen levels anywhere in Puget Sound.

Sub-strategies/NTAs:

C.3.1 Target voluntary and incentive based programs for farms.

C5.1 Effectively manage and control pollution from small on-site sewage systems.

C7.1 Improve water quality to prevent shellfish downgrades and achieve upgrades.

C9.4 NTA1 Create sustainable PIC programs.

C9.3 Restore and protect water quality at swimming beaches.

Potential Partners and their Roles: Puget Sound counties are leads for PIC programs in partnership with conservation districts, tribes, Department of Ecology, and other state and local partners.

Proposed Outputs and Deliverables: Pathogen sources will be identified and corrected. Deliverables include monitoring data, outreach activities to engage the public, technical assistance site visits, and BMPs installed to correct problems.

Estimated Milestones: Within 6 months of project start date, all participating counties will have prioritized work plans. Within 9 months, counties will be monitoring and

identifying pollution sources. Within 12 months, counties will be working with landowners to correct problems.

Estimated Budget: \$1,083,000

Anticipated Results:

- a. Short term deliverables:** Counties will develop coordinated multi-organizational programs which will result in monitoring data that identifies pollution problems. Outreach activities, technical assistance, and incentives will be provided to landowners.
- b. Intermediate outcomes:** Coordinated local programs will effectively identify and correct pathogen sources.
- c. Long term outcomes:** Pathogen loading to shellfish growing areas and other waters will be reduced.

CWA Core Programs: 2) Identify polluted waters and develop plans to restore them. 4) Address diffuse, nonpoint sources of pollution, 6) Protect coastal waters and Large Aquatic Ecosystems through the National Estuary Program.

Project: PIC Regional Support. *New*

Objective: Prevent multiple pathogen sources from polluting shellfish growing areas and impacting water quality.

Description: Work with federal, tribal, state, and local partners to develop standards and best practices for PIC to help evaluate current programs and guide future investments.

Action Area goals and sub-strategies:

- 10,800 shellfish acres restored to harvest.
- All OSS inventoried, 95% current with inspections and all failures fixed.
- All monitored beaches meet enterococcus standards.
- Human related contributions of nitrogen do not result in more than 0.2 mg/L reductions in dissolved oxygen levels anywhere in Puget Sound.

Sub-strategies/NTAs:

C.3.1 Target voluntary and incentive based programs for farms.

C5.1 Effectively manage and control pollution from small on-site sewage systems.

C7.1 Improve water quality to prevent shellfish downgrades and achieve upgrades.

C9.4 NTA1 Create sustainable PIC programs.

C9.3 Restore and protect water quality at swimming beaches.

Potential Partners and their roles: Puget Sound counties, conservation districts, tribes, Department of Ecology, EPA, and Puget Sound Partnership will be consulted during development of this resource.

Proposed Outputs and Deliverables: PIC protocols, standards and best practices.

Estimated Milestones: Within 3 months of project start date, a project team will be convened; in 9 months, drafts will be reviewed; in 12 months, work products will be completed.

Estimated Budget: \$45,440

Anticipated Results:

a. Short term deliverables: PIC guidance developed

b. Intermediate outcomes: The guidance document will improve PIC programs and help counties effectively identify and correct pathogen sources.

c. Long term outcomes: Pathogen loading to shellfish growing areas and other waters will be reduced.

CWA Core Programs: 2) Identify polluted waters and develop plans to restore them. 4) Address diffuse, nonpoint sources of pollution, 6) Protect coastal waters and Large Aquatic Ecosystems through the National Estuary Program.

Project: BEACH monitoring and notification program. On-going project

Objective: Prevent people from exposure to pathogens and protect public access to safe, swimmable beaches.

Description: Monitor beaches and notify the public about closures and health risks.

Action Agenda goals and sub-strategies:

B4.2 Increase access to and knowledge of publicly owned Puget Sound shorelines and the marine ecosystem.

Potential Partners and their roles: Department of Ecology, DOH along with counties and local volunteers who help with the monitoring.

Proposed Outputs and Deliverables: Monitoring data, public notices.

Estimated Milestones: By the end of summer 2012, 20 additional beaches will have been monitored and posted as necessary.

Estimated Budget: \$79,560

Anticipated Results:

- a. **Short term deliverables:** Monitoring data and notification will alert people to risks.
- b. **Intermediate outcome:** People will be protected from disease at high risk, popular swimming beaches.
- c. **Long term outcome:** Fewer people contract disease.

CWA Core Program: 4) Address diffuse, nonpoint sources of pollution.

Main Category: Livestock Management

Project: Nonpoint technical assistance inspections. *New*

Objective: Prevent livestock from polluting shellfish growing areas and protect water quality.

Description: Conduct nonpoint inspections in rural areas and provide resources and technical assistance to landowners to install best management practices to reduce pollution from farms.

Action Area goals and sub-strategies:

- 10,800 shellfish acres restored to harvest.
- Human related contributions of nitrogen do not result in more than 0.2 mg/L reductions in dissolved oxygen levels anywhere in Puget Sound.

Sub-strategies/NTAs:

C.3.1 Target voluntary and incentive based programs for farms.

C7.1 Improve water quality to prevent shellfish downgrades and achieve upgrades.

C7.1 NTA3 Pollution Control Action Team

Potential Partners and their Roles: Department of Ecology will conduct inspections in coordination with Puget Sound counties and conservation districts.

Proposed Outputs and Deliverables: Inspection completed, problems identified, BMPs installed.

Estimated Milestones: Prioritized work plan coordinated with Whatcom County, conservation district and other partners completed within 6 months of start date. Inspections begin within 8 months. Inspections completed by December 2015.

Estimated Budget: \$314,000

Anticipated Results:

- a. **Short term deliverables:** Inspections will identify problems, technical assistance will be provided, and BMPs will be installed.
- b. **Intermediate outcomes:** Landowners and communities attain knowledge and resources to help them reduce pollution. Livestock are better managed.
- c. **Long term outcomes:** Pathogen loading to shellfish growing areas, swimming beaches, and other waters is reduced.

CWA Core Programs: 4) Address diffuse, nonpoint sources of pollution, 6) Protect coastal waters and Large Aquatic Ecosystems through the National Estuary Program.

Main Category: Recreational and Commercial Vessels

Project: Improve Pump-out Access at Mystery Bay State Park. *New*

Objective: Prevent sewage from commercial and recreational vessels from polluting shellfish growing areas; protect water quality.

Description: The Mystery Bay Management Plan (<http://www.ora.wa.gov/regulatory/default.asp>) was implemented to prevent a permanent downgrade of commercial shellfish beds in Mystery Bay due to excessive and unauthorized boat moorage. A voluntary 'no anchor zone' directs transient vessels to the State Park mooring field and dock. Access to the pump-out at Mystery Bay State Park is hampered due to the

condition of its dock. This project would replace the decaying wooden dock with a new steel dock to improve access and usage.

Action Area goals and sub-strategies:

- 10,800 shellfish acres restored to harvest.

Substrategies/NTAs:

C6.1 NTA 2, Increase pump-out capacity and use

Potential Partners and their Roles: Washington State Parks is the lead on this project.

Proposed Outputs and Deliverables: Pump-out dock improvements, increased pump-out usage.

Estimated Milestones: Dock improvements – September 2012

Estimated Budget: \$30,000

Anticipated Results:

- Short-term deliverables:** Improved pump-out access
- Intermediate outcomes:** Increased pump-out usage
- Long-term outcomes:** Less vessel sewage discharged into Puget Sound.

CWA Core Programs: 4) Address diffuse, nonpoint sources of pollution, 6) Protect coastal waters and Large Aquatic Ecosystems through the National Estuary Program.

Main Category: Pathogen Monitoring, Research, Data Management and Reporting

Project: Bacteriological reduction verification of add-on disinfection during the OSS denitrification technology testing. *New*

Objective: Project will analyze the effectiveness of add-on ultra-violet (UV) disinfection to reduce bacteria in the effluent from denitrification OSS technologies.

Description: OSWP and Ecology are evaluating nutrient removal OSS technologies through the NEP Toxics/Nutrients Grant. OSS technologies must reduce bacteria to a sufficient standard before they can be approved for high risk locations. Using the protocols outlined in Chapter 246-272A WAC, this project will evaluate the effectiveness of add-on UV disinfection to reduce bacteria of the effluent from denitrification technologies.

Action Area goals and sub-strategies:

- 10,800 shellfish acres restored to harvest.
- Human related contributions of nitrogen do not result in more than 0.2 mg/L reductions in dissolved oxygen levels anywhere in Puget Sound

Sub-strategies/NTAs:

C5.1 Effectively manage and control pollution from small OSS.

C5.1.1 OSS Best practices.

C5.1.2 OSS Nitrogen treatment technologies.

Potential partners and their Roles: OSWP will manage the project, including writing the quality assurance project plan (QAPP), verifying data, and working with the Snoqualmie wastewater treatment plant to carry out the analysis. The work will be coordinated with Department of Ecology.

Proposed Outputs and Deliverables: An approved QAPP. Fecal coliform analyses, recommended standards and guidance.

Estimated Milestones: Installation of test equipment will be completed in summer 2012. Analysis will begin by January 2013, data verification will be completed by September 2013. Standards and guidance for OSS denitrification technologies developed by December 2014.

Estimated Budget: \$10,000

Anticipated Results:

- Short term Deliverables:** Results from the study will inform evaluation of the denitrification technologies.
- Intermediate Outcomes:** Denitrification OSS technologies that are used in areas of Puget Sound sensitive to nutrient pollution will also reduce pathogens that impact shellfish growing areas and swimming beaches.
- Long term Outcomes:** Water quality, shellfish growing areas, and swimming beaches are protected.

CWA Core Program: 4) Address diffuse, nonpoint sources of pollution, 6) Protect coastal waters and Large Aquatic Ecosystems through the National Estuary Program.

Main Category: Pathogen Monitoring, Research, Data Management and Reporting

Project: Data Management and Reporting. On-going project

Objective: Adaptively manage pathogen impacts to shellfish growing areas and prevent disease from pathogens and biotoxins.

Description: Improve OSWP data management and reporting system by the development of interactive maps and providing better public access to data. OSWP's uses water quality data to manage an early warning system for threats to shellfish growing areas and to notify the public and shellfish industry of pathogen threats.

Action Agenda Goals:

- 10,800 shellfish acres restored to harvest. All OSS inventoried.
- 95% of OSS current with inspections and all failures fixed.

Sub-strategies/NTAs:

C7.1 Improve water quality to prevent shellfish downgrades and achieve upgrades.

C7.4 Enhance the public's connection to shellfish and increase recreational harvest opportunities.

Potential Partners and their Roles: Commercial and recreational shellfish growers, harvesters, and consumers will benefit through a modern, up-to-date GIS database interface that provides easy to access information. Stakeholders such as the Puget Sound Partnership, local health jurisdictions, and the EPA will get interactive access to our water quality data. Commercial shellfish companies will benefit through modernization of our payment and application processes.

Proposed Outputs and Deliverables: The new database and accompanying GIS viewer. This product will merge our "clickable maps", closure database, and water quality and harvest site database.

Estimated Milestones: The new database and GIS viewer will be rolled out in phases. The rough GIS viewer has been completed and is awaiting review. Data will be added to this viewer as it is completed. The internal clickable maps is underway and will be completed in October 2012; the external clickable maps is underway and will be completed January 2013. The database, also referred to as the "Shellfish Web App" will be completed in mid-late 2014.

Estimated Budget: \$206,000

Anticipated Results:

- a. **Short-term outcomes:** Stable and modern clickable maps that inform the public of safe recreational harvest opportunities.
- b. **Intermediate outcomes:** Combined and modernized database that provides the public and stakeholders access to our data.
- c. **Long-term outcomes:** One website that provides everything our program has to offer. It will efficiently communicate public health risks, water quality data, track pathogen threats to shellfish resources and provide service to the shellfish industry.

CWA Core Program: 6) Protect coastal waters and Large Aquatic Ecosystems through the National Estuary Program.

Main Category: Cross-Cutting

Project: Ongoing program. New projects to be determined.

Objective: Support projects which span across NEP grant categories (pollution, habitat, and watersheds) to protect and restore Puget Sound.

Description: Identify and fund projects that address pathogens as well as other types of pollutants and/or habitat and watershed issues.

Action Agenda Goals and Sub-strategies:

- 10,800 shellfish acres restored to harvest.
- Others TBD

Sub-strategies/NTAs:

C7.1 Improve water quality to prevent shellfish downgrades and achieve upgrades.

Other TBD

Potential Partners and their Roles: Will work with the other Lead Organizations and Local Integrating Organizations, other partners to identify project ideas.

Proposed Outputs and Deliverables: Project which addresses AA priorities and reduces pathogens as well as other pollutants, and/or marine habitats and watersheds.

Estimated Milestones: TBA

Estimated Budget: \$360,000

Anticipated Results: TBD

CWA Core Program: 6) Protect coastal waters and Large Aquatic Ecosystems through the National Estuary Program.

C. Six Year Pathogen Grant Implementation Strategy¹

Project Name & Description, Organized by Major Work Type or Investment Area	Action Agenda Strategies/NTAs Supported	2020 Targets Supported			Lead Entity & Partners Completing Work	Expected Outputs	Expected Outcomes	Estimated Timeframe	Estimated Cost	Budget			
		Increase of 10,800 shellfish acres	OSS inventoried, inspected, failures fixed.	Beaches meet enterococcus standards						Y 1 / 2 Funding	Y3 Funding	Y4 Funding	Y 5/6 Funding
A. Onsite Sewage System Management									29%				
Fund local OSS management programs	C5.1 C7.1 C9.3	x	x	x	Local health jurisdictions	OSS inventories, inspections and failures fixed, MRAs or equivalent established.	OSS managed to reduce pathogen loadings.	2011 - 2016	\$2,351,240	\$880,000	x	x	
Manage large OSS	C5.1 C7.1	x	x	x	DOH	LOSS inventories, inspections and failures fixed.	OSS managed to reduce pathogen loadings	2012-2016		\$50,000	x	x	
Support regional OSS management: Educational OSS video	C5.1 C7.1 C9.3	x	x	x	Local health jurisdictions, DOH	Educational video	Landowners improve management of OSS	2011-2012	\$75,000				
Support regional OSS management: Sustainable funding options for OSS	C5.3 NTA 1 C5.3 NTA 2 C5.3 NTA 3	x	x	x	DOH, local health jurisdictions, Puget Sound Partnership	Project designs Regional funding analysis	OSS programs adequately and sustainably funded	2012-2013	\$150,000				
Support regional OSS management: Guidance on OSS best practices	C5.1 C5.1 NTA 2 C7.1 C9.3	x	x	x	DOH, local health jurisdictions	Project design Guidance document developed and shared.	OSS inspection levels at 60% by 12/14 in designated areas.	2012-2014		\$150,000			
Support regional OSS management: projects to support OSS management infrastructure in Puget Sound	C5.1 C7.1 C9.3	x	x	x	DOH, local health jurisdictions	TBD	OSS managed to reduce pathogen loadings.	2014-2016			x	x	

¹ Projects being funded in whole or in part with FY12 dollars are shaded grey.

Projects being funded in whole or in part with FY12 dollars are shaded grey

Project Name & Description, Organized by Major Work Type or Investment Area	Action Agenda Strategies/NTAs Supported	2020 Targets Supported			Lead Entity & Partners Completing Work	Expected Outputs	Expected Outcomes	Estimated Timeframe	Estimated Cost	Budget			
		Increase of 10,800 shellfish acres	OSS inventoried, inspected, failures fixed.	Beaches meet enterococcus standards						Y 1 / 2 Funding	Y3 Funding	Y4 Funding	Y 5/6 Funding
B. Pollution Identification and Correction Programs									30%				
Fund local PIC programs	C3.1 C5.1 C7.1 C9.3 C9.4 NTA 1 C9.4 HC3 C9.4 WS8	x	x	x	Counties, DOH, Ecology, Conservation Districts, Tribes	PIC programs implemented. BMPs implemented.	Pathogen sources identified and fixed.	2011-2016	\$3,159,095	\$1,083,000	x	x	
Support regional PIC programs: Guidance on PIC standards and best practices.	C3.1 C5.1 C7.1 C9.3 C9.4 NTA 1	x	x	x	DOH, Ecology, EPA, Tribes, Counties, Conservation Districts, Puget Sound Partnership	PIC guidance document developed and shared.	Pathogen sources identified and fixed.	2012-2013		\$45,440	x	x	
Swimming Beaches	C9.3 NTA1			x	Ecology, DOH, local communities	Monitoring program, public notifications	Pathogen risk reduced.	2011-2016	\$159,120	\$79,560			
C. Livestock Management									9%				
Clean Water BMPs for Agricultural Activities	C3.1 C3.1 NTA 1 C7.1	x		x	Counties, Conservation Districts, Ecology, DOH	Clean Water BMP program implemented.	Clean Water BMPs implemented. Pathogen sources identified and fixed	2012-2016	\$750,000				
Nonpoint Inspections	C3.1 NTA 1 C7.1 C7.1 NTA 3	x		x	Ecology, Counties, Conservation Districts, DOH	Monitoring program, inspections conducted, BMPs installed.	Pathogen sources identified and fixed.	2012-2015		\$341,000			
Support recommendations from 3 directors (Dept. of Agriculture, Ecology and Conservation Commission) to address agricultural pollution	C3.1, NTA 1	x		x	Ecology, Conservation Commission, Department of Agriculture	BMPs	Pathogen sources identified and fixed.	2014-2016			x	x	

Projects being funded in whole or in part with FY12 dollars are shaded grey

Project Name & Description, Organized by Major Work Type or Investment Area	Action Agenda Strategies/NTAs Supported	2020 Targets Supported			Lead Entity & Partners Completing Work	Expected Outputs	Expected Outcomes	Estimated Timeframe	Estimated Cost	Budget			
		Increase of 10,800 shellfish acres	OSS inventoried, inspected, failures fixed.	Beaches meet enterococcus standards						Y 1 / 2 Funding	Y3 Funding	Y4 Funding	Y 5/6 Funding
D. Recreational and Commercial Vessels									4%				
Prepare No Discharge Zone petition	C6.1 NTA 1	x		x	Ecology, State Parks, EPA, People for Puget Sound, DOH, stakeholders	NDZ Petition	No Discharge Zone in part or all of Puget Sound.	2011-2013	\$300,000			x	x
Increase pump out capacity and use.	C6.1 NTA 2	x		x	State Parks, Ecology, Counties, Environmental organizations.	Sufficient pump out capacity. Outreach to encourage pump out use.	Reduced pathogen loading from vessels.	2012-2016	\$30,000	\$30,000		x	x
E. Centralized Wastewater/Stormwater									3%				
Outfall Strategy		x		x									
Develop an outfall strategy	B.3.1 NTA2	x		x	DNR, DOH, Ecology, DFW	Strategy	Reduced pathogen loading from outfalls	2012-2013	\$25,000				
Create a prioritized outfall list/work plan	B.3.1 NTA2	x		x	DNR, DOH, Ecology, DFW, Counties, Tribes	List/work plan	Reduced pathogen loading from outfalls	2012- 2014	\$25,000				
Implement outfall strategy	B.3.1 NTA2	x		x	DNR, DOH, Ecology, DFW, Counties, Tribes	Outfall projects implemented.	Reduced pathogen loading from outfalls	2014-2016				x	x
F. Pathogen Monitoring, Research, Data Management and Reporting Systems													
Expand biotoxin monitoring	C7.5 NTA 2	x			DOH, NOAA, local volunteer monitoring organizations	Monitoring program, dsp database, lab protocols	Pathogen risk reduced.	2012-2013	\$121,044				
Water quality and seasonal harvest restrictions	C7.5 NTA 3	x			DOH, NOAA	Model simulation report	Pathogen risk reduced.	2012 - 2013	\$60,000			x	x

Projects being funded in whole or in part with FY12 dollars are shaded grey

Project Name & Description, Organized by Major Work Type or Investment Area	Action Agenda Strategies/NTAs Supported	2020 Targets Supported			Lead Entity & Partners Completing Work	Expected Outputs	Expected Outcomes	Estimated Timeframe	Estimated Cost	Budget			
		Increase of 10,800 shellfish acres	OSS inventoried, inspected, failures fixed.	Beaches meet enterococcus standards						Y 1 / 2 Funding	Y3 Funding	Y4 Funding	Y 5/6 Funding
Bacteria removal in denitrification OSS systems	C5.1 C5.1 NTA1 C5.1 NTA2	x	x	x	DOH, Ecology	Report	Treatment options to reduce pathogen and nutrient pollution	2012-2013		\$10,000			
Virus research	C7.5	x			DOH, FDA	Report	Pathogen risk reduced.	2014- 2016			x	x	
DOH data and reporting system	C7.5 C7.1 C7.4	x	x	x	DOH	GIS, data bases,maps, website interface	Pathogen risk reduced. Pathogen sources corrected.	2011-2016	\$550,000	\$206,000	x	x	
G. Cross-Cutting Projects									10%	\$360,000			
PIC—(section B)		x	x	x	Counties	See above--local PIC, section B							
QA position					Ecology	QAPP review and guidance			\$57,004				
Outfall Strategy (section E)		x		x	DNR, Ecology, DOH, DFW, locals, tribes	See above, section E							
H. Program Administration									10%				
	FS1.2, D5.5	x	x	x	DOH	Manage program, coordinate and plan investments, manage projects, contribute to AA update.	Pathogen risk reduced. Pathogen sources corrected. Investments contribute to Puget Sound recovery.		\$737,250	\$365,000	x	x	
TOTAL										\$8,549,758	\$3,600,000		

D. Major Accomplishments

Lead Organization Partnerships

Lead Organizations are the state and tribal agencies that regularly meet with EPA to develop useful common resources and share ideas for managing the Puget Sound grant programs. Highlights of this partnership include developing and operating by a charter to define responsibilities and processes and hiring a coordinator to oversee quality assurance requirements. OSWP partners closely with Ecology to develop joint programs to manage agricultural pollution and to coordinate PIC work. These productive partnerships continue to evolve, providing valuable support and good ideas resulting in better coordinated programs.

Action Agenda Update

OSWP staff spent several hours developing and reviewing targets, strategies, substrategies and near term actions related to pathogen pollution in the Puget Sound Action Agenda. We worked with the Puget Sound Partnership to identify effective approaches for reducing pollution and to ensure Pathogen Grant alignment with the Action Agenda.

PIC

The PIC grant criteria stated our intent to fund comprehensive programs that can manage multiple pathogen sources using a variety of approaches ranging from community outreach, technical assistance, incentives and enforcement. Since no single agency can do it all, partnerships are essential between county departments, and with conservation districts, tribes and other organizations that have a stake and role in pollution prevention. Oversight of these complex PIC grants also requires considerable state and federal coordination. Listening to counties experienced with PIC and to counties who are struggling to develop PIC programs has shaped the work significantly with the recognition that one size does not fit all—a county by county tailored approach is needed. Listening to tribal concerns for meeting water quality standards has resulted in more accountability, productive working relationships, and better projects. Through these interactions, OSWP is learning how to better negotiate the complexities of PIC with balance and foresight.

PIC grants for Mason County and the Hood Canal Coordinating Council are being managed through county and tribal partnerships. The PIC project in Samish Bay is a county/state effort that identifies and coordinates roles and processes for corrective action. All the PIC projects will have access to Ecology for assistance for a regulatory backstop if needed. Working through the issues, finding solutions, and sharing lessons learned as we move deeper into project management will continue to build a body of knowledge that will bring us closer to developing a regional supporting infrastructure for PIC.

Onsite Sewage System Management

- Kitsap County is conducting OSS investigations in the Long Lake area which drains into Yukon Harbor, a shellfish growing area. In the first six months of the project, they completed 87 OSS inspections, identified and converted 17 unknown OSS into “known” status, held a OSS workshop with 87 attendees, issued 20 (and redeemed three) OSS inspection vouchers, established 13 monitoring stations, and identified two failing OSS which are in the process of being fixed.
- Skagit County offers workshop training and rebates to OSS owners in the Samish Bay Marine Recovery Area. This project is off to a great start and has already surpassed some of its goals. During the reporting period from October 2011 to March 2012, 479 OSS owners attended a Septic 101 class (project goal is 100 attendees), 234 attended a Septic 201 class (project goal is 50), 15 riser and lid installation rebates were redeemed (project goal is 17), and 75 OSS inspection rebates were redeemed (project goal is 68).
- Thurston County executed 23 OSS dye tests in Eld Inlet shoreline properties (project goal is 200) after sending letters to 80 OSS owners requesting dye test participation.
- Whatcom County sent 120 inspection notices (project goal is 741) to OSS owners in the Drayton Harbor MRA.

No Discharge Zone

The Department of Ecology completed the first two steps of preparing an application for a federal No Discharge Zone (NDZ) in Puget Sound. This includes a review of petition requirements including five other states’ petition information and a thorough benefits analysis of establishing a NDZ. Ecology is assessing Puget Sound pump-out capacity, identifying stakeholders, and preparing boater surveys that will meet federal Office of Management and Budget (OMB) approval.

BEACH

During the spring and summer of 2011, the BEACH program, co-managed by Ecology and DOH, surpassed their goal of monitoring 20 additional beaches by monitoring 31 beaches.

E. Proposed 2012 Budget Summary

A. Personnel \$ 177,583

<u>Personnel</u>	<u>Annual Salary</u>	<u># of FTEs</u>	<u>Amount</u>
Environmental Planner 4 (EP4)	\$66,420	1.0	\$66,420
Health Services Consultant 3 (HSC3)	\$61,632	1.0	\$67,795
Health Services Consultant 1 (HSC1)	\$43,368	1.0	\$43,368

Staff and responsibilities:

Mary Knackstedt, EP4 position, EPA Grant Coordinator will administer the Pathogen Grant program. Duties include coordination with other Lead Organizations, EPA, local governments, tribes and stakeholders; development and execution of strategic investments; oversight of projects and budgets; and ensuring alignment with the Puget Sound Action Agenda.

Blake Nelson, HSC3 position, EPA Grant Manager, will track and manage all contract processes, including contract development and reporting; tracking project deliverables and timelines; and meeting federal grant requirements.

The HSC1 position (not yet hired) will perform data entry and documentation and develop procedures for permitting, compliance actions and reporting for the large onsite sewage system program and may assist with other grant administrative tasks or in-house projects as needed.

B. Fringe Benefits \$49,723

EP4 Salary	\$ 66,420
HSC3 Salary	\$ 67,795
HSC1 Salary	<u>\$43,368</u>

Total Salary \$ 177,583 X 28% benefit rate = \$49,723

C. Travel \$ 9,883

<u>Purpose</u>	<u>Expenses</u>	<u>Trip Costs</u>
Car for field surveys and Stakeholder meetings	\$9,883	\$9,883

Motorpool vehicle rentals are \$15 per day with an additional \$0.50 charge per mile for gas and maintenance costs. Per week totals are based on 4 days of travel with an average of 200 miles. Ferry fees, lodging and training fees are also included.

D. Supplies **\$24,200**

<u>Item Requested</u>	<u>Quantity</u>	<u>Unit Cost</u>	<u>Amount</u>
Office supplies	12 months	\$450 / month	\$5,400
Other Miscellaneous Supplies (postage, communication, etc.)			\$3,800
Project supplies/dock project lumber, grating, hardware			\$15,000

E. Equipment **\$15,000**

<u>Item Requested</u>
Float Tubes/dock project

F. Contractual **\$2,944,000**

Sub awards will include the areas and designated amounts as listed below:

Cross-cutting projects	\$ 360,000
Preventing/reducing pathogen loadings from on-site sewage systems	\$ 1,030,000
Implementing watershed-based clean-up and management approaches	\$ 1,208,000
Preventing/reducing loadings from agricultural areas and livestock facilities	\$341,000
Pathogen research	\$5,000

G. Other **\$ 231,527**

Telecommunications & Campus Support Costs @ \$130.42/month per FTE	\$4,695
Rent Costs @ \$6,944/year per FTE	\$20,832
Data management and reporting system	\$206,000

Total Direct Charges **\$3,451,916**

A. Salary	\$177,583
B. Fringe Benefits	\$49,723
C. Travel	\$9,883
D. Supplies	\$24,200
E. Equipment	\$15,000
F. Contractual	\$2,944,000
G. Other	\$231,527

\$ 3,451,916

F. Appendices:

Pathogen Grant Logic Model

Pathogen Grant Investment	Output	Outcome	Performance Measures
OSS Management Fund local OSS management	<ul style="list-style-type: none"> OSS inventories Inspections Repair programs funded and implemented MRAs or their equivalent established. 	<ul style="list-style-type: none"> OSS inventoried, current with inspections, failed systems fixed. Reduced pathogen impacts from OSS. Shellfish acres protected and restored. 	<ul style="list-style-type: none"> Percentage of OSS inventoried and inspected, number of failures fixed in Marine Recovery Areas (MRAs) and other designated areas.¹ Number of MRAs or equivalent established. Acres of shellfish harvest areas protected/restored.
OSS Management Support for regional OSS management—Funding options.	<ul style="list-style-type: none"> Regional funding options report Support for OSS funding Policies/programs for OSS funding 	<ul style="list-style-type: none"> OSS programs adequately and sustainably funded Shellfish acres protected and restored. 	<ul style="list-style-type: none"> Percentage of OSS inventoried and inspected, number of failures fixed . Acres of shellfish harvest areas protected/restored
OSS Management Support for regional OSS management—Standards/best practices guidance	<ul style="list-style-type: none"> Guidance document 	<ul style="list-style-type: none"> OSS are effectively managed. Shellfish acres protected and restored. 	<ul style="list-style-type: none"> Complete, accurate OSS inventories. Effective OSS inspections. Percentage of OSS inventoried and inspected, number of failures fixed.
Vessel sewage Control and manage pollution from discharges of wastewater from vessels. Develop a petition to establish a No Discharge Zone (NDZ) to prohibit discharges from commercial and recreational vessels. Increase pump out capacity and use.	<ul style="list-style-type: none"> NDZ Petition Sufficient pump out capacity Outreach to encourage pump out use. 	<ul style="list-style-type: none"> No Discharge Zone in part or all of Puget Sound. Stakeholder/public support for a NDZ Reduced pathogen loading from vessels. Shellfish acres are protected and restored. 	<ul style="list-style-type: none"> Completed petition. Establishment of NDZ Increased volume of sewage from pump out facilities. Acres of shellfish harvest areas protected/restored
Pollution Identification and Correction Programs Fund local PIC programs.	<ul style="list-style-type: none"> Fund local PIC programs. 	<ul style="list-style-type: none"> Failing onsite sewage systems fixed. Reduced pathogen loading from livestock and OSS. 	<ul style="list-style-type: none"> Number of fecal coliform problems identified and corrected. OSS failures fixed. Livestock problems fixed. Acres of shellfish harvest areas protected/restored in PIC watersheds.
Pollution Identification and Correction Programs Support for regional PIC programs—guidance document	<ul style="list-style-type: none"> PIC Protocols/Best Practices to guide funding, state and local work. 	<ul style="list-style-type: none"> Reduced pathogen loading from livestock and OSS. 	<ul style="list-style-type: none"> Number of fecal coliform problems identified and corrected. OSS failures fixed. Livestock problems fixed.

Pathogen Grant Investment	Output	Outcome	Performance Measures
			<ul style="list-style-type: none"> • Acres of shellfish harvest areas protected/restored in PIC watersheds.
Swimming Beaches Restore and protect water quality at swimming beaches and recreational areas.	<ul style="list-style-type: none"> • Monitoring programs at priority beaches. • Public notification systems in place. 	<ul style="list-style-type: none"> • All monitored beaches meet enterococcus standards 	<ul style="list-style-type: none"> • Number of monitored beaches that meet enterococcus standards.
Agriculture/Livestock Clean Water BMPs for Agricultural Activities	<ul style="list-style-type: none"> • Technical assistance programs • BMPs installed. 	<ul style="list-style-type: none"> • Reduced pathogen loading from livestock. 	<ul style="list-style-type: none"> • Number of livestock problems fixed. • Acres of shellfish harvest areas protected/restored.
Agriculture/Livestock Agricultural inspections	<ul style="list-style-type: none"> • Technical assistance programs • Inspections implemented. • BMPs installed. 	<ul style="list-style-type: none"> • Reduced pathogen loading from livestock. 	<ul style="list-style-type: none"> • Number of livestock problems identified and fixed. • Acres of shellfish harvest areas protected/restored.
Wastewater/Municipal Outfalls Cooperative outfall strategy to reduce impacts from outfalls that keep shellfish areas closed.	<ul style="list-style-type: none"> • Outfall strategy • Prioritized outfall list • Funding plan 	<ul style="list-style-type: none"> • Reduced pollution impacts from outfalls on shellfish growing areas and other environmental resources. 	<ul style="list-style-type: none"> • Number of outfalls removed • Number of outfalls extended or diverted • Volume of polluted wastewater removed • Acres of shellfish harvest areas restored/protected.-
Pathogen Research Answer key shellfish safety research questions and fill information gaps. Monitor the organism causing Diarrhetic Shellfish Poisoning (DSP). Conduct water quality studies of selected shellfish wet storage areas to better correlate environmental conditions with potential causes of illness that may restrict harvest. Evaluate uptake and persistence of viruses in shellfish tissue from outfalls under normal and upset conditions.	<ul style="list-style-type: none"> • Increased understanding of pathogen sources, threats, and treatment. • DSP early warning system. • Pathogen studies. 	<ul style="list-style-type: none"> • Reduce threats to human health and the environment from biotoxins and pathogens. • Establish/improve programs which protect public from pathogens and biotoxins. • Shellfish acres protected and restored. 	<ul style="list-style-type: none"> • Acres of shellfish harvest areas protected/restored. • Number of reported health problems resulting from biotoxins and pathogens.
Data Management and Reporting System	<ul style="list-style-type: none"> • Data management and reporting system for pathogen and biotoxin monitoring, shellfish growing area classification, public and stakeholder outreach. 	<ul style="list-style-type: none"> • Improved ability to respond to pathogen and biotoxin problems through public notification and source correction. 	<ul style="list-style-type: none"> • Number of reported health problems resulting from biotoxins and pathogens. • Shellfish acres protected and restored.

¹Marine recovery area is an area of definite boundaries where the local health officer, or the department in consultation with the health officer, determines that additional requirements for existing on-site sewage disposal systems may be necessary to reduce potential failing systems or minimize negative impacts of on-site sewage disposal systems.

OSWP's 2012 Shellfish Areas Listed as Threatened or of Concern

Based On 2011 Water Quality Data

Annas Bay
Bay Center
Burley Lagoon
Dungeness Bay
Dyes Inlet
East Straits
Eld Inlet
Filucy Bay
Grays Harbor
Henderson Inlet
Hood Canal 3
Hood Canal 6
Jamestown
Naselle River
Nisqually Reach
Oakland Bay
Pacific Coast
Pickering Passage
Point Partridge
Port Blakely
Port Orchard Pass
Port Susan
Port Townsend
Portage Bay
Rocky Bay
South Skagit Bay
Vaughn Bay

Puget Sound Shellfish Growing Area Restoration Projections 2012-2020 (May 2012)²

County	Shellfish Growing Area	Current Classification & Acreage				Reason(s) for Classification Restriction				Restoration Assessment			Other Actions	Total 2020 Restoration Potential			
		Approved	Conditional	Restricted	Prohibited	Nonpoint	WWTP	Marina	Other	Activities / Actions	Est. Upgrade Acreage	Timeframe (years)		Conditionally Approved	Restricted	Prohibited	
Whatcom	Birch Bay	2,799			306	Nonpoint	WWTP	Marina		County and other stakeholders continue to sample Terrell Creek. Agricultural work in the watershed, according to 2010 grant.	P to A:	128	0 to 2	SPD formed.			128
Whatcom	Drayton Harbor		807		2,948	Nonpoint	WWTP	Marina		Whatcom County is actively evaluating the area. The Washington Shellfish Initiative's PCAT effort will begin in 2012. Upgrading portions of the Prohibited area will require a minimum of 30 samples at the new marine water stations. Water quality trends are improving.	P to C/A:	150	3 to 5	SPD formed. MRA created. EPA round 1 & 2 OSS funding. Pollution Correction Action Team (PCAT) evaluating agricultural activities in the watershed.			150
Whatcom	Drayton Harbor		807		2,948	Nonpoint	WWTP	Marina		Whatcom County is actively evaluating the area. The Washington Shellfish Initiative's PCAT effort will begin in 2012. Upgrade to Conditionally Approved area will require collection and analysis of water quality data during closed period. Water quality trends are improving.	C to A	250	3 to 5	SPD formed. MRA created. EPA round 1 & 2 OSS funding. Pollution Correction Action Team (PCAT) evaluating agricultural activities in the watershed.	250		
Clallam	Dungeness Bay	391	1,578		133	Nonpoint				Upgrade of Prohibited area will require new marine water stations and a minimum of 30 samples.	P to C:	100	6 to 8	SPD formed. MRA created. EPA round 1 & 2 OSS funding.			100
King	East Passage	1,656			81	Nonpoint				MRA formed, county currently requiring inspections of all on-site sewage systems in the area. 81 acres Prohibited and 136 acres Unclassified due to OSS issues.	P/U to A	217	3 to 5	MRA created.			217
Clallam	East Straits	14,717			1,376		WWTP			Approximately 40 acres to be downgraded in 2012 due to nonpoint issues. County is developing plan to evaluate the conditions around the impacted station.	C to A	40	3 to 5				40
Pierce	Henderson Bay	793		48	113	Nonpoint				Local health jurisdiction completed a sanitary survey in the Wauna area. Numerous failing on-site sewage systems were identified and repaired.	P to A	87	0 to 2	MRA created. EPA round 1 & 2 PIC funding.			87
Pierce	Henderson Bay	793		48	113	Nonpoint				Pierce County Shellfish Partners have initiated a "Raise the Grade" effort to improve water quality in Minter Creek. Pierce County Health will be completing a sanitary survey around Minter Bay in 2012. Water quality trends improving at Stations 306 and 307.	R to A	24	3 to 5	MRA created. EPA round 1 & 2 PIC funding.		24	
Pierce	Henderson Bay	793		48	113	Nonpoint				Pierce County Shellfish Partners have initiated a "Raise the Grade" effort to improve water quality in Minter Creek. Pierce County Health will be completing a sanitary survey around Minter Bay in 2012. Concerned with the water quality trends at Station 308; however, active efforts by Pierce County programs could change the trend.	R to A	24	6 to 8	MRA created. EPA round 1 & 2 PIC funding.			24

² Shaded rows represent projected timeframes of eight years or greater.

Shaded rows represent projected timeframes of eight years or greater.

County	Shellfish Growing Area	Current Classification & Acreage				Reason(s) for Classification Restriction				Restoration Assessment			Other Actions	Total 2020 Restoration Potential			
		Approved	Conditional	Restricted	Prohibited	Nonpoint	WWTP	Marina	Other	Activities / Actions	Est. Upgrade Acreage	Timeframe (years)		Conditionally Approved	Restricted	Prohibited	
Thurston	Henderson Inlet	1,565	50		242	Nonpoint				Coordinated efforts are continuing in the watershed. LHJ continues to evaluate on-site sewage systems through their enhanced O&M program.	C to A:	50	0 to 2	SPD formed. MRA created. Enhanced OSS O&M implemented.	50		
Thurston	Henderson Inlet	1,565	50		242	Nonpoint				Coordinated efforts are continuing in the watershed. LHJ continues to evaluate on-site sewage systems through their enhanced O&M program.	P to C	50	0 to 2	SPD formed. MRA created. Enhanced OSS O&M implemented.			50
Island	Holmes Harbor	1,592			102	Nonpoint				Drainages at the southern end of the growing area continue to be sampled. LHJ working on other nonpoint activities in this watershed. Draft report in June 2012.	P to A:	100	3 to 5	SPD formed. EPA round 1 & 2 OSS funding (mostly database development)			100
Mason	Hood Canal 6	1,218	18		68	Nonpoint				The schedule for the Hoodport wastewater collection system has yet to be determined and will depend on the availability of funding. The sponsoring agencies are currently seeking funding for this system.	P to A	68	8+	MRA created. EPA round 1 & 2 OSS funding (outreach/mailings)			
Mason	Hood Canal 9	1,193			495	Nonpoint				Marine water stations meet the Approved standard. Shoreline survey completed in 2011. Waiting for the WWTP and collection system serving the core Belfair area.	P to A:	250	0 to 2	SPD formed (inactive). MRA created. EPA round 1 & 2 OSS funding (outreach/mailings).			250
Pierce	Ketron Island				602		WWTP			Restoration potential hinges largely on the new wastewater treatment system and fate of the wastewater outfall. This area could potentially include three pieces: north of Chambers Creek, between Chambers Creek and JBLM, and south of JBLM.	P to A:	300	8+				
Pierce	Ketron Island				602		WWTP			Based on upcoming analysis (Chambers Creek study), marine water quality, and shoreline survey findings the area around Ketron Island may be upgraded to Approved.	P to A	208	3 to 5				208
Kitsap	Kingston	2,195			379		WWTP			WWTP outfall has been moved. Waiting for a minimum of 30 samples at the marine water stations in the area.	P to A:	180	0 to 2				180
San Juan	MacKaye Harbor	348	57					Marina		Numerous boats have been removed from the Barlow Bay area.	C to A:	57	0 to 2		57		
Pierce	McNeil Island SE			57			WWTP			Elimination of outfall and evaluation of the conditions around the oufall during the Chambers Creek study could open Geoduck Tract 12800.	P to A	57	8+				
Thurston	Nisqually Reach	1,809			1,849	Nonpoint		Marina		Focused attention on the on-site sewage systems, agricultural activities, and shoreline drainages in the Puget Marina area could result in an upgrade.	P to A	50	0 to 2	SPD formed. Enhanced OSS O&M to be implemented.			50
Mason	North Bay	1,082			159	Nonpoint				EPA round 1 & 2 funding received. Project will involve ambient sampling along the shoreline at Allyn and will include pollution identification and correction around all "hot spots".	P to A:	50	3 to 5	EPA round 1 & 2 PIC funding. EPA round 1 & 2 OSS funding (outreach/mailings)			50

Shaded rows represent projected timeframes of eight years or greater.

County	Shellfish Growing Area	Current Classification & Acreage				Reason(s) for Classification Restriction				Restoration Assessment			Other Actions	Total 2020 Restoration Potential			
		Approved	Conditional	Restricted	Prohibited	Nonpoint	WWTP	Marina	Other	Activities / Actions	Est. Upgrade Acreage	Timeframe (years)		Conditionally Approved	Restricted	Prohibited	
Mason	Oakland Bay		1,460		669	Nonpoint	WWTP			An evaluation of the conditions in the bay after 1-inch rainfall events indicate that a portion of the conditionally approved area can be upgraded. In addition, upgrades at the WWTP (holding tanks) can result in the removal of the wastewater discharge condition in a portion of the area.	C to A:	750	0 to 2	SPD formed. MRA created. EPA round 1 & 2 OSS funding (outreach/mailings)	750		
Kitsap	Port Blakely	554			706		WWTP			Relocation and extension of City of Bainbridge Island outfall.	P to A:	284	8+				
Kitsap	Port Gamble	1,486			87		WWTP			2012 supplemental capital budget includes \$2 million for the abandonment of the Port Gamble WWTP. Proposal includes installation of LOSS by July 2013 and will include 3-year viral resting period.	P to A:	87	3 to 5				87
Kitsap	Port Madison	2,936		29	376	Nonpoint	WWTP			Wastewater flow to Messenger House WWTP may be diverted to City of Bainbridge Island WWTP.	P to A	68	8+				
Kitsap	Port Madison	2,936		29	376	Nonpoint	WWTP			KCHD doing PIC evaluations now, anticipate reduction in Unclassified acres near Indianola due to NP sources	U to A:	57	0 to 2				57
Kitsap	Port Madison	2,936		29	376	Nonpoint	WWTP			KCHD completing PIC evaluation with on-site sewage system follow up and correction. Potential to remove Prohibited classification and unclassify the area. Need marine water stations in this area in order to classify.	P to U	272	0 to 2				272
Kitsap	Port Orchard Passage	3,497			1,187	Nonpoint	WWTP	Marina		KCHD doing PIC evaluations now, anticipate reduction in Prohibited acres due to NP sources	P to A:	125	0 to 2				125
Snohomish	Possession Sound	2,768			799		WWTP			Good effort by local agencies to initiate a restoration effort. This effort should be sustained. Kayak Point to Warm Beach. Need 30 samples at the marine water stations and a completed pollution source survey.	U to A:	350	3 to 5	SPD formed. EPA round 1 & 2 OSS funding			350
Island	Port Susan	1,601			143		WWTP	Marina		Triangle Cove. Unclassified area. Need 30 samples at the marine water stations and a completed pollution source survey.	U to A:	150	0 to 2	EPA round 1 & 2 OSS funding (mostly database development)			150
King	Quartermaster Harbor	411	-		806	Nonpoint		Marina		Need focused effort to identify and repair failing onsite sewage systems and to deal with other nonpoint sources along the west shore and adjacent uplands.	P to A:	150	0 to 2	MRA created. EPA round 1 & 2 PIC funding.			150
King	Quartermaster Harbor	411	-		806	Nonpoint		Marina		Need focused effort to identify and repair failing onsite sewage systems and to deal with other nonpoint sources along the west shore and adjacent uplands.	P to A:	445	3 to 5	MRA created. EPA round 1 & 2 PIC funding.			445

Shaded rows represent projected timeframes of eight years or greater.

County	Shellfish Growing Area	Current Classification & Acreage				Reason(s) for Classification Restriction				Restoration Assessment			Other Actions	Total 2020 Restoration Potential			
		Approved	Conditional	Restricted	Prohibited	Nonpoint	WWTP	Marina	Other	Activities / Actions	Est. Upgrade Acreage	Timeframe (years)		Conditionally Approved	Restricted	Prohibited	
Skagit	Samish Bay	613	4,037		1,194	Nonpoint				On-site sewage system and agricultural site evaluations continue in the watershed. Potential upgrade to northern portion of Conditionally Approved area based on defined impact from Samish River, Colony Creek, and Edison Slough. In addition, we need to evaluate marine water quality at Stations 361, 362, and 364 during closure events.	C to A:	2,150	0 to 2	SPD county-wide. MRA created. EPA round 1 & 2 PIC funding. EPA round 1 & 2 OSS funding.	2150		
Skagit	Samish Bay	613	4,037		1,194	Nonpoint				On-site sewage system and agricultural site evaluations continue in the Samish River watershed. This upgrade would encompass the Conditionally Approved area closest to the Samish River channel.	C to A:	1,887	0 to 2	SPD county-wide. MRA created. EPA round 1 & 2 PIC funding. EPA round 1 & 2 OSS funding.	1887		
Island	Saratoga Passage	5,298			1,668		WWTP			Assumes Crescent Harbor outfall discontinued, all flows go to upgraded Oak Harbor outfall. Scheduled completion for new WWTP is 2017, plus viral resting period, puts upgrade at about 2020. No potential of upgrade at Langley due to expanded marina.	P to A:	500	8+				
Island	SW Whidbey Island	4,696			655	Nonpoint		Marina		DOH is currently completing a shoreline survey in the growing area. DOH is working with the local health jurisdiction to identify and correct pollution sources and evaluate restoration activities in the watershed.	P to A:	300	0 to 2	EPA round 1 & 2 OSS funding (mostly database development)			300
TOTAL ACRES														5144	48	3546	

Comments on Implementation Strategy and 2012 Work Plan

OSWP forwarded a draft of the Pathogen Grant Implementation Strategy and 2012 Work Plan to the Pollution Advisory Committee and met with the Advisors on May 22 to discuss their comments. EPA met with Tribes and the Northwest Indian Fisheries Commission on May 16 to discuss opportunities for tribal involvement in NEP work and funding decisions. Comments and responses from both groups are summarized below. Some comments received require more substantial technical and policy discussions among multiple parties and are beyond the scope of the LO workplan response to comments. Therefore, some responses, where noted with an asterisk (*), should be considered as works in progress.

Tribal Comments:

- Tribes want to be involved earlier in the process, during strategy development and RFP formulation or selection, and not be always in a mode of reacting to specific projects.

DOH: DOH will involve Tribes earlier in strategic development.*

- It should not be solely up to DNR to figure out an outfall strategy, and the Squaxin Island Tribe has done some work on an outfall strategy for Mason County and can share that information.

DOH: We did not intend to delegate the outfall strategy solely to DNR, this will be a multi-agency effort which includes local and tribal participation. We will clarify the language in the work plan to reflect such. We will look into the Squaxin work on outfalls.

- A meeting participant offered that the FY12 work plan needs to explicitly address two additional issues: prevention of downgrades and harmful algal blooms.

DOH: Prevention of downgrades is an essential part of OSWP work. OSWP manages an early warning system with a list of shellfish growing area sites that show declining pollution trends. We are using this information to focus OSS and PIC resources. We have put FY11 NEP resources into developing a monitoring, analysis and notification program diarrhetic shellfish poisoning, a biotoxin threat that has recently emerged in Puget Sound. We are open to evaluating new research requests and welcome submittals.

- Suggested updating NPDES permits to bring about upgrades of shellfish beds.

DOH: We will work with Ecology as we develop the outfall strategy and will address NPDES permits.

- To ensure the expenditure of funds and interaction with landowners on Best Management Practices (BMPs) are efficient, participants called for the focus to be on all pollutants (DO, sediment, temperature), not just pathogens and nutrients. The suggestion was further

made to not provide NEP funding to Conservation Districts unless they are willing to make BMPs transparent and identify the locations of landowners implementing funded BMPs, so that anyone can judge compliance. Finally, it was also suggested not to provide funding to counties unwilling to identify the locations failing on-site septic systems.

DOH: OSWP's work and the focus of the NEP grant is on pathogens, however, we are willing to work with Ecology, EPA and others on a more holistic approach to landowner BMPs. * Counties that receive PIC funds under this grant are required to report on the location and correction of pollutant sources.

- A participant called for allowing alternative technologies for on-site septic systems to be eligible for repair loan programs. (It was noted that Department of Ecology funding is already going towards on-site septic system nutrient removal). Meeting participants asked to know what happened with the Puget Sound Action Team study on alternative on-site septic system technology.

DOH: OSWP will track down the PSAT study. We will not directly manage loan repair programs however, would support counties using NEP funds for alternative technologies that have been approved and which are in compliance with local standards and rules.*

- Meeting participants questioned the importance of the Department of Health (DOH) goal of a Pollution Identification and Correction program in every county, relative to other Puget Sound needs. PIC programs were characterized by meeting participants as focusing almost entirely on septic system sources and fixes.

DOH: PIC programs are important tools for managing pathogens in areas where people consume shellfish or play in water. Consequently, those are the areas where we will focus resources. PIC programs were originally designed to manage OSS—using PIC to manage other pathogen sources has uncovered challenges that OSWP is trying to work through with state, federal, tribal and local partners.

- It was stated that Tribes expect the recently created EPA/State Pollution Control Action Team (PCAT) to be expanded beyond Whatcom County (it is particularly needed in Mason County, according to a meeting participant). Meeting participants expressed the opinion that the PCAT should include representatives from all interested Tribes.

DOH: Similar resources are being offered to all the counties that receive NEP PIC funds—use of Ecology as a regulatory backstop as needed and we plan to work with Ecology to develop guidance and identify best practices for PIC that will be helpful for counties that are establishing or implementing PIC programs.*

- It was suggested that DOH must be pushed to exercise its broad authority to access and inspect the property if there are shellfish problems. Other entities can provide enforcement authority.

Pollution Advisory Committee Comments:

OSS Management

- Thurston County Health Department: How are projects selected?

DOH: priorities are based on protection and restoration of shellfish beds to achieve ecosystem recovery targets.

- Thurston County Health Department: Dividing funds in equal distribution amongst the 12 Puget Sound local health jurisdictions was popular.

DOH/EPA response: funding needs to be tied to on-the-ground restoration of shellfish beds.

EPA: narrowing down eligibility process (direct, negotiated awards rather than a RFP) makes sense financially and to achieve shellfish goals. If going to direct awards, be transparent on process.

NWIFC: makes sense to focus on problem areas

- Thurston County Health Department: What types of shellfish resources?

DOH: NEP funds are being used to protect and restore commercial, recreational, and tribal beds.

- Thurston County Health Department: Agree with providing tools / best practices for OSS management.

- Pierce County Health Dept: We need foundational efforts (outreach / education, infrastructure, tools, etc.).

- Pierce County Health Dept: When does money get in?

EPA: end of June or beginning of July

- Pierce County Health Dept: Will regional support include low-interest loans? We need this.

DOH: yes, the grant will support loans and OSWP will develop options for long term sustainable funding.

Pollution Identification and Correction

- EPA: Regulatory subgroup of the ECB suggested tying "farm land" designation on tax codes to not polluting.

- Ecology: What about expanding the BEACH program to cover monitoring and public notification at freshwater beaches?

DOH: not in the proposal, and BEACH program future is uncertain. EPA: BEACH program zeroed out in president's budget. DOH: OSWP will work with partners to decide future of the BEACH program. Tying it to local PIC programs makes sense.

- NWIFC: What are the regional best management practices for PIC?
DOH: some Ecology money plus DOH grant funds will develop a guidance document for PIC to analyze and distribute information about what works and what doesn't. Hood Canal work and other counties that have doing PIC for a long time might help create tools.
- Kitsap/Thurston Local Health Jurisdictions: Some level of research and water quality sampling/monitoring should exist for these actions (pathogen management/control activities) to be successful. Monitoring is a tool not only for enforcement, but prevention, early detection and clean up verification

Agriculture

- Pierce County: What would the inspectors do?

DOH: counties that receive PIC awards will have the option of using Ecology as a regulatory backstop if needed.

- Alan Chapman/Lummi Tribe: Enforcement works – the model works.
- EPA: Examples are good. The 5 directors' talks are also working on streamlining the process with all the agencies.

DOH: need to keep counties in the loop.

- Kitsap/Thurston Local Health Jurisdictions: As far as agriculture/animal wastes and violations of state water quality standards from things like WWTPs/NPDES, sewage spills, oil spills, etc.: Ecology is the ultimate authority for enforcing these rules. However Ecology has been inconsistent, and sometimes non-existent, in the use of their authority in this area. Before more pressure is applied to locals to develop enforcement tools to address ag/animal waste water quality issues, maybe Ecology should lead by example and do the enforcement they are authorized to do. If Ecology starts enforcing their own rules consistently, that in and of itself will not only help clean-up Puget Sound, but may indirectly influence some counties to create their own enforcement tools so that they handle violations on a local level instead of having the state do it for them.

DOH: Round 3 NEP funds will support an Ecology Nonpoint inspector to help counties that receive PIC awards. We would like to work with local agencies to figure out a longer term solution for this issue.*

No-Discharge Zone

- Alan: Can the no-discharge zone / pump-outs get a marina open?

A: not likely; closure based on the number of boats.

Centralized Wastewater/Outfall Strategy

- Alan: Move outfall locations or reclaim or higher treatment? Prefers the bold proposal of no discharge. Also use lease revenue to help pay for implementation.
- Puget Sound Partnership: ECB is doing a funding strategy for unmet needs, which may help.

DOH: DNR has funding for an outfall strategy and \$50,000 from the Pathogen Grant cross-cutting funds will be used to develop it.

- EPA: Squaxin tribes said Mason Co had an outfall assessment that may be useful.

Pathogen Research

- EPA: Alternative OSS technologies out there; maybe outreach should be used to share them?

DOH: currently using NEP funds to evaluate the effectiveness of public domain nutrient removal technologies ability to also remove pathogens.

- Alan / Thurston: Make sure technologies actually work.

Pathogen Data Management / Reporting

- Hood Canal Coordinating Council: Locals sorting data – how to connect local needs and DOH information.

DOH: optimistic that we can make the connection. One of the goals for the project is to make data accessible for stakeholders.

Other:

- Alan: What pathogens are you looking at?

DOH: mostly fecal coliform; a little of others—human viruses and biotoxins.

- Alan: Looking into PSP and other biotoxins makes sense to protect shellfish beds.

DOH: funding from FY11 going to support a DSP monitoring and notification system.

- HCCC: In future, advisory committee needs more time to provide feedback and engage other local integrating organizations in review. Also would like more opportunities to engage earlier in the strategic development process. It would be helpful to work with the Puget Sound Partnership on how best to get input from the LIOs to develop a more comprehensive approach to engaging in these issues. There are projects such as the OSS technologies that are planning focused that would benefit from a second stage for implementation.

DOH: Will try to engage earlier and work with the Partnership on LIO involvement. Will take another look at the investments in planning/research projects for phase 2 implementation.*

- Kitsap/Thurston Local Health Jurisdictions: Your investment approach for years 1 - 6 appears sound considering the variation among Puget Sound LHJ's and their respective OSS, LMP, and PIC programs. It is difficult to come up with a "one size fits all" approach with the limited funding available. We appreciate the fact that you have adopted many of the comments that LHJ's have made over the last several years. This is a work in progress, and we are all benefiting from the work, successes, and failures of each other. The more we do the better we will get.
- As far as future investments, especially looking ahead to year 6 and beyond, perhaps working on legislation that would require Puget Sound counties to adopt a surface and stormwater management, "SSWM" program that funds and addresses a comprehensive approach to water quality (like Kitsap's SSWM) should be considered. As the draft strategy points out, pathogen and nutrient pollution extends beyond just OSS to also include animal wastes/agriculture, stormwater, LOSS, WWTP, etc. The conveyance mechanism for the pollution may be direct discharge to fresh or salt water, or via a man-made or natural storm water system. Many counties have tried to get SSWM programs adopted, but lacked the local political support to do so. State legislation requiring each county to have a comprehensive SSWM program may be the way to help county's get such a program.
- Another investment may be to try and get the Legislature to amend some of the provisions of the Growth Mgmt Act, especially those that place restrictions on where public sewers and OSS may be used. If county's are going to be on the hook to solve pollution problems, there should not be state laws that restrict the options that county's have available to them to correct the problems based on their own unique set of circumstances. The goals of GMA and the PS Action Agenda are similar - they should not conflict with each other and sometimes they do to the detriment of locals.

Overview of the Puget Sound National Estuary Program Management Conference and Funding Agreements under CWA section 320

Puget Sound Management Conference

For the purposes of the National Estuary Program, the Puget Sound Management Conference includes: the statutorily-described Partnership including the Puget Sound Partnership state agency, Leadership Council, Ecosystem Coordination Board, and Science Panel; and the broader partnership coalition that includes tribal governments, the Puget Sound caucuses affiliated with the Ecosystem Coordination Board, the Salmon Recovery Council, Northwest Straits Commission, implementing networks, formal and informal interest groups, watershed groups, individual local governments, and representatives from Canadian agencies.

As created, the Partnership is intended to be a multi-disciplinary, networked regional coalition. To fulfill this role, structures have evolved to provide specific coordination, advice, implementation and collaboration. Some elements, like the Education, Communication and Outreach Network (ECO Net) and Local Integrating Organizations were created by the Partnership. Other coalitions and groups existed prior to the Partnership or have been developed by partners engaged in Puget Sound recovery. These include but are not limited to the Puget Sound Institute, Puget Sound caucuses (federal, state, environmental, tribes), the Northwest Straits Commission, Lead Organizations which support implementation efforts across key topic areas, formal and informal interest groups, watershed groups, local government coalitions, and trans-boundary (US/Canada) work groups. The salmon recovery program includes the Salmon Recovery Council and its affiliated Recovery Implementation Technical Team (RITT), and watershed Lead Entities. The general composition and organization of the Management Conference relationship is shown in the following figure.

For more information about the management conference structure and decision-making roles within the conference, please refer to Appendix C of the 2012 Puget Sound Action Agenda.

Lead Organizations for supporting implementation of the Action Agenda

Beginning in 2010, EPA has provided Puget Sound Geographic Program funding to Washington state agencies and the Northwest Indian Fisheries Commission to serve as 'Lead Organizations' to develop and implement multi-year strategies for supporting implementation of the Action Agenda through both directed and competitive sub-awards. The Lead Organizations include:

- Marine and Nearshore Protection and Restoration (Departments of Fish and Wildlife and Natural Resources)
- Watershed Protection and Restoration (Departments of Ecology and Commerce)
- Toxics and Nutrients Prevention, Reduction and Control (Department of Ecology)
- Pathogen Prevention, Reduction and Control (Department of Health)
- Managing Implementation of the Action Agenda (Puget Sound Partnership)
- Outreach , Education and Stewardship (Puget Sound Partnership)
- Tribal Implementation (Northwest Indian Fisheries Commission)

Work plans for each of these Lead Organizations are updated annually and submitted to EPA for approval of funds under CWA section 320 along with the National Estuary Program Base Grant.

Federal Inter-Agency Agreements for supporting implementation of the Puget Sound Action Agenda

The federal caucus promotes information sharing, development of joint work priorities, and collaboration among federal agency leadership and staff to support implementation of the Action Agenda. Thirteen federal agencies have signed a Memorandum of Understanding to commit to these working principles, and all federal agencies with Puget Sound interests are welcome to participate. Agencies include those with environmental and natural resource responsibilities such as NOAA, the Environmental Protection Agency, U.S. Fish and Wildlife Service, U.S. Forest Service, U.S. Geological Survey, U.S. Army Corps of Engineers, as well as those with local defense and security responsibilities such as the Coast Guard, Army, and Navy. The federal caucus has a work plan to guide their engagement with Puget Sound recovery efforts and many federal agencies have been assigned actions in the Puget Sound Action Agenda.

For certain topics, federal roles and activities are necessary to support implementation of the Puget Sound Action Agenda. In some cases, EPA cooperates with and supports other federal agencies where additional federal coordination, involvement or federal program support is needed to accomplish identified actions and produce important outputs or help achieve outcomes that are unique to federal agencies or programs and where additional capacity is necessary to do so. In such cases, CWA Section 320 funds are used to support Federal Inter-Agency Agreements to conduct necessary work in a timely or particular manner.

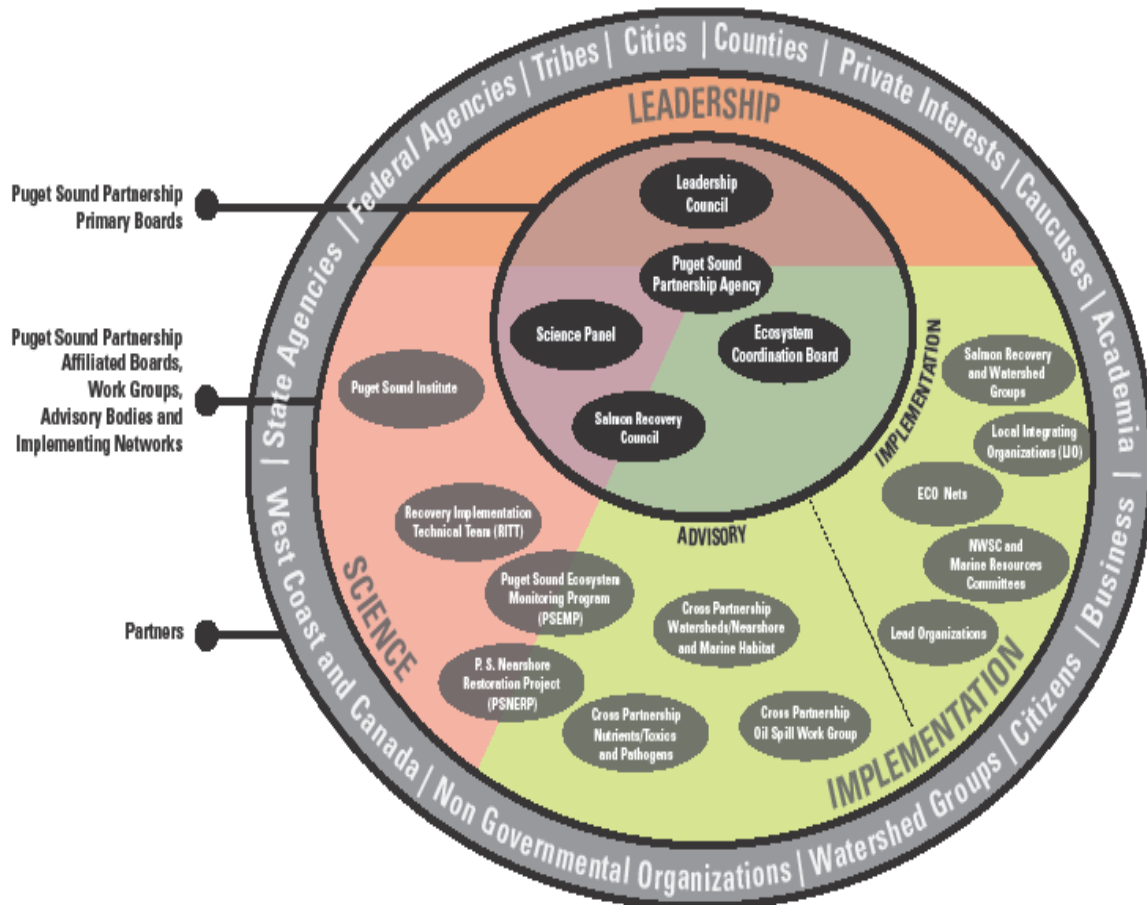
Tribal capacity to engage in the Puget Sound Management Conference

Beginning in 2010, EPA has provided Puget Sound Geographic Program funding to all federally-recognized tribes in the greater Puget Sound basin, and consortia of these eligible tribes. EPA Region 10 obtained a waiver from competition for these awards. The purpose of these awards is to provide financial assistance to cover the basic activities to enable the tribes to participate in the implementation of the CCMP/Action Agenda and do not duplicate or supplement funding provided under Indian General Assistance Program (IGAP). These awards are incrementally funded each year.



Puget Sound Partnership Management Conference

Conceptual diagram of organization and partner structure



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