Revised 11/13/08
No substantive changes were made, only minor grammatical and typographic edits.

DRAFT 2020 Action Agenda for Puget Sound

Today, November 6th, 2008, the Puget Sound Partnership is releasing a draft 2020 Action Agenda for Puget Sound recovery. Over the next two weeks, we are asking for public input on the draft prior to adoption by the Leadership Council and transmittal to the Washington State Legislature on December 1, 2008.

When the Puget Sound Partnership was created in 2007, we were given the charge to look at Puget Sound as a whole, from the crest of the Cascades and Olympics to the floor of Puget Sound and the Strait of Juan de Fuca, and develop an integrated approach for rebuilding and sustaining ecosystem health. This may be our last, best chance to implement actions that will help us turn the tide on the decline of Puget Sound health. The attached Puget Sound Action Agenda is the comprehensive roadmap for moving toward a healthy Puget Sound by 2020.

> *"[It is our task] to ensure that the Puget Sound forever will be a thriving natural system, with clean marine and freshwaters, healthy and abundant native species, natural shorelines and places for public enjoyment, and a vibrant economy that prospers in productive harmony with a healthy Sound."*
>
> *--- Governor Christine Gregoire*

The Puget Sound Partnership is a catalyst for action. Our job is to bring together all the groups, interests and agencies to work together toward a shared vision for Puget Sound recovery.

Thousands of people—from scientists to citizens, from Bellingham to Olympia to Hoodsport to the San Juan Islands—have helped the Partnership during the past 18 months to develop an Action Agenda for Puget Sound. It's the most comprehensive appraisal of Puget Sound ever conducted. We are grateful for their contributions and appreciate how much people want to help us "get it right". People have told us that they want their own time and energy focused on what matters and makes a difference.

Our entire region working together with a shared commitment to save the Sound is what makes the Partnership different. We are focusing on what we can do—all of us as citizens—individually and collectively, to ensure that the rivers, streams, lakes and bays that make up Puget Sound are healthy for orcas, fish, birds and people for generations to come.

We can do this work. In 1958, the voters of the Seattle metropolitan area agreed to spend $140 million to halt the flow of untreated sewage to Lake Washington that was discharged from Seattle and other communities surrounding the lake. The closed beaches, murky waters, and offensive odors along the Lake Washington shoreline were effective arguments in the campaign to create Metro and build sewage treatment systems. Scientists offered additional evidence that the lake was degraded but that recovery was still possible. Although the proposed rescue of Lake Washington was the most expensive environmental project in the nation's history at the time, the voters believed that the threat to the lake and their quality of life was well worth the investment. By 1968, sewage discharge to the lake had dropped from 20 million gallons per day to zero, and the clarity of the lake had returned to 10 feet. It is now a healthy, well managed body of water.

Now it's time for Puget Sound.

Introduction to the Puget Sound Action Agenda

The Partnership was given three charges from the Legislature: 1) to define a 2020 Action Agenda to guide efforts to protect and restore Puget Sound, based on science and with clear and measurable goals for recovery; 2) to determine accountability for achieving results including performance, effectiveness, and the efficient use of money spent on Puget Sound; and 3) to promote public awareness and communication to build support for a long-term strategy.

In creating the Action Agenda, we collaborated with all affected parties, used the experience and expertise of existing regional agencies, and involved local communities and scientists in crafting regional solutions. The Partnership sought practical solutions with reasonable expectations for implementation, building on existing programs that are working wherever possible, and continually sought scientific input about the risks facing Puget Sound, the potential certainty for actions, and risks of continued inaction.

The final Action Agenda is intended to be a living and adaptable guide to be used by federal and state agencies, tribes, city and county governments and other agencies, businesses and environmental organizations, watershed groups and individual landowners as they take action to protect and restore the Puget Sound. It serves as a statement of common purpose across the Sound and sets the stage for cooperation and collaboration among partners.

Inside the Action Agenda

The Action Agenda is structured around four basic questions:

1. What is a healthy Puget Sound?
2. What is the status of Puget Sound and what are the biggest threats to it?
3. What actions should be taken that will move us from where we are today to a healthy Puget Sound by 2020?
4. Where should we start?

1. What is a healthy Puget Sound?

A healthy Puget Sound includes a thriving natural world, high quality of life for people, and a vibrant economy. Using goals set out by the legislature, the Partnership has, for the first time in Puget Sound, identified measurable indicators that can be monitored over time to assess progress. We have also set targets and benchmarks to guide our actions.

2. What is the status of Puget Sound and what are the biggest threats to it?

In synthesizing the information available about the condition of Puget Sound's health and the threats, we concluded that significant losses of our estuaries, rivers and floodplains, and forests combined with the slew of pollutants delivered to Puget Sound every day have had profound, and potentially some irreversible consequences on the present and future health of the region. Anticipated population growth and climate change will amplify the current situation. Compounding these challenges is the fragmented system now in place to manage natural resources. The region has not been equipped or organized to even solve the current problems facing Puget Sound, let alone the changes that will come.

3. What actions should be taken that will move us from where we are today to a healthy Puget Sound by 2020?

The Partnership synthesized a significant amount of existing work and input received during the development of the Action Agenda to create five priority strategies. Together, these five priorities address major threats to ecosystem health and embrace a new approach to managing and sustaining the Puget Sound ecosystem. The list of things to do for Puget Sound is daunting and the actions cannot be tackled all at once. Building a comprehensive, consolidated list of actions is a significant step forward. Our strategies are to:

A. **Protect** the intact ecosystem processes, structures, and functions that sustain Puget Sound. Avoiding problems before they occur is the best and most cost-effective approach to ecosystem health.

B. **Restore** the ecosystem processes, structures, and functions that sustain Puget Sound. Protecting what we have left is not sufficient, and significant effort at an unprecedented scale is needed to undo past damage.

C. **Prevent water pollution at its source.** Many of our efforts have focused on cleaning up degraded waters and sediments, but insufficient resources have been devoted to stopping pollutants before they reach our rivers, beaches, and species.

D. **Work together** as a coordinated system to ensure that activities and funding are focused on the most urgent and important problems facing the region. Our current management approach to the ecosystem is fragmented, programs and laws were established on a piecemeal basis to address individual problems, and the system does not address Sound-wide and local problems on a coordinated basis at an ecosystem scale.

E. **Build and implement the new system** to support the implementation and continual improvement of the Action Agenda. This includes: 1) using a performance management system that includes adaptive management and clear pathways for decision making, coordinated monitoring, accountability for action, and coordinated data management; 2) providing sufficient, stable funding focused on priority actions; 3) implementing a focused scientific program with priorities for research, and developing appropriate measures to improve understanding of the ecosystem and the effectiveness of our actions; and 4) increasing and sustaining coordinated efforts for communication, outreach, and education.

Each of these priorities is described in detail with Sound-wide applicable near-term actions. In addition, eight action area profiles describe the different benefits of each action area, the major local ecosystem stressors, and the local priority actions that mirror the regional priorities and reflect local conditions and issues.

4. Where should we start?

This section of the Action Agenda is a priority near-term work plan that identifies priority actions among all the near-term actions, as well as implementation roles and responsibilities.

What else is included with the draft Action Agenda?

The draft Action Agenda includes a draft funding strategy and draft Biennial Science Work Plan, as well as technical back up materials for Action Agenda Question 1 and Question 2.

How was the Action Agenda developed?

The Puget Sound Action Agenda was developed in a fundamentally different way from traditional "top-down" planning approaches, using transparent public forums and soliciting extensive citizen and scientific input. During 2008, the Partnership took the four key questions for framing the Action Agenda on the road to listen to scientists, elected officials, businesses, volunteers, and local communities. Public workshops, expert topic forums, and implementer-focused action area meetings discussed the health of Puget Sound, future threats, what is being done, and what people think is needed. Over 1,600 people attended public workshops, 75 presentations were given to business and community organizations, and 8,223 public comments were received in writing or on-line with ideas and comments on the Partnership's work.

- Implementer-focused workshops were held in the seven action areas of Puget Sound to discuss the important features of the action area, local stresses and threats, and their top priorities for action. This work is primarily reflected in the action area profiles.

- Topic forums of regional experts were convened to analyze six issues that reflect ecosystem health: land use and habitat, species and biodiversity, water quality, freshwater quantity, human health, and human well-being. Findings on conditions, management approaches, and recommendations are described in the topic forum papers. The work of the topic forums informed Questions 2 and 3 of the Action Agenda.

- Scientific input was overseen by the Science Panel and included development of desired outcomes and indicators to measure ecosystem health, peer-review of the scientific elements of the topic forum papers, and the preparation of a biennial science plan that will help refine elements of the Action Agenda as the region moves forward.

How is salmon recovery incorporated into the Action Agenda?

In 2007, the Puget Sound Partnership became the regional salmon recovery organization. The Partnership is responsible for implementing the Chinook Salmon Recovery Plan that was approved by NOAA. One of the Partnership's jobs is to integrate salmon recovery into the broader efforts to sustain the Puget Sound ecosystem. The salmon recovery effort includes 14 watershed groups that have been working together for many years and accomplished a great deal by working collaboratively to prioritize and implement essential actions like restoring estuaries, removing passage barriers, and better managing hatcheries. This work will be integrated with the broader effort.

Specific ways that the Action Agenda incorporates salmon recovery work:

- What is a healthy Puget Sound? The Chinook recovery targets are being used as one measure of health. In addition, the importance of recreational, sustenance and commercial catch is also highlighted as a human well-being outcome.

- What do we need to do and where should we start? Implementing the Salmon Recovery Plan, including the three-year work plans, is specifically called out in the Action Agenda, as well as implementing the hatchery recommendations and continuing to improve the integration of habitat, hatchery, and harvest actions. The Action Agenda calls for continuing support of the local watershed groups that are key in driving the local collaborative efforts and points out that the region needs a prioritized protection and restoration strategy that goes beyond salmon recovery and incorporates new information. The existing work will be a foundation for this strategy.
- Performance management. The salmon recovery effort has a required monitoring and adaptive management program and has embarked on pilot report cards. Both of these efforts will be included in a more coordinated monitoring and accountability strategy for Puget Sound.

How to use this draft document

The draft document will be refined and completed by the December 1 deadline. In addition to refining the information in the draft Action Agenda, the final document will include a much shorter, very accessible summary, graphics that show how the actions link to threats and help reach the goals of a healthy Puget Sound.

The Partnership welcomes input on the draft Action Agenda, draft funding strategy, and draft Biennial Science Work Plan. We are accepting comments through November 20, 2008. We will make changes to the draft based on comments received in writing and in person at the November 11th and November 21st Leadership Council meetings, and the November 10th Ecosystem Coordination Board meeting. The Partnership's Science Panel will also review the scientific portions of the Action Agenda during the public review period. We will continue to work with the Leadership Council to refine nuances of the draft and prepare the final version of the Action Agenda for release on December 1, 2008.

Comments can be submitted on the draft Action Agenda through Partnership's Web site at www.psp.wa.gov. Hard copy comments must be received by November 20th, and can be mailed to:

Puget Sound Partnership
PO Box 40900
Olympia, WA 98504

What can people do now to help?

Citizen action is essential to successfully restoring and protecting Puget Sound. The good news is that when educated about the serious problems facing Puget Sound, citizens are more willing to make lifestyle changes and support public policies that will make a difference.

The Partnership believes the daily involvement of thousands of citizens doing many small and big things to save Puget Sound will make a dramatic difference.

The Partnership is working with agencies and groups across the Puget Sound to help get the word out about the simple things average citizens can do to make a difference in their area of the Sound. If you want to be a part of the solution, here are some easy ways to get involved.

Fix up!

Get involved on the ground with restoration, protection, and outreach projects in your area of Puget Sound. Be an active part of the solution by getting out there and helping fix up Puget Sound. There are hundreds of organizations that need your help. Visit www.psp.wa.gov to connect with a group in your area.

Soak up!

Soak up Puget Sound! For centuries the land of this area has acted as a natural sponge, soaking up and filtering out harmful or toxic particles being carried by surface water before reaching the Sound. Pavement and pipes that carry unfiltered water directly into Puget Sound are destroying this essential service. Do your part to increase the soaking ability of our land by increasing rain gardens, pervious surfaces, and native plants, and reducing pavement, large areas of grass, and clear cutting of trees.

Clean up!

The number one contributor to the decline in Puget Sound health is the harmful and toxic chemicals we add to the water running into Puget Sound through everyday activities. We need to clean up our act and therefore clean up the waters of Puget Sound. Some easy steps you can take to clean things up:

Vehicle Operations

What comes off and out of your car makes its way into Puget Sound

- Drive less
- Check for leaks
- Use substitute for copper break pads
- Ask for steel tire weights instead of lead

Fertilizers & Herbicides

What does not get used up by plants makes its way into Puget Sound

- Pull and smother weeds instead of spraying
- Follow package directions exactly
- Improve soil
- Use native plants

Car Washing
What products (soaps, waxes, cleaners) you use wash into Puget Sound
- Use commercial car washes
- Wash on pervious surfaces like a lawn
- Use car wash kits for charity car washes

Pet Waste
What is left on the lawn will be washed into Puget Sound
- Scoop your poop and put it in the trash!

Household Products/Chemicals
What goes down your sink, toilets, and drains makes its way into Puget Sound
- Choose least toxic alternatives for household cleaners
- Use more elbow grease, less chemicals
- Use your local waste facility to dispose of chemicals properly

Septic Systems
What a septic system cannot handle makes its way into Puget Sound
- Maintain your septic system
- Do not overuse or abuse its abilities (toilet paper only)
- Fix failing septic systems

QUESTION 1
What is a healthy Puget Sound (and how do we know if we are moving toward one)?

Puget Sound is one of the most biologically rich places on earth. Its snowcapped mountains and marine waters, extraordinary wildlife, lush forests, and dynamic rivers and beaches draw millions of admirers each year. The orca whales and salmon that inhabit its waters are irreplaceable totems of an entire region. Its bounty includes pristine drinking water, seafood, timber, and a free buffer from Pacific storms. Puget Sound supports thriving waterfronts and great communities. It offers opportunities for outdoor recreation experiences to hikers, sailors, and beachcombers alike. Puget Sound is a regional and national treasure.

Puget Sound is also an economic engine. Ocean-related industries generate over $3.8 billion in annual wages to the Puget Sound economy and thousands of business establishments use Puget Sound counties as their base of operations. Its abundant natural resources and deep water ports create thousands of family wage jobs. And in recent times, Puget Sound's allure has drawn the brightest, most creative and innovative people from around the country and world to its shores. Once here they write computer code, draft building plans, find cures to disease, brew coffee, sell virtually anything online, and design and build composite airplanes.

Recognizing the extraordinary cultural and economic value of Puget Sound to the region, Governor Gregoire created and charged the Partnership with developing an Action Agenda to achieve a healthy Puget Sound ecosystem. The Legislature, in full agreement with the Governor, established six goals for the Partnership to achieve by 2020:

> *(a) A healthy human population supported by a healthy Puget Sound that is not threatened by changes in the ecosystem;*
>
> *(b) A quality of human life that is sustained by a functioning Puget Sound ecosystem;*
>
> *(c) Healthy and sustaining populations of native species in Puget Sound, including a robust food web;*
>
> *(d) A healthy Puget Sound where freshwater, estuary, nearshore, marine, and upland habitats are protected, restored, and sustained;*
>
> *(e) An ecosystem that is supported by ground water levels as well as river and stream flow levels sufficient to sustain people, fish, and wildlife, and the natural functions of the environment;*
>
> *(f) Fresh and marine waters and sediments of a sufficient quality so that the waters in the region are safe for drinking, swimming, shellfish harvest and consumption, and other human uses and enjoyment, and are not harmful to the native marine mammals, fish, birds, and shellfish of the region.*

These goals express a vision for a healthy ecosystem, which includes people as a prominent part of the picture.

What defines success?

It is vital to have clearly defined goals in order to have a hope of achieving them. Those goals must be measurable so it is possible to tell how much progress we are making toward realizing them. We worked with the Science Panel to identify specific **outcomes**—qualitative statements of what a healthy condition is— for each of the legislative goals:

> **Human health** is supported by clean air and water, and marine and freshwaters that are safe to come in contact with. In a healthy ecosystem the fish and shellfish are plentiful and safe to eat, air is healthy to breathe, freshwater is clean for drinking, and water and beaches are clean for swimming and fishing.
>
> **Human well-being** means that people are able to use and enjoy the lands and waters of the Puget Sound. A healthy ecosystem provides aesthetic values, opportunities for recreation, and access for the enjoyment of Puget Sound. Tribal cultures depend on the ability to exercise treaty rights to fish, gather plants, and hunt for subsistence, cultural, spiritual, ceremonial and medicinal needs. The economic health of tribal communities depends on their ability to earn a livelihood from the harvest of fish and shellfish. Human well-being is also tied to economic prosperity. A healthy ecosystem supports thriving natural resource and marine industrial uses such as agriculture, aquaculture, fisheries, forestry, and tourism.
>
> **Species** are "viable" in a healthy ecosystem, meaning that they are abundant, diverse, and likely to persist into the future. Harvest that is consistent with ecosystem conditions and is balanced with the needs of competing species is more likely to be sustainable. When ecosystems are healthy, non-native species do not impact the viability of native species or impair the complex functions of Puget Sound food webs.
>
> **Marine, nearshore, freshwater, and terrestrial habitats** in Puget Sound are varied and dynamic. The constant shifting of water, tides, river systems, soil movement, and climate form and sustain the many types of habitat that nourish diverse species and food webs. Human stewardship can help habitat flourish, or disrupt the processes that help to build it. A healthy ecosystem retains plentiful and productive habitat that is linked together to support the rich diversity of species and food webs in Puget Sound.
>
> **Clean and abundant water** is essential for all other goals affecting ecosystem health. Freshwater supports human health, use, and enjoyment. Instream flows directly support individual species and food webs, and the habitats on which they depend. Human well-being also depends on the control of flood hazards to avoid harm to people, homes, businesses, and transportation.
>
> **Water quality** in a healthy ecosystem should sustain the many species of plants, animals, and people that reside there, and not cause harm to the function of the ecosystem. This means that pollution does not exceed harmful levels in marine waters, sediments, or fresh waters.

Once these outcomes were identified, it was possible to begin the process of linking outcomes with specific measurable indicators of ecosystem health.

How will we hold ourselves accountable? Indicators and benchmarks

We count and measure many things in Puget Sound including salmon and birds, water temperature, bacteria near shellfish beds, toxic contamination in fish and marine mammals, streamflow, and the loss or gain of habitat. However these separate measures are often not linked together in a way that tells us about the ecosystem as a whole. In short, we often do not know if we are winning or losing the fight to save Puget Sound.

It is possible to organize all of these measurements and focus them on determining the status of the outcomes for each of our goals. Conducting these measurements systematically will ultimately identify trends that will tell us if we are making progress toward achieving our goals. Systematic monitoring will also help us be accountable for the success or failure of our management actions.

The measures themselves are indicators. An **indicator** is a physical, biological, or chemical measurement, statistic, or value that provides evidence of the status of Puget Sound. Indicators were carefully selected to measure different facets of each outcome. (This is similar to the way the Commerce Department uses GDP as an indicator of overall economic health of the US economy.) Indicators include things like drinking water quality, acres of shellfish beds that are closed, number of oil spills, or the abundance of particular species, like salmon. Taken together, indicators help measure progress toward outcomes, goals, and the health of the ecosystem as a whole.

The Puget Sound Partnership has adopted a set of provisional indicators related to ecosystem recovery outcomes and goals (see Question 1 Appendix). The Science Panel recommended Partnership adoption of these as provisional indicators, setting the expectation that future work will be needed to develop the final set of indicators. The subset of these indicators will be used to report progress.

Targets specify the desired condition that defines success and benchmarks describe interim milestones toward the target. Each of the goals for Puget Sound will have at least one indicator with a target and benchmark to start as shown below:

Provisional Indicator	***Target*** *– desired condition for 2020 (unless other date specified)*	**Benchmark** *– interim milestone*
Shellfish growing areas	Net increase of 10,000 acres of commercial shellfish growing area open for direct harvest based on improved sanitary conditions	Net increase of 1,000 acres of commercial shellfish growing area open for direct harvest each biennium based on improved sanitary conditions
Land cover	For each action area: forest acreage below 1000 feet is at least 90% of 2001 level and impervious area is not more than 120% of 2001 level	For each action area in 2011: forest acreage below 1000 feet is at least 95% of 2001 level; impervious area is not more than 110% of 2001 level
Salmon and steelhead status and trends	By 2055, two to four viable populations of Chinook salmon in each of five regions: Strait of Georgia, Strait of Juan de Fuca, Hood Canal, Whidbey Basin, and Central/South Puget Sound. Remaining populations and watersheds are providing ecological functions consistent with population and ESU viability.	Recovery Council and NOAA Fisheries implementation review in 2015 finds that the status of populations is improving and the primary factors limiting the status of populations and the ESU are decreasing.

Eelgrass status and trends	Acreage of eelgrass in each action area recovers to estimated historic number of acres	Sites with increasing eelgrass area outnumber sites with decreasing area
Percent exceedance of instream flows	In wet years, instream flows in all watersheds exceed minimum low flow levels set by rule or other agreement	In wet years, instream flows exceed minimum low flow levels set by rule or other agreement
Toxics in pelagic fish	PBDE levels in Pacific herring from south and central Puget Sound are not higher than levels in herring from the Strait of Georgia	In 2014, PBDE levels in herring from Puget Sound and Georgia Basin are not higher than levels observed in 2004

Provisional targets and benchmarks for evaluating Puget Sound ecosystem recovery: These indicators and associated targets provide a clear and measurable definition for each of the goals established by the legislature for the Partnership. The benchmarks will give us an early indication of the effectiveness of the management actions that we implement and allow us the opportunity to make adjustments when necessary. Measurable indicators and benchmarks are at the heart of the Partnership's adaptive management and accountability system (see Question 3, Part E) and represent a radically new way of approaching Puget Sound recovery.

QUESTION 2
What is the status of Puget Sound and what are the biggest threats to it?

The people of Puget Sound have built a thriving economic center, creating the second largest port on the West Coast, global enterprises such as Boeing, Microsoft, and Starbucks, lively ecotourism businesses, world-renowned seafood industries, sophisticated tribal communities, and a timber industry that is still a national and international leader. Some of our industries, such as timber and shellfish production, are directly dependent on the ecosystem, while others rely on Puget Sound for shipping and an attractive quality of life to attract prospective workers and their families. In a scant 150 years, the human population of Puget Sound has grown from 50,000 to four million.

During that time, we eliminated three-quarters of the saltwater marsh habitat through dikes and drainage, and armored one-third of the Puget Sound shoreline. We removed 66 to 84% of the old-growth forest in the basin in the last 50 years. We constructed 500,000 septic systems, permitted and constructed 972 municipal and industrial wastewater discharges, spilled at least 230,000 gallons of oil and hazardous waste (just since 1985), constructed ten major dams and thousands of small diversions and stream blockages, re-plumbed the Cedar River system, straightened and diked hundreds of small and large rivers, and introduced almost 100 invasive marine plant and animal species—sometimes intentionally. From 1991 to 2001, impervious surfaces increased another 10.4%, leading to further changes in streamflow runoff and expanding a major pathway for a host of other pollutants to enter our rivers, soil, and food supply.

What do these changes tell us for the overall health of Puget Sound? Prior to the identification of ecosystem level indicators, we reported information on starving orcas, missing salmon runs, closed shellfish beds, toxic beaches, massive fish kills, and disease outbreaks from eating contaminated seafood, but did not know what measures best reported the overall condition of Puget Sound. Using the indicators identified in Question 1, this section of the Action Agenda summaries what we know today about the health of the ecosystem. Understanding the current state of Puget Sound will help us better identify actions needed to reach the goals. We have also categorized the threats facing the region and identified two critical threats that must be addressed immediately.

In 2009, the Partnership will produce a new “State of the Sound” report that will comprehensively reflect this approach, build on earlier efforts to describe status and trends within Puget Sound, and present the problems in a fuller context of overall ecosystem health. Over time, the region will need to know the magnitude of threats overall, and within and between geographic sub-regions.

How did the Partnership identify the health of Puget Sound and threats?

Over the past 18 months, the Partnership used three related efforts to better understand the existing condition of the Puget Sound ecosystem and the key threats to ecosystem recovery: 1) an integrated ecosystem assessment led by NOAA; 2) a series of topic forums that assembled the best current information about the Sound; and 3) a process to gather and synthesize data at the local level in each of the seven action areas. The integrated ecosystem assessment will ultimately provide a more comprehensive picture of the status of and threats to the Puget Sound ecosystem,

but our work has given us confidence that we have enough information about what is wrong to begin prioritizing solutions.

How healthy is Puget Sound?

The following is a summary of the status of the ecosystem organized by our ecosystem goals. A more complete picture of the status of the Puget Sound ecosystem can be found in the Partnership's topic forum papers and summary of threats.

Human Health: Human health is closely tied to environmental health. Humans are impacted by pollution through contact with water, through consumption of seafood, through breathing, and through other pathways.

- **Action Agenda measure:** The Action Agenda measure is the number of clean shellfish growing areas available around the Sound as well as tracking other indicators related to various human health outcomes. The 2020 target for clean shellfish growing areas is a net increase of 10,000 acres of commercial shellfish growing areas open for direct harvest based on improved sanitary conditions. A 2020 target for lower levels of contamination in herring, a fish that is eaten by salmon and other fish that people enjoy, would indicate reduced human health risks from consuming Puget Sound fish.
- **Current condition:** Although cleanup efforts have resulted in a number of shellfish beds that have re-opened for harvest, 30,000 acres remain closed. In 2004, herring in south and central Puget Sound have three to nine times greater levels of contamination by persistent toxic chemicals than herring from northern Puget Sound. Toxic contaminants, especially PCBs and mercury, occur in high enough levels in Puget Sound fish that the Department of Health advises that people limit the number of meals they eat of winter resident Chinook (2 meals per month), other Chinook (1 meal per week), rockfish in many areas (1 meal per week), and flat fish like English sole in some urban bays (2 meals per week). Other human health concerns related to the condition of the Puget Sound ecosystem include illnesses from exposure to biotoxins in shellfish, particulates and other pollutants in air, and pollution in water used for drinking and swimming.

Human Well-Being: Healthy economies, vibrant cultures, continued access to recreational landscapes, and preservation of scenic resources depends on the quality of the environment.

- **Action Agenda measure:** Measures that could be used to indicate human well-being include shoreline access opportunities, the number of days open for sport fishing, acres of land in economically productive use, and the ability of tribes to engage in their ancient practice of harvesting Chinook and other salmon. The measure for the Action Agenda is the loss of forests and other natural land cover across the Puget Sound landscape. The 2020 target is to retain 90% of the low elevation forest acres measured in 2001 and to increase the impervious land area not more than 20% from 2001 levels.
- **Current condition:** Nearly 200 square miles of forested area were lost from the Puget Sound basin in a recent 10-year period (1991-2001), representing a loss of nearly four percent of the lowland forests. The loss of these forest lands represents a loss of open space, recreation opportunities, and the ability to earn a livelihood in sustainable forest industries. As an indication of other human well-being considerations, there are many rivers in the Puget Sound basin that no longer have sufficient Chinook to allow any harvest

whatsoever and sport fishing days have been reduced in central Puget Sound by over 75% since 1986.

Species and Food Webs: Puget Sound food webs are fraying and several species do not appear to be able to reproduce themselves at sustainable levels.

- **Action Agenda measure:** The target is recovery of Chinook salmon populations as a key indicator of the health of species and the food web. The target is to have two to four viable populations of Chinook in five regions by 2055, the planning horizon for the Chinook recovery plan, and to have all populations (and their watersheds) providing ecological functions consistent with viability of Puget Sound Chinook.
- **Current condition:** Chinook salmon are at less than 10% of their historic levels in Puget Sound river systems with some below 1%, and an estimated 8 to 15 populations of Chinook have been lost entirely. More losses of southern resident killer whales occurred this year, possibly from hunger stemming from a lack of salmon. The problem extends to other species groups that rely on marine, freshwater, and terrestrial habitats: since the late 1970's, we have lost 27% of all marine birds and 21 terrestrial and aquatic species have been listed as threatened or endangered.

Land Use and Habitat: Freshwater, estuary, nearshore, marine and upland habitats are critical in supporting species health and human well-being.

- **Action Agenda measure:** The measures are land cover change (discussed above) and the extent of eelgrass beds, that are vital spawning beds for forage fish and other species upon which the food web depends. The 2020 target for eelgrass beds is recovery to historic levels.
- **Current condition:** In 2005, there were 50,400 acres of eelgrass. Many habitats have been shrinking in size, diminished in quality, fragmented, and the processes that form and sustain them have been disrupted in many places. Over the last 50 years, Puget Sound lost at least two-thirds of its remaining old growth forest, over 90% of its native prairies, 80% of its salt and freshwater marshes, and one-third of its natural shoreline has been hardened.

Freshwater Resources: Ample freshwater resources are essential for people and instream uses.

- **Action Agenda measure:** The 2020 target is to have instream water flows in wet years that exceed established minimums in all watersheds.
- **Current condition:** Eleven of nineteen Puget Sound rivers are already at levels that impair salmon due to low seasonal flows and over-allocation of out-of-stream uses. Almost every watershed in Puget Sound has local areas where freshwater supplies are not adequate to meet current human demands. The Nooksack, Snohomish, Lake Washington, Green, White, Puyallup, Dungeness, and Elwha are considered to be "water critical" basins for salmon because of over-allocated water rights and low flow conditions.

Water Quality: Clean water is also critical for people and species.

- **Action Agenda measure:** The Action Agenda measure is contaminant levels in herring, an important prey species for seals, salmon and other fish. The 2020 target is to reduce the toxic contamination of herring in central and southern Puget Sound to the lower levels seen in northern Puget Sound as an indication that we have controlled pollution sources.

- **Current condition:** Water quality in Puget Sound waters has been affected by pollution from human and animal wastes, fertilizers and pesticides, and toxic chemicals that run off pavement during storms. Over 1,000 freshwater lakes and streams are classified as "impaired" and low oxygen conditions are increasingly frequent in Puget Sound marine waters. Puget Sound contains some of the most toxic marine mammals in the world. Harbor seals in Puget Sound were found to be seven times more contaminated with the persistent toxic chemicals known as PCBs than those inhabiting the adjacent Strait of Georgia in Canada. The salmon and rockfish that we eat are also polluted.

What threatens the health of Puget Sound?

The current condition of Puget Sound shows signs that the web of life is fraying. What is causing these problems? It is not only what humans do as they live, work and play in Puget Sound, but how they go about it that affects the health of the Sound overall. Some activities are fairly obvious as harmful to ecosystem health, such as the input of toxic pollution, oil spills, and sewage; water withdrawals from rivers and aquifers; and habitat destruction. Other activities that are technically "threats", such as the harvest of timber, fishing, shellfish and finfish aquaculture, and farming, are highly beneficial to people. These activities depend directly on healthy ecosystem conditions but, if not properly managed, can also damage the ecosystems upon which they depend.

The Partnership has identified six broad categories of threats: habitat alteration, pollution, surface/groundwater impacts, artificial propagation, harvest, and invasive species. The magnitude of these threats is amplified by large-scale processes such as weather, volcanoes, earthquakes, ocean circulation patterns, population growth and climate change. Each of the threat categories is described below. Specific local information about threats in each of the action areas is presented in Question 3.

Habitat alteration and land conversion: Habitat alteration consists of activities such as clearing forests, armoring shorelines, diking and draining saltmarshes and freshwater wetlands, dredging, filling, and paving the land. Habitat altering activities occur throughout the region from the forests on the flanks of the Cascades and Olympics to the beaches and sea floor of the Sound. Habitat diversity, quality and availability, species diversity and abundance, water quality and water quantity, are significantly threatened by habitat alteration. In addition, habitat alteration amplifies many other threats, especially pollution and ground and surface water availability. Because of these interrelationships, habitat alteration, especially land conversion, is one of the most significant threats to Puget Sound recovery.

The alteration of nearshore habitat through the construction of docks and bulkheads provides a striking example of how a localized activity can threaten broad components of the ecosystem. The nearshore environment is a rich feeding and rearing ground for herring, especially when eelgrass beds are present. Pacific herring in Puget Sound are a universal source of prey for all species of salmon, as well as seals, sea lions, orcas, hake, halibut, cod, and 14 species of ducks and gulls. Herring also feed loons, herons, puffins and many other marine bird species. Herring populations have fluctuated dramatically in Puget Sound in recent years due in part to the alteration of habitat that is important to their survival. The act of putting in a dock or building a bulkhead could very well make it more difficult for our starving resident orca to find food.

Pollution: Pollution continues to enter Puget Sound even as we clean up pollutants of the past. Surface water runoff appears to be the primary transporter of toxic pollution to Puget Sound, with the most concentrated loads coming from developed lands. Fertilizers and animal waste add to this mix. This pollution typically accumulates during the drier summer months. With the first rains, massive quantities of the accumulated pollution pours into streams and rivers just as fall salmon are waiting in the lower river reaches to access their spawning grounds. Sewage treatment systems, malfunctioning septic systems and direct discharge are pathways to rivers, lakes, and marine waters, and add concentrated nutrients, viruses and bacteria to this mix.

Where does this pollution come from? Vehicles release toxic substances from oil leaks, brake linings, and tire wear. Airborne emissions appear to be a widespread source of loading for some chemicals of concern in the air and water. Emerging contaminants from medication and personal care products often pass through sewage plants without treatment. The half million on-site septic systems in Puget Sound are a significant source of nitrogen loading into rivers and marine waters. Where the systems do not function properly, they are also major sources of bacteria and viruses. Fecal coliform bacteria is one of the most ubiquitous pollutants in the Puget Sound region. Combined sewer overflow outfalls occasionally discharge mixed stormwater and untreated wastewater to Puget Sound during wet weather. Major oil spills in Puget Sound are relatively infrequent, but still pose a potential catastrophic threat.

Pollution threatens our ability to achieve all six of our Puget Sound recovery goals and appears to be a significant, far-reaching threat to the health of Puget Sound. In the quintessential example of "what goes around, comes around," toxic substances and harmful diseases end up back in the water and food supply for humans, resulting in closures and consumption warnings for fish and shellfish. Pollutants also result in closures at recreational beaches and lakes, high water temperatures in rivers and Puget Sound marine waters, and contaminated sediments that contribute toxic substances to the food web for decades. Many Puget Sound businesses such as shellfish aquaculture depend directly on environmental quality for their continued existence.

Surface and groundwater supply and availability: Water falls all too abundantly in Puget Sound at some times of the year, but in July and August Seattle receives less rainfall than Phoenix, Arizona. We have already experienced an 18% decline in freshwater flow entering Puget Sound over the past 50 years, affecting water temperatures, marine water circulation, and oxygen conditions in water bodies. Reduced availability of water and altered runoff patterns from land clearing are direct factors limiting the productivity of salmon and other species. Water consumption and local runoff also affect the water supplies and runoff patterns for neighbors in many Puget Sound communities—land development can increase flooding on neighboring properties during the wet season and water use affects junior water right holders at dry times of the year. We may be famous for our rain, but land development decisions will increasingly reflect the need to consider flow patterns, water scarcity, and tradeoffs among competing activities.

Snowpack sustains our rivers, reservoirs, and aquifers. The April 1 snowpack at mid and low elevation basins is projected to decline by 44% by the 2020s. Altered weather regimes associated with climate change will likely compound many existing threats to surface and groundwater supply and availability: over commitment of water resources; projected increases in domestic, municipal, commercial, and industrial demand; land use practices that alter stream flow patterns; and modification of stream channels through dams, levees, bank armoring and ditching.

Other threats due to invasive species, artificial propagation, harvest and other activities:

- **Invasive species** enter Puget Sound through importation of seeds, fruits, plants, and vegetables; ballast water discharges from ships; soil brought in with nursery stock; on commercial and recreational boat hulls; and from people releasing exotic pets and plants "into the wild." While a comprehensive inventory of invasive species across Puget Sound has not yet been conducted, the magnitude of the problem is beginning to emerge from regional studies. The threats from invasive species vary across the Puget Sound action areas. Purple loosestrife, Spartina species, knotweed, Scotch broom and other invasive plants are here now and could transform estuaries and river corridors. Tunicates are invading marine waters. Domesticated animals can transmit potentially fatal diseases to native species.

- **Artificial propagation** of species is conducted for human use and quality of life benefits. These activities may contribute pollutants to the environment or facilitate the introduction of non-native species, depending on how they are conducted. The potential risks to native species, modification of habitat, and aesthetic impacts resulting from aquaculture and hatchery operations vary considerably by site, species, and methods. Hatchery operations to produce salmon have historically had effects such as loss of genetic diversity and genetic fitness, disease transfer, overharvest of native species that are co-mingled with hatchery stocks, and habitat impacts from the facilities themselves. Impacts have varied depending on the site, methods of operation, and the production objectives at each facility.

- **Harvest** can occur on both plant and animal species. Harvest is considered to be a historic factor in the decline of Puget Sound rockfish, Pacific hake, pinto abalone, and Chinook salmon. Past harvest management practices focused on individual species and attempted to maximize the sustainable yield for human harvest rather than considering other species and ecosystem needs. For some threatened animal species, focused harvest management has been able to stem the decline of the target species, but may not adequately consider cross-species impacts, such as by-catch of other fish, birds, and marine mammals, or the loss of food for predators such as orcas. Harvest of plant species (such as trees) that serve as habitat for fish and wildlife species may adversely affect the species that depend on them or remove building blocks that form habitat.

What are the biggest problems that we need to begin to address?

In synthesizing the information available about the condition of Puget Sound's health and the threats, the Partnership has concluded the signs of lost icons points to ominous signs of systemic failure. The significant losses of our estuaries, rivers and floodplains, and forests combined with the slew of pollutants delivered to Puget Sound every day have had profound and potentially irreversible consequences on the present and future health of the region.

Population growth and climate change will amplify current the situation. At least another million people will live here in the next 15 to 20 years. At the same time there is compelling evidence that the region's climate is changing. Temperatures in the Pacific Northwest have risen faster than the global average, and Puget Sound waters are warmer. Most climate change models predict

increasing temperatures, diminishing snowpack, earlier runoff, reduced summer flows, and rising sea levels in Puget Sound in the 21st century.

Compounding these challenges is the fragmented system now in place to manage natural resources. The region is simply not equipped or organized to solve the current problems facing Puget Sound, let alone the changes that will come. Question 3 of the Action Agenda outlines strategies and tactics needed to address the over-riding problems of habitat alternation and loss, and to fix the current management system so that these problems can be effectively addressed.

In addition, over the past year a new system was launched to better understand the relative magnitude of threats and risks in the ecosystem**.** The linkages between how people affect the ecosystem and how the ecosystem affects society are not always obvious, and the science of determining cause and effect at this scale is largely uncharted. NOAA's Northwest Fisheries Science Center is coordinating an Integrated Ecosystem Assessment (IEA) of Puget Sound—one of the first in the nation. The IEA will give the region a better understanding of the relative magnitudes of threats to the ecosystem as a whole and within particular sub-regions, as well as identify ecosystem elements most vulnerable to harm. As more information about linkages within the Puget Sound ecosystem are made clear, the impacts of human choices and the tradeoffs of these choices will be more apparent. This will enable us to more precisely tailor our recovery strategies and projects.

QUESTION 3
What actions should be taken that will move us from where we are today to a healthy Puget Sound by 2020?

The Puget Sound Partnership is charged with identifying, prioritizing, and implementing actions that will achieve the goals for a healthy Puget Sound by 2020. Understanding what a healthy ecosystem should look like in 2020 and defining the current and future threats to ecosystem health are tough questions, but the next step—determining what to do about it—is the toughest challenge of all.

During the development of the Action Agenda, people commented that we already know what the problems are and that we should just get on with fixing them. Then citizens, government agencies, interest groups, and elected officials submitted over one thousand suggestions on what should be done, illustrating some of the difficulty in prioritizing actions for Puget Sound. Most of the comments focused on a specific issue, project, or location; others described a myriad of issues that need to be addressed Sound-wide. Individually or in groups, people want to prevent oil spills, save orcas, restore their local creek, recover salmon, regulate geoduck production and harvest, increase recycling in the schools, build green, enforce existing laws, ban disposable water bottles and establish conservation reserves around Puget Sound, among a myriad of other actions. All of these actions are important, but provide little guidance on where to start and what would be the most effective use of resources.

The Partnership synthesized a significant amount of existing work and input received during the development of the Action Agenda to create five priority strategies. Together, these five priorities address major threats to ecosystem health and embrace a new approach to managing and sustaining the Puget Sound ecosystem. The list of things to do for Puget Sound is daunting and the actions cannot be tackled all at once. Building a comprehensive, consolidated list of actions is a significant step forward. Our strategies are to:

A. **Protect** the intact ecosystem processes, structures, and functions that sustain Puget Sound. Avoiding problems before they occur is the best and most cost-effective approach to ecosystem health.

B. **Restore** the ecosystem processes, structures, and functions that sustain Puget Sound. Protecting what we have left is not sufficient, and significant effort at an unprecedented scale is needed to undo past damage.

C. **Prevent water pollution at its source.** Many of our efforts have focused on cleaning up degraded waters and sediments, but insufficient resources have been devoted to stopping pollutants before they reach our rivers, beaches, and species.

D. **Work together** as a coordinated system to ensure that activities and funding are focused on the most urgent and important problems facing the region. Our current management approach to the ecosystem is fragmented, programs and laws were established on a piecemeal basis to address individual problems, and the system does

not address Sound-wide and local problems on a coordinated basis at an ecosystem scale.

E. **Build and implement the new system** to support the implementation and continual improvement of the Action Agenda. This includes using a **performance management** system that includes adaptive management, coordinated monitoring, accountability for action, and coordinated data management; providing **sufficient, stable funding** focused on priority actions; implementing a focused **scientific program** with priorities for research, appropriate measures to improve understanding of the ecosystem and the effectiveness of our actions, and clear pathways for informing decision making; and increasing and sustaining coordinated efforts for **communication, outreach, and education**.

Question 3 of the Action Agenda describes what we need to do, identifies near-term actions, and describes how we need to do this together. **Part I describes the five Sound-wide strategic priorities for the Puget Sound ecosystem**. For each priority, there is a description of the problem that it is intended to address and rationale for choosing the priority, key objectives for attaining desired ecosystem outcomes, and near-term actions needing to move the region forward. **Part II has eight action area profiles** that describe the different benefits of each action area, the major local ecosystem stressors, and the local priority actions that mirror the regional priorities and reflect local conditions and issues. The implementation roles and responsibilities for the actions are listed in the Action Agenda under Question 4: Where should we start?

How were the priorities and objectives developed?

The Action Agenda strategies and actions have been developed though extensive collaboration with experts and interests from around Puget Sound. Materials for the actions were developed after synthesizing the input from several processes. Over 300 inventories of existing programs and priority actions were provided by implementers via an online inventory, at action areas workshops, and in written comments. Topic forum papers addressing each Partnership goal and associated workshops were attended by more than 500 people, and generated over 1,200 pages of comments. In all, over 1,600 people attended workshops to develop the Action Agenda and over 8,000 comments were received in writing or online. Scientific input was obtained from the early results of the scientific assessment of the ecosystem and the topic forums, and findings were peer reviewed by the Science Panel. In addition, the legislation creating the Partnership identifies specific requirements for managing Puget Sound as an ecosystem.

The Partnership first used the topic forum papers to identify a set of principles for ecosystem management (see below). These principles were refined by the Leadership Council, Ecosystem Coordination Board, and Science Panel. With the principles in hand and the knowledge that habitat loss and water pollution are over-arching issues facing the region, the Partnership looked at the topic forum papers, comments received, and legislative direction to identify the five strategic priorities. The objectives and rationale for action under Priorities A-D was identified through a synthesis of the topic forum work—in many cases, multiple papers pointed to the same or similar needs. The near-term actions for Priorities A-D were identified through the topic forum papers, comments from the action areas, and refined through direction from the Ecosystem Coordination Board and Leadership Council. Criteria used to identify and refine the near-term actions are largely

based on the ecosystem principles. The Partnership has worked with specialists in each area to define the objectives and identify the next steps that are the near-term actions.

Both Sound-wide and locally, the near-term actions include work that should continue or be modified and new work that needs to begin. In some cases, a new long-term approach is identified with near-term guidance that work already on the books should continue in order to not lose momentum.

Over time, the strategic priorities and related actions will need to be refined as we learn more about the ecosystem and the effectiveness of particular techniques. The Biennial Science Work Plan completed in the same timeframe as the Action Agenda identifies near-term research and assessment that will help the region become more strategic. These near-term studies and what would be learned are highlighted in the beginning of Priorities A, B, and C.

Guiding Principles for Ecosystem Management in Puget Sound

The following principles arose from the topic forums and action area meetings in 2008, with refinements from the Leadership Council, Science Panel, and Ecosystem Coordination Board. These principles were used to develop the strategic priorities and actions.

a. Address threats and choose opportunities with the highest potential magnitude of impact.
b. Address threats with the highest level of urgency. (How imminent is the threat; will it result in an irreversible loss, how resilient are the resources that are affected?)
c. Use strategies that have a reasonable certainty of effectiveness and reflect a balanced precautionary and adaptive approach.
    - Actions should have a realistic expectation that they will be effective in addressing the identified threat.
    - Actions and decisions about the use of resources should err on the side of caution to avoid irreversible ecological consequences.
    - Actions should be designed so that they can be measured, monitored, and adapted.
d. Use scientific input—about the importance, urgency, and reversibility of threats; opportunities for management impact; effectiveness of actions; and monitoring and adaptation—in designing, implementing, and evaluating strategies.
e. Use strategies that are cost effective in making efficient use of funding, personnel and resources.
f. Address the processes that form and sustain ecosystems rather than focusing narrowly on fixing individual sites.
g. Attempt to address threats at their origin instead of reacting after the damage has been done. Anticipate and prevent problems before they occur. (With more people coming to the region and a changing climate, a proactive strategy is increasingly important.)
h. Consider the linkages and interactions among strategies.
    - Address multiple threats and their interactions with strategies that work together. We cannot afford to look at problems or develop solutions in isolation.
    - Watch out for unintended consequences. Evaluate strategies so that actions to address one problem do not cause harm to other ecosystem functions and resources.
    - Integrate salmon recovery actions with ecosystem management actions.
i. Account for the variations in ecosystem conditions and processes in different geographic areas of Puget Sound. Parts of Puget Sound are fairly intact while others are severely degraded, and rebuilding strategies need flexibility to encompass regional differences. Ensure that no region or economic sector bears the entire brunt of the responsibility for implementing solutions.

Priority A: Protect Intact Ecosystem Processes, Structures, and Functions

Current situation: Altering habitat and water bodies, pollution, and other human actions described in Question 2 of the Action Agenda damage and destroy the underlying ecological processes that enable Puget Sound to be healthy and productive. Human population growth and a changing climate in Puget Sound amplify the impacts of threats to ecosystem health.

The region lacks a comprehensive, integrated habitat protection strategy to protect sites and areas with the highest ecological value. Habitat protection until now has been scattered and opportunistic. Current environmental protection measures in Puget Sound fail to protect ecosystem processes and structure because the measures were intended to protect individual pieces of the system, typically at the site scale, rather than the connections between ecosystem components across the lands and waters of the larger scale Puget Sound region. Since the 1970s, federal, state, and local governments employed numerous protective regulations, land use planning tools, acquisition of property, incentive programs, and education/stewardship programs designed to protect the environment and to manage for and minimize the adverse consequences of human population growth and associated land cover change. Despite these efforts, human use of the landscape continues to alter and degrade habitat, leaving our ecosystems at increased risk from existing and future development.

Rationale for action: Protecting high quality ecological areas is less expensive and more effective than trying to repair or recreate damaged areas. Protection of land cover is critical for making improvements in water quality. Essential to our ability to protect resources will be encouraging density in urban areas, protecting rural working lands, and avoiding sprawl. It is important to look at remaining habitat at a larger scale, determining what areas are the most ecologically intact and/or provide the greatest level of ecosystem services, and make these our highest priority for protection. An array of tools such as purchasing property and conservation easements, incentive programs, regulations and other planning tools are already available. What is needed is a strategy to match these actions with the areas that are the most important and most vulnerable.

The Action Agenda identifies a comprehensive protection strategy for Puget Sound ecosystems that reflects five primary objectives:

- *Focus growth away from ecologically important and sensitive areas by encouraging dense, compact cities and vital rural communities.*
- *Permanently protect the significant intact areas of the Puget Sound ecosystem that still function well.*
- *Protect and conserve stream flows for natural system and human uses.*
- *Protect working resources lands.*
- *Prevent and rapidly respond to the introduction of new invasive species.*

Improving strategies and actions over time: The strategies and actions identified below will need to be refined over time. Two important areas of study identified in the Biennial Science Workplan will help refine protection strategies.

- A watershed scale study of changes in land use patterns as related to the condition of aquatic habitat. This information would help better understand a) how patterns of land use impact surface water runoff and harm aquatic systems, b) at a watershed-scale, how low impact development would help maintain surface and groundwater hydrology, c) what types of urban land uses are particularly harmful to aquatic systems, and d) what scientific basis can be used to help integrate land use and water resource planning.
- A study of stressors affecting the Puget Sound pelagic food web and restoration of forage fish populations. This information would help better understand a) what ecosystem processes, structures, and functions are critical to the viability of forage fish and b) how would protection of forage fish populations influence the population dynamics of valued species.

In addition, better understanding of the effectiveness of specific protection techniques is needed.

A.1 Focus growth away from ecologically important and sensitive areas by encouraging dense, compact cities, vital rural communities, and protected areas that support the ecosystem Sound-wide.

Attractive cities with appealing neighborhoods, open and vegetated spaces, quality schools, efficient transportation systems, and cultural amenities provide a quality of life that encourages businesses and helps protect the ecosystem. Growth strategies need to encourage density in areas that are designed to support it, retain rural lifestyles, and use planning tools to keep shorelines and vegetated areas intact and functional at an ecosystem scale.

A.1.1 *Build on and coordinate existing efforts to create and implement a Sound-wide vision for accommodating population and economic growth while protecting the Puget Sound ecosystem.*

A.1.1.1 Coordinate and convene existing regional planning groups and collaborative growth process to create a consistent vision for Puget Sound and avoid duplication of effort.

A.1.1.2 Periodically review and update the regional vision.

A.1.1.3 Implement existing growth plans such as Vision 2040 and others, and coordinate implementation across the Sound.

A.1.2 *Prepare and consistently use a regional habitat protection decision-making framework to guide land use protection and restoration decisions in marine, freshwater and upland terrestrial areas*. It should be designed to be applied anywhere in Puget Sound, and when applied this guidance will bring consistency to decision-making across the region.

A.1.2.1 The protection decision-making framework will include a description of the conditions where protection (through impact avoidance) is absolutely necessary to prevent disruption of ecosystem processes in the marine, freshwater and upland terrestrial areas.

A.1.2.2 Upon completion, the habitat protection decision-making framework will help guide the watershed characterizations described in A.1.3, local protection and restoration priorities, and the Action Agenda.

A.1.3 *Use watershed characterizations to set priorities for local protection and restoration work.* The characterizations will build on and expand existing efforts to more comprehensively identify important ecosystem processes in each area and will be used to refine areas that should be protected, best suited for growth and low impact development, and prioritize restoration opportunities including stormwater retrofits.

A.1.3.1 Update and map ecosystem forming processes, structures, and functions that are intact or degraded. Use the regional habitat protection decision-making framework once it is available. Build on existing knowledge including, but not limited to, watershed or river plans, salmon recovery plans, State Biodiversity Plan, Conservation Opportunity Framework, water quality plans, Shoreline Master Programs and GMA Comprehensive Plans, Future Land Use maps, FEMA mapping, and Buildable Lands Inventories. Incorporate new information from the Nearshore General Investigation Study and Climate Change strategies. The work should be performed in a collaborative method, including local governments, interest groups and citizens.

A.1.3.2 In the near-term, perform high-level, watershed characterization studies in each WRIA and associated nearshore areas to ensure that people and institutions are protecting and restoring the highest priority areas of the ecosystem at a local scale. Over the long-term, create and map the Puget Sound's interconnected ecosystem framework in terms of habitat-forming processes, structures and functions, the food web, and species biodiversity to guide decision-making about population and economic growth. Begin with coarse-scale characterization maps that identify key areas for restoration, protection and development within the fastest growing watersheds. Subsequent characterization efforts should "drill down" to more precisely indicate the high-priority areas for protection, ecologically-important areas that are minimally altered and can be effectively restored; unique, rare, or otherwise intrinsically-valuable resources; areas where more intensive development can occur without major additional adverse effects on water quality, water flow, or habitat; and areas where development pressures are most likely to conflict with or confound future mitigation and/or restoration efforts.

A.1.3.3 Using the results of the characterization, identify near- and long-term strategies and targets to protect and restore local ecosystem processes, structures and functions; refine local and regional acquisition strategies; reduce water pollution; and accommodate growth and economic development.

A.1.3.4 Incorporate the findings into federal, state and local plans, policies, and regulations, including strategies to protect natural resource industries as appropriate.

A.1 Near-term Actions

1. Convene a regional planning forum to create a coordinated vision for guiding growth at an ecosystem scale. This should include the Puget Sound Regional Council, existing collaborative process such as the Cascade and Olympic Agendas and Quality Growth Alliance, and other growth related processes for agriculture, transportation, and other sectors.
2. Prepare a set of criteria to guide decisions for acquiring and protecting high-value, high-risk habitat. Convene a working team of scientists and experts from various disciplines to produce a protection decision-making framework. Work collaboratively with the Science Panel and implementers.
3. Initiate or complete maps for each of the watersheds within the Puget Sound basin to identify sites and functions that are the most urgent and important for protection. Build on existing work such as the salmon recovery plan and other assessments and utilize local knowledge and input. Start with counties next in line to complete Shoreline Management Plan updates.

A.2 Permanently protect the significant intact areas of the Puget Sound ecosystem that still function well.

Permanent protection of intact habitat can translate to dedicated networks of open spaces, preserves, wildlife corridors, functional working resource lands, and nearshore and estuarine environments, making this a cornerstone of the Puget Sound protection strategy.

Protection tools include regulatory programs and acquisition programs, including the outright purchase of property or partial acquisition of development rights or conservation easements. Acquiring development rights from highly productive working resource lands, such as farms and forests, is an effective way to protect ecosystem processes/structures while ensuring long-term productivity of working landscapes and rural communities.

A.2.1 *Permanently protect lands at immediate risk of conversion that support intact ecosystem processes through the acquisition of full or partial property interests.*

A.2.1.1 Acquire specific lands at risk of conversion or impacts from other human activities. For the near-term, complete priority acquisition projects identified through established processes (e.g., salmon recovery and others) and/or other sub-regional acquisition strategies developed using ecosystem recovery principles. Over the long-term, acquire property identified through the watershed characterizations and protection prioritization (see A.1). For working farms and forests, use tools that keep land in production.

A.2.1.2 Establish and fund a mechanism to rapidly acquire lands at immediate risk of conversion.

A.2.1.3 Implement a strategic network of Marine Managed Areas that contribute to conserving the biological diversity and ecosystem health of Puget Sound.

A.2.2 *Update and implement regulatory programs related to growth and shoreline protection to increase levels of protection while increasing density in urban areas.*

A.2.2.1 Assist local governments in completing and implementing Growth Management Act, Critical Areas Ordinances, and Shoreline Master Program Updates on schedule and as written.

A.2.2.2 Provide model planning policies to local governments to improve the effectiveness of the local Growth Management Act and Shoreline Management Act programs. Priority should be given to local governments that lack technical expertise, planning staff, and funding.

A.2.2.3 Amend the Shoreline Management Act statues and rules to be more protective of nearshore environments.

A.2.2.4 Work with FEMA and local governments to prevent further residential, commercial and industrial development in floodplains.

A.2.2.5 Limit density in rural areas and GMA designated natural resource lands, using a mix of tools including voluntary incentives, model ordinances, or legislation for the purposes of maintaining functioning ecosystem processes and forest cover.

A.2.2.6 Resolve barriers that currently limit density and infill development in cities and within urban growth areas, such as annexation issues, revenue sharing, and transportation concurrency.

A.2.2.7 Use development incentives to increase and improve redevelopment within urban growth areas, including those for stormwater management upgrades and restoration. Example incentives could include flexible design standards such as setbacks, building height restrictions, parking and road design; use of transfer of development rights; and property tax incentives such as the Public Benefit Rating System program.

A.2 Near-term Actions

1. Purchase high value habitat and land at immediate risk of conversion as identified through existing processes such as the salmon recovery plans and others.
2. Advocate for proposed Wilderness designations: a) Support Alpine Lakes Wilderness addition and b) Pratt River Wild and Scenic Designation
3. Convene a task force to develop a recommended mechanism to the Partnership on options to rapidly acquire properties with high ecological value and imminent risk of conversion. This work must augment and integrate with existing rapid acquisition programs.
4. Work with the Marine Managed Areas Work Group chaired by WDFW to develop recommendations to improve the effectiveness of MPAs by December 2009. Prepare to incorporate recommendations for MPAs in Puget Sound into the Action Agenda and take a lead role in implementation. In consultation with the tribes and other stakeholders, complete the management plans for existing marine managed areas (Cherry Point) and develop management plans for the following nominated reserves: Nisqually Estuary, Protection Island, and Smith Island.

5. Provide funding and technical assistance to local jurisdictions to update local shoreline management programs by current deadlines with all updates complete by 2013. Encourage consistency with the Action Agenda priorities.
6. Provide local governments with guidance regarding a strategy to achieve and measure no-net-loss of ecological function as required by the Shoreline Management Act and the Shoreline Master Program guidelines. This guidance should refer to Shoreline Master Program guidance, the multi-agency Aquatic Habitat Guidelines program, and the Puget Sound Nearshore Partnership. Produce and make available a template for monitoring no-net-loss and guidance on avoidance and minimization of impacts.
7. Change Shoreline Management Act statutes and regulations to require a shoreline conditional use permit for bulkheads and docks associated with all residential development; for all new shoreline hardening; for all seawall/bulkhead/revetment repair projects; and for new docks and piers. Changes should be made to require soft armoring techniques be used where new armoring or retrofits are unavoidable. No-net-loss of shoreline function should be required and new shoreline hardening should be prohibited in areas with feeder bluffs. New over water structures or shoreline hardening in the vicinity of forage fish spawning areas and eel grass beds should also be restricted.

A.3 Protect and conserve freshwater resources to increase and sustain water availability for instream and human uses.

Surface water flows and groundwater resources in most watersheds of Puget Sound have been compromised as a result of dams, other modifications, loss and change of vegetative cover, and water withdrawals for municipal, domestic, commercial, industrial, and agricultural water supplies. As a result, Puget Sound aquatic habitats are degraded, native species have experienced a reduction in abundance, viability, and diversity, and there is an uncertain future water supply for human consumption. Of the 19 primary watersheds in Puget Sound, 11 are known to have low flows that maybe limiting to fish survival and 17 are listed as having potential flow problems for salmon.

A comprehensive approach to protecting year-round, instream flows is needed for Puget Sound watersheds. Current approaches to managing streamflows, water use, land use, and stormwater management are fragmented and the many programs that address water quantity are not coordinated. A fundamental realignment in policy and regulation is needed at the state level to fix the system, one that ensures that individual programs can achieve their goals while protecting natural hydrologic processes and associated habitats within Puget Sound watersheds.

A.3.1 *Implement and update stream flow protection and enhancement programs.*

A.3.1.1 Ensure instream flows are protected by rule in each Puget Sound watershed and ensure instream flow rules are based on the most complete and current science pertaining to hydrologic processes

A.3.1.2 Develop coordinated watershed-based water management strategies, accounting for existing ecosystem goals, water management agreements, and projections of future instream flow demands.

A.3.1.3 Implement the existing watershed management plans, including water resource plans under the state Watershed Planning Act (HB2514), consistent with the Action Agenda and coordinated with other local protection and restoration efforts including salmon recovery.

A.3.2 *Reform state water laws to be more protective of instream flows and encourage conservation.*

A.3.2.1 Discourage waste of water resources and protect instream flows by addressing water laws that deter conservation and efficiency.

A.3.2.2 Use pricing structures to discourage inefficient and unnecessary use of municipal water, particularly in flow limited areas or low flow periods.

A.3.2.3 Evaluate and implement solutions to water use issues related to exempt wells.

A.3.2.4 Improve compliance with existing water laws.

A.3.3 *Expand opportunities to reuse, reclaim, and recycle water resources.*

A.3.3.1 Establish rules or standards which promote the use and reuse of recycled water.

A.3.3.2 Identify and address barriers to improve use and reuse of rainwater, graywater, stormwater, and wastewater.

A.3.3.3 Promoted use and treatment of water resources as close to the source as possible.

A.3 Near-term Actions

1. Complete setting flow rules in watersheds that currently do not have instream flow rules, with priority given to critical basins or those with known significant problems meeting instream or out-of-stream demands.
2. Begin to update instream flow rules to ensure they are based on current science. Focus this work initially in basins with flow rules that were set before 1986 and for water limited basins.
3. Develop and implement the comprehensive basin flow protection and enhancement programs called for in the Puget Sound Chinook Recovery Plan.
4. Implement the recommendations from approved water quantity plans under the Watershed Planning Act (HB 2514) consistent with the action agenda and coordinated with other local restoration and protection efforts.
5. Evaluate and implement solutions to exempt wells issues. Start by convening a stakeholder group to identify management options and make a recommendation to the Partnership and Department of Ecology.
6. Establish local water masters to increase water code compliance and enforcement. Provide funding for water masters to be local contact to water users, provide a local

compliance presence, protect the resource, reduce water use, and protect senior water rights, including instream flows.

7. Support municipal water systems implementation of Washington Department of Health's Water Use Efficiency Rule, including establishing water conservation goals, metering, and reporting from all municipal suppliers.
8. Develop a graywater reuse rule by December 31, 2010.

A.4 Support long-term protection and stewardship of working farms, forests, and aquatic lands to help maintain ecosystem functions, sustained quality of life, and improved viability of rural communities.

There are numerous voluntary incentive and stewardship programs available to rural property owners in Washington State. Landowner incentive programs include direct financial incentives (e.g., grants, subsidized loans, cost-shares, leases); indirect financial incentives (e.g., property or sales tax relief); technical assistance (e.g., referrals, education, training, design assistance programs); and recognition and certification of products and operations. Current use and effectiveness of voluntary incentive and stewardship programs vary; program management costs to government can be prohibitive, the most willing property owner participants may not be situated in highest priority areas, and these programs do not guarantee long term protection given the voluntary nature of participation.

A.4.1 *Use, coordinate, expand and promote financial incentives that allow working lands to stay viable*. These include, but are not limited to, purchase of development rights and conservation easements, transfer of development rights, and property tax incentives such as the Public Benefit Rating System.

A.4.2 *Use, coordinate, expand and promote existing landowner stewardship programs to help protect high value land and water resources.*

A.4.2.1 Focus stewardship programs on Action Agenda priorities and incorporate the watershed characterization results to refine geographic areas and problems to address.

A.4.2.2 Expand rural participation rates in voluntary site stewardship programs.

A.4.3 *Support economically viable farms and agriculture that are protective of watershed health and reduce land conversion.*

A.4.3.1 Expand programs that support the economic viability of farms in Puget Sound. This could include expanding cooperative marketing programs such as Puget Sound Fresh to bring locally-grown food to Puget Sound markets; amending GMA to authorize farm-related business activities to be conducted on designated agricultural lands; and supporting the State Farmland Legacy Program, and related activities and groups working to preserve Puget Sound farmland (e.g., Future of Agriculture Initiative and Skagitonians to Preserve Farmland)

A.4.3.2 Use incentive programs to encourage farmers and landowners with hobby farms in rural areas to engage in sustainable farming practices.

A.4.3.3 When conducting land use and conservation planning, including watershed assessments, engage the farming communities as important stakeholders.

A.4.4 *Promote economically viable working forests that are protective of watershed health and reduce forest conversion.*

A.4.4.1 Maintain publicly owned and industrial forest production while achieving ecosystem goals and consistent with the Action Agenda.

A.4.4.2 Support small working forests through non-regulatory incentive and technical assistance programs.

A.4.4.3 When conducting land use and conservation planning, including watershed assessments, engage large and small forest landowners as important stakeholders.

A.4.5 *Promote working aquatic lands that are protective of ecosystem health to provide abundant shellfish for commercial, subsistence, and recreational harvest.*

A.4.5.1 Implement best management practices for shellfish production.

A.4.5.2 Resolve conflicts between aquaculture and upland uses, particularly in South Sound. Continue the work of the Shellfish Advisory Committee.

A.4.5.3 Implement actions from Washington Department of Natural Resources Aquatic Habitat Conservation Plan (HCP) that protect critical habitat.

A.4 Near-term Actions

1. Purchase development rights or use conversation easements for working lands at immediate risk of conversion.
2. Coordinate with the SSB 5248 project by the Ruckelshaus Center that is working to resolve conflicts between agricultural activities and critical areas regulations.
3. Support the Conservation Commission's efforts to protect productive agricultural areas consistent with the Action Agenda priorities.
4. Continue to implement existing forest practice plans and regulations consistent with the Action Agenda including the state trust lands Habitat Conservation Plan, state forest practices rules, and Road Maintenance and Abandonment Plans as informed by the Forest and Fish Plan, and others.
5. Continue ongoing work to resolve conflicts between aquaculture and upland uses.
6. Implement components of the Washington Department of Natural Resource Aquatic Habitat Conservation Plan (HCP) that protect critical habitat.

A.5 Prevent and rapidly respond to the introduction of new invasive species.

Invasive, non-native species are brought to the Puget Sound through many ways such as imported fruits, plants, vegetables; ballast water discharge from ships; imported soil; and

commercial/recreational boat hulls. In Puget Sound, invasive species can alter native species and habitats in a variety of ways, including but not limited to competing with or feeding on native species, reducing the resiliency of ecosystems, changing local habitats, affecting flood patterns, and introducing diseases. Preventing the introduction of new invasive species is more effective than trying to reduce and remove them later.

A.5.1 *Implement key recommendations for the Puget Sound region that will prevent the introduction of new invasive species as identified in the Invasive Species Council "Invaders at the Gate" Strategic Plan.*

A.5.2 *Reduce potential risks from ballast water.*

A.5 Near-term Actions

1. Advocate for national or west coast regional ballast water discharge standards.
2. Implement the Department of Fish and Wildlife ballast water regulatory compliance monitoring program.
3. Develop a Puget Sound baseline and database of invasive species to guide control efforts.

Priority B: Restore Ecosystem Processes, Structures, and Functions

Current situation: In the course of building homes, businesses, roads, and infrastructure, the lands and waters of Puget Sound have been drastically modified. Levees, dams, and toxic deposits are obvious and site-specific impacts, but less obvious are the cumulative changes from human land use activities, such as bulkheads, docks, vegetation removal, and other actions. These activities have damaged the underlying processes that form beaches, keep rivers healthy, and support species. Historically, the actions that led to ecosystem degradation were intended to improve the quality of life for Puget Sound residents, but with closed shellfish beds, flooding, species decline and other impacts it is clear that ecosystem rebuilding efforts are needed.

Rationale for action: Protecting the habitats and functions that are left is critical, but will not be enough to restore the health of the ecosystem. The condition of Puget Sound must be improved from its present state. Restoration strategies once focused on what was called the "low hanging fruit," referring to specific projects on individual sites. These projects were ready to go, relatively easy to fund, construct, and report on, but they don't necessarily add up to a restored ecosystem. Scientists now emphasize the importance of restoration strategies that consider sequence, function, and scale. Will the restoration work be obliterated by something that is occurring upstream? Will it connect habitat patches into a functional network or just fix an isolated site? And will restoration work address urgent, large-scale problems such as estuary loss at the mouths of our rivers, or the nutrient loading that depletes oxygen in the waters of Hood Canal or South Sound? Finally, will restoration add up to improvement in the quality of life for people by reducing flooding, providing clean water, making shellfish edible, and producing fish and wildlife in the creeks, woodlands, beaches, and marshes throughout Puget Sound?

A restoration strategy for Puget Sound has three major elements. First is the need to undertake ecosystem rebuilding at a large scale in a variety of habitats throughout Puget Sound. In the same way that protection actions must set priorities for the remaining valuable habitat in Puget Sound, restoration work must focus on improving underlying functions of the ecosystem, and work efficiently on projects that are likely to have large-scale and long lasting returns. Second, restoration work has significant potential to help revitalize human communities, by removing toxic waste, rebuilding shorelines, and clearing the way to restore vibrant waterfronts. Finally, we must ensure that stewardship is implemented to break the cycle of degrade-restore-degrade that carries substantial economic costs and risk to human health and well-being.

The Action Agenda identifies a comprehensive restoration strategy for Puget Sound ecosystems that reflects these three primary objectives:

- *Implement and maintain priority ecosystem restoration projects for marine, marine nearshore, estuary, freshwater, riparian, and uplands.*
- *Revitalize waterfront communities while enhancing marine and freshwater shoreline environments.*
- *Support and implement stewardship incentive programs to increase private landowners ability to undertake restoration projects.*

Improving strategies and actions over time: The strategies and actions identified below will need to be refined over time. Two important areas of study identified in the Biennial Science Workplan will help refine protection strategies.

- The Action Agenda emphasizes the implementation of salmon recovery projects and identifies the restoration of Puget Sound estuaries as important to the ecosystem. By designing one or more of the large estuary restoration projects as experimental designs that can be measured, scientists and resource managers would be better poised to answer whether actions work as planned; the role of nearshore biology, physical processes, and functions in the broader ecosystem context; and what findings can inform similar projects around Puget Sound.
- The ability model future ecosystem impacts will also improve restoration strategies by identifying how restoration projects affect future conditions and how climate change affects restoration opportunities.

B.1 Implement and maintain priority ecosystem restoration projects for marine, marine nearshore, estuary, freshwater riparian and uplands.

The continued implementation of species recovery plans is a cornerstone of the restoration strategy for Puget Sound. Salmon recovery plans provide a broad suite of high priority restoration projects that have been scientifically reviewed and have substantial community support. These projects will result in expanded salmon habitat as well as broader ecosystem benefits such as improved water quality, scenic values, and improvements to other species. Restoration project types are highly varied and are tailored to local watershed conditions. Reconstruction of river delta habitat is a high priority in many river systems, and other project types include reforestation, removal of levees and shoreline armoring, and the removal of derelict fishing gear.

In the near-term, prioritize the implementation of restoration projects identified within existing species recovery plans, flood hazard management plans, road decommissioning plans, and other documented, well-vetted processes. Over the long-term, implement projects identified through the watershed assessment and harmonization of existing efforts identified in Priority A.1.

B.1 Near-term Actions

1. Implement restoration projects in the salmon recovery three-year work plans and the Estuary and Salmon Restoration Program of the Nearshore Partnership.
2. Complete large-scale restoration projects at the mouths of major river systems in Puget Sound where there is a high likelihood of recreating ecosystem function. These large-scale projects often require funding amounts not typically available through current grant programs. Examples of projects which already have substantial analysis and are in progress include:
    a. Finish restoration of 762 acres of Nisqually Estuary, by removing dikes to return the area to tidal influence.
    b. Fund the restoration of 400 acres of tidal marsh associated with the Smith Island Estuarine Restoration project in the Snohomish River Estuary.

c. Restore floodplain and river processes in the lower 2.6 miles of the Dungeness River.

3. Complete the Puget Sound Nearshore Partnership's General Investigation in a timely way to identify and refine nearshore restoration opportunities and move toward implementation.

B.2 Revitalize waterfront communities while enhancing marine and freshwater shoreline environments.

The transition from a resource-based economy has left some Puget Sound communities with degraded waterfronts from old industrial communities. Many of Puget Sound's urban centers are located on marine or freshwater shorelines, but few have been able to develop a built environment that complements their shoreline environment. Restoration and stewardship actions can remove obstacles to waterfront redevelopment and reduce new impacts from waterfront activities.

B.2.1 *Restore urban waterfront areas and communities in a manner which complements functioning shoreline ecosystems.*

B.2.1.1 Improve the coordination of waterfront restoration and clean up efforts.

B.2.1.2 Prioritize habitat restoration at clean up sites which are located proximate to intact ecosystems and where the probability of recreating ecosystem function is high.

B.2.2 *Expand and fund "green port" and clean marina programs to foster environmental stewardship for port and marina development and management.*

B.2 Near-term Actions

1. Fund a one year pilot program to develop a coordinated clean up and restoration plan for the Port Angeles Harbor and waterfront. Implement the plan upon completion.
2. Continue Bellingham Bay Pilot Program to clean up Bellingham Bay in a coordinated way.

B.3 Support and implement stewardship incentive programs to increase private landowners ability to undertake restoration projects.

Restoration actions vary in scale and take place on both public and private lands. There are currently numerous programs available in Washington State that can have positive outcomes for the environment with appropriate incentives, technical assistance, and participation. Examples include: direct financial incentives (grants, subsidized loans, cost-shares); indirect financial incentives (property tax relief); technical assistance (referrals, trainings, design assistance); and recognition/certification for products or operations.

B.3.1 *Develop, use, coordinate, expand and promote financial incentives, technical assistance, and outreach that encourage private landowners to undertake and maintain restoration projects.*

B.3.2 *Implement incentives for industrial and commercial landowners.*

B.3 Near-term Actions

1. Implement coordinated incentive and technical assistance programs for private landowners through the Conservation District, WSU Extension, and local governments.

Priority C: Reduce the Sources of Water Pollution

Current situation: Pollution of the rivers, creeks, bays, and open waters of Puget Sound comes from a variety of sources and travels along many pathways. Treated municipal sewage, spilled fuel, deposition of air pollution, legacy toxic pollutants, disease-bearing organisms from septic systems and harmful algal blooms, fertilizers, erosion, and the runoff from roads and parking lots all find their way into the waters of Puget Sound, where they harm fish and wildlife and create direct health risks to people. Polluted waters reduce ecosystem services – pollution results in shellfish closures, beach closures, impacts to recreation, loss of cultural resources, consumption warnings for fish, and low oxygen conditions that kill marine species. Increasing amounts of people, cars, and pavement mean more pollutants entering the waterways in higher concentrations at a faster rate.

Even as we clean up old contaminated sites, we allow new pollutants such as synthetic hormones to enter the water, many of which we know very little about or have few standards and testing methods to evaluate. Although progress has occurred at individual locations, other sites have worsened and grappling with the multiple problems of water quality at a regional level has been difficult. Past water quality programs have often emphasized expensive clean up programs without adequate emphasis on reducing new pollution. Many new and emerging pollutants are not well understood. Current water quality management practices in Puget Sound do not reflect an ecosystem approach, are not well coordinated, and do not effectively address the ubiquitous nature of pollutants in our freshwater and marine systems.

Rationale for action: Improving ground and surface water quality in Puget Sound will require a regional commitment to reducing the multiple sources of water pollution prior to their entry into the system. Implementing the clean up of contaminated sites still must occur, with priorities and appropriate sequencing, and the nutrients and disease-bearing organisms from human and animal waste must be prevented from degrading Puget Sound streams and saltwater.

The Action Agenda identifies a coordinated regional approach to reducing the sources of water pollution in Puget Sound that reflects six primary objectives:

- *Prevent pollutants from being introduced into Puget Sound ecosystems.*
- *Use a comprehensive and integrated approach to managing urban stormwater and rural surface water runoff.*
- *Manage and prioritize upgrades to wastewater treatment plants.*
- *Establish and maintain locally coordinated, effective on-site sewage system management to reduce pollutant loading to vulnerable surface waters.*
- *Prioritize and implement projects to clean up toxic contamination in water and upland areas.*
- *Continue monitoring programs which reduce human exposure to health hazards in marine, nearshore, and estuarine environments.*

Improving strategies and actions over time: The strategies and actions identified below will need to be refined over time. The Biennial Science Workplan identifies several areas of study to help refine protection strategies, including a watershed-scale study of stormwater management strategies on pollutant loads. The Action Agenda identifies stormwater runoff as a major way

pollutants are washed into fresh and marine waters. The watershed study will provide better understanding of what makes a particular stormwater discharge likely to cause harm, whether and how well retrofits reverse past harms, what combinations of management techniques are effective at minimizing harm, and what types of findings are most transferrable to other locations.

C.1 Prevent pollutants from being introduced into the Puget Sound ecosystem to decrease the loadings from toxics, nutrients, and pathogens.

The most reliable and cost effective way to manage for water quality health is to target the sources of contaminants, prior to their entry into Puget Sound's surface and groundwater system. Source control tactics include education, pollution prevention, innovative technologies, open space protection, low impact development, natural infrastructure, and engineered solutions.

C.1.1 *Implement a prioritized, comprehensive management program to reduce loadings of toxics into Puget Sound.*

- C.1.1.1 Conduct public outreach focused on reduction of pollutants and pharmaceuticals. As a first step, focus on pollutants identified in the Phases I and II of the regional toxic loading study that are priority threats to Puget Sound.
- C.1.1.2 Advocate national standards for new and emerging contaminants.
- C.1.1.3 Advocate strategies including chemical substitutions, cradle to grave management of products with hazardous materials and chemicals, and the reduction and reuse of materials where possible.
- C.1.1.4 Accelerate reduction of the loading of Persistent Bioaccumulative Toxic chemicals to Puget Sound.
- C.1.1.5 Continue to invest in technologies that reduce toxic pollutants.

C.1.2 *Implement targeted air emission and source control programs for land-based vehicles, marine vessels, and air transportation.*

- C.1.2.1 Expand oil spill prevention and interagency spill response programs. Consider and integrate as appropriate the recommendations of the Oil Spill Advisory Council into the overall pollution reduction strategy. Permanently maintain a year-round rescue tug at Neah Bay in support of enhanced emergency response capabilities.
- C.1.2.2 Promote efforts that reduce the number of vehicles on the road to reduce pollutants entering Puget Sound from roads and parking lots.
- C.1.2.3 Establish No Discharge Zones for all or parts of Puget Sound that are nutrient-limited, have high vessel use, and are significant for shellfish production. Establishing No Discharge Zones will require pump-out facilities with maintenance programs prior to implementation of the new rules.
- C.1.2.4 Implement existing air quality management plans to decrease risks to human health and reduce pollution, as part of the overall pollution reduction strategy.

C.1.3 *Develop and implement water quality clean up and management plans to reduce pollutant loads.* In the near-term, implement existing Water Quality Management Plans (TDML), Shellfish Protection District, and other water quality plans. In the long term, implement comprehensive watershed-based and regionally coordinated approaches to controlling and treating pollutants that is integrated with other strategies to protect and restore Puget Sound.

C.1 Near-term Actions

1. Conduct a focused outreach campaign to reduce pollutants identified in the Phase II of the toxic loading study that are priority threats to Puget Sound. This effort would likely be focused on pharmaceuticals and pollutants in stormwater runoff and include a pharmaceutical take-back program.
2. Implement Department of Ecology's Persistent Bioaccumulative Toxins (PBT) program to reduce and eventually eliminate the use of all chemicals on the PBT list.
3. Permanently fund a rescue tug at Neah Bay. Advocate for a permanent federal funding mechanism for an emergency response rescue tug at Neah Bay. If federal legislation is not passed, seek and support one year funding for FY 2010 and pursue a dedicated state funding option.
4. Obtain enhanced delegated authority from the Coast Guard to the Department of Ecology to inspect vessels, investigate incidents, and approve oil spill prevention plans for vessels and facilities.
5. Petition EPA to establish Puget Sound as a No Discharge Zone to eliminate bacteria, nutrients and pathogens from being discharged into Puget Sound. Prioritize areas of the Sound that are nutrient limited, have high vessel use, are significant for shellfish production and/or that are otherwise especially vulnerable for phase in of the No Discharge Zone.
6. Implement existing air management plans consistent with the Action Agenda.
7. Implement Shellfish Protection District plans, Marine Managed Area plans, and related projects to restore water quality at commercial and recreational shellfish areas that are degraded or threatened.
8. Implement immediate remediation actions to address Hood Canal's low dissolved oxygen concentrations through the Hood Canal Dissolved Oxygen Program.
9. Implement priority strategies and actions to address low dissolved oxygen in South Sound, targeted areas in the Whidbey Basin, and other vulnerable areas.

C.2 Use a comprehensive, integrated approach to managing urban stormwater and rural surface water runoff to reduce stormwater volumes and pollutant loadings.

Surface water and stormwater runoff in urban and rural areas are primary transporters of contaminants to surface and groundwater resources throughout the Puget Sound basin. Strategic elements of a comprehensive approach to reducing surface and stormwater volumes and pollutant loadings include managing surface water closer to its source and when possible, protecting and restoring the natural processes related to flow and filtration.

C.2.1 *Integrate efforts to manage stormwater discharges with work to protect land cover and reduce pollutants at the watershed scale and across Puget Sound.* This means

implementing the land use protection actions described in Priorities A and D, as well as loadings reduction in C.1.

C.2.1.1 Investigate, and if appropriate and feasible, establish watershed-scale stormwater permits through Section 208 of the Clean Water Act. Focus permits on the multitude of discharges that occur in logical geographic areas, rather than discharge-specific inputs or jurisdictional boundaries.

C.2.1.2 Establish priorities and resource needs for creating a coordinated water quality monitoring program under National Pollutant Discharge Elimination System (NPDES).

C.2.2 *Manage stormwater runoff in urban and urbanizing areas to reduce stormwater related impacts.*

C.2.2.1 Implement the municipal stormwater NPDES Phase I and II permits, so that water quality standards are met. Provide financial and technical assistance to permitted cities and counties.

C.2.2.2 Improve stormwater management in communities not currently covered by NPDES permits by providing financial and technical assistance to local governments to create local comprehensive stormwater control programs. Investigate expansion of NPDES permit coverage to include jurisdictions with municipal separated storm sewer systems (MS4) that currently fall under the thresholds used by the NPDES and 303(d) process. Initiate work in areas with documented stormwater-related problems and intact resources that are threatened by surface runoff.

C.2.2.3 Assist cities and counties in adopting low impact development (LID) stormwater codes for development and redevelopment. Provide standards for low impact development and establish criteria to determine where LID is feasible.

C.2.2.4 Advance the use of low impact development approaches to stormwater management. This includes, but is not limited to: a) resolve institutional barriers which limit use of low impact development for road construction and stormwater flow control projects; b) implement, assess, and promote successful examples of low impact development techniques; c) develop incentives for using low impact development; d) develop focused training for contractors and developers; and e) develop focused training for local government staff on areas best suited for low development impact and assist them in revising their regulations to allow low impact development.

C.2.2.5 Evaluate the technical and programmatic solutions for Combined Sewer Overflows (CSOs) in the context of improving water quality in fresh and marine water and preserving and recovering the health of Puget Sound.

C.2.2.6 Prioritize and implement stormwater retrofits in urban areas. In the near term, develop high level prioritization criteria for the selection of new projects. Over the long-term, link retrofit priorities to coordinated watershed clean up and prevention strategies.

C.2.3 *Manage surface water run-off in rural areas and on working resource lands to reduce pollutant loadings.*

C.2.3.1 Implement existing road maintenance and abandonment plans on public and privately held working forests.

C.2.3.2 Fund and implement voluntary incentive, stewardship and technical assistance programs for rural unincorporated landowners, hobby farms, working farms, and nurseries.

C.2 Near-term Actions

1. Establish a regional coordinated monitoring program for stormwater, working with the Monitoring Consortium of the Stormwater Work Group (see E.3).
2. Provide financial and technical assistance to cities and counties to implement NPDES Phase I and II permits.
3. Assist cities and counties in adopting low impact development stormwater codes for development and redevelopment.
4. Develop and implement low impact development incentives. Work with regional experts to develop and implement incentives and remove barriers to the use of low impact stormwater management techniques on development projects.
5. Convene a focus group to evaluate the technical and programmatic solutions for CSOs in the context of improving water quality in fresh and marine water. The integration of CSO solutions into the larger range of solutions to stormwater and other water quality problems may improve the cost effectiveness of both programs in urban areas, notably Seattle and King County. This will require flexibility in implementation, timing, and scope of municipal wastewater NPDES program as applied to CSOs.
6. Develop high-level criteria that can be applied in 2009 to determine the highest priority areas around the Sound for stormwater retrofits. Implement projects based upon these criteria to bring areas into compliance with current stormwater regulations, including low impact stormwater management techniques. Monitor effectiveness of the techniques.
7. Implement road maintenance and abandonment programs for federal and state owned lands (including trustlands) as well as private timber lands.
8. Implement private property stewardship, incentive, and technical assistance programs (e.g. Conservation Districts, WSU Extension, local government programs) that focus on reducing sources of water pollution, particularly in priority areas.

C.3 Prioritize and complete upgrades to wastewater treatment facilities to reduce pollutant loading.

Wastewater is a source of a broad spectrum of pollutants, including nutrients and pathogens, to Puget Sound. Wastewater treatment removes or transforms many but not all contaminants, and treated municipal sewage contains a mixture of personal care products, caffeine, endocrine-mimicking chemicals and other pharmaceuticals. Land based wastewater treatment plants discharge an estimated 400 million gallons per day of treated water into Puget Sound. Combined sewer outflows sometimes discharge mixed stormwater and untreated wastewater to Puget Sound during wet weather when conveyance or plant capacities are exceeded.

Technical approaches to wastewater treatment vary depending upon the type of waste and age of the facility. Municipal, onsite and combined sewer overflow treatment facilities primarily focus on removing pathogens, biochemical oxygen demand, and suspended solids with a primary objective of protecting human health. Industrial facilities typically have systems customized to their waste products and sometimes discharge to municipal systems following pre-treatment. Many wastewater treatment plants are outdated and lack advanced treatment technology.

C.3.1 *Implement priority upgrades of wastewater facilities in urban and urbanizing areas to increase effectiveness of treatment, especially in nutrient sensitive areas of Puget Sound.*

C.3.1.1 Investigate requiring nitrogen removal at treatment plants in targeted areas including those with nutrient loading issues and vulnerable waters.

C.3.2 *Improve local government project readiness by providing technical assistance to local governments with wastewater treatment plants scheduled to be upgraded in the next five to ten years or in locations where significant nutrient loading originates*. Priority will be given to projects that reduce pollutant loadings (nutrients, toxics, and pathogens) and that develop alternative water supplies by reclaiming and reusing municipal wastewater.

C.3.3 *Require federal facilities to reduce nutrient and pathogen loading consistent with the Action Agenda priorities.*

C.3.4 *Continue to investigate and invest in technologies that reduce nutrients, pathogens and emerging chemicals*.

C.3 Near-term Actions

1. Ensure that AKART (All Known and Reasonable Technology) or better standards are met in nutrient sensitive areas such as Hood Canal, South Sound, and the Whidbey Basin.
2. Provide funding and technical assistance to local governments, particularly in nutrient sensitive areas, to initiate projects to upgrade wastewater treatment facilities.
3. Support federal facilities in reducing nutrient and pathogens, particularly in already impaired areas.

C.4 Establish and maintain locally coordinated, effective on-site sewage system management to reduce pollutant loading to vulnerable surface waters.

Rural communities in Puget Sound lack municipal wastewater treatment facilities and residents typically use on-site wastewater treatment techniques for sewage treatment. There are an estimated 500,000 on-site septic systems in the Puget Sound basin, many located adjacent to vulnerable water bodies. Failing septic systems threaten water quality and public health. Well designed, sited, and constructed on-site septic systems are effective in removing pathogens and indicator bacteria from wastewater, though they are less effective in removing nitrogen and other nutrients.

C.4.1 *Establish, in each county, a coordinated way to systematically identify and replace failing or poorly functioning septic and on-site treatment systems, as well as address long term maintenance needs for these systems.*

- C.4.1.1 Implement on site septic plans in Marine Managed Areas, per 3SHB 1458 (On-site Sewage Disposal System 2006).
- C.4.1.2 Investigate the contribution of on-site septic systems to pollutant loadings in freshwater environments.
- C.4.1.3 Establish septic utilities to ensure that existing septic systems and large onsite septic systems are well maintained, and increase capacity of local health jurisdictions to implement on-site septic management plans. This effort should focus first on South Sound, Hood Canal, and other areas prone to increasing levels of hypoxia and in shellfish threatened areas. Encourage community systems in areas of high residential density and promote nitrogen-reducing technology where feasible.

C.4.2 *Review and, as appropriate, approve new septic system treatment technologies for use in Washington State.*

C.4.3 *Provide innovative cost-share and loan programs for homeowners.*

C.4 Near-term Actions

1. Develop and implement septic system management plans in each Puget Sound county.
2. Revise the current septic system rule no later than December 2010 so that standards are established to address new septic system technologies. Review technologies and address operation and maintenance issues.
3. Enhance and target septic loan programs to ensure that programs are targeted to areas with demonstrated loading issues and vulnerable waters. Leverage public and private funds to increase the scope of loan programs.

C.5 Prioritize and continue to implement toxic clean up programs for contaminated waterways and sediments.

Remediation and clean up of contaminated waterways and sediments, which exceed state and federal regulatory thresholds, typically involves groundwater, sediment in deltas, estuaries and depositional zones, and freshwater lakes. Remediation is costly and requires extensive coordination among many stakeholders. Most clean up actions target sediments containing a number of legacy contaminants such as DDT and PCBs that impact water quality and can bioaccumulate in aquatic organisms. There are 115 contaminated marine sediment sites in Puget Sound, many of which are currently undergoing active clean up. The water quality management strategy for Puget Sound reflects a continued commitment to completing remediation projects in conjunction with expanded source control programs to prevent future contaminants from entering the system.

C.5.1 *Prioritize and sequence Puget Sound clean up and remediation projects to reduce the loadings to the system, as informed by the Toxics Loading Study, Urban Bay, and other studies.*

C.5.2 *Accelerate priority clean up projects.* In the near term, continue to implement current high priority remediation and clean up projects. In the long term, implement those projects which meet prioritization and sequencing criteria.

C.5 Near-term Actions

1. Continue to implement ongoing high priority remediation and clean up projects.
2. Refine the Washington State Department of Ecology near-term prioritization criteria for site clean ups to be consistent with the Action Agenda and incorporate criteria into toxic clean up grant programs. Criteria should include, but not be limited to, vulnerability of receiving waters, contribution of the site to overall water pollution and public health, and potential for recontamination.

C.6 Continue to monitor swimming beaches as well as conduct shellfish and fish advisory programs to reduce human exposure to health hazards.

People and other species encounter a variety of air, soil, and water-based pollutants throughout Puget Sound. If certain thresholds and other conditions are met, individuals may become ill, infected, or diseased. The consumption of fish, shellfish, sea plants, and other marine biota represent the most significant exposure risk to human health from toxic contaminants, pathogens, and biotoxins related to Puget Sound. Washington State Department of Heath and Department of Ecology monitoring programs assist in identifying sources of pollutants, conduct water quality monitoring, assess the safety of beaches for recreational shellfish harvesting, and certify the safety of commercial shellfish operations. Monitoring information assists with making decisions about swimming beach closures, shellfish beach closures and fish advisories.

C.6.1 *Monitor harmful algae blooms and other conditions that can be harmful to human health.*

C.6.2 *Continue to inform the public about conditions and closures including fish advisories, swimming beach, and shellfish beach closures.*

C.6 Near-term Actions

1. Fund the swimming beach monitoring program.
2. Fund the shellfish and fish advisory monitoring programs.

Priority D: Work effectively and efficiently together as a coordinated system to ensure that activities and funding are focused on the most urgent and important problems facing the region.

Current Situation: The system we use to manage Puget Sound was not designed to protect the ecosystem as a whole. Our inventory of what is currently being done for Puget Sound indicates that immense numbers of people and agencies are working hard all across the region. Despite decades of work to "save" Puget Sound, the region's capacity to work at an ecosystem scale is still low.

- Programs to protect and restore Puget Sound are fragmented, and until the Partnership was created, no single entity had the mission to protect and restore Puget Sound. After reviewing the current "tool box" for Puget Sound, we find that the region currently has separate programs for treating sewage and inspecting outfalls, regulating stormwater, measuring water quality, planning water supply, setting flows, directing land use, protecting habitat, recovering salmon, evaluating shoreline development, cleaning toxic waste, ensuring that shellfish is safe to consume, establishing parks, managing timber harvest, promoting tourism, and a host of other activities that impact Puget Sound. Within each of these programs are layers of standards, regulation, enforcement, technical assistance, and outreach activities. These programs are managed by separated agencies, boards and commissions as well as elected officials. Each of these tools to manage environmental protection and restoration were developed at different times for different purposes and they generally focus on individual problems.
- Many of the land use and permit decisions made in Puget Sound are narrowly focused and are detached from their full repercussions to land, water, species, and human health and well-being. The decision-making process is frequently adversarial—for example, state agencies and county governments are sued from both sides of an issue, sapping resources and eliminating the incentive to take bold action in addressing habitat loss and pollution problems in an integrated way. Additionally, scientific and technical information is often an afterthought rather than a consideration in the early stages of decision making.
- Consistent approaches to restoring and sustaining Puget Sound have not been integrated across various interests or jurisdictional boundaries for solving problems effectively. The transfer of knowledge and resources to implement actions is uneven, and implementation has not always been efficient, properly sequenced, or monitored and adapted.

Rationale for action: Fundamental changes are needed in how we go about the business of protecting and rebuilding the environmental infrastructure of Puget Sound. We need to be able to prioritize actions and locations for investment, consistently implement plans and programs, and learn from our efforts and adjust actions when needed. Sufficient resources are needed to carry out this work and regulatory and legal barriers need to be addressed to allow implementation to proceed. Our level of investment into the health of the Puget Sound ecosystem is low relative to the benefits we derive from it.

The Action Agenda identifies a comprehensive strategy to ensure we work together as a coordinated system for the Puget Sound region, reflecting five primary objectives:

- *Conduct planning, implementation and decision-making in an integrated way and from an ecosystem perspective.*
- *Support, develop, and integrate climate change programs and adaptation strategies to improve implementation effectiveness and regional and local readiness for anticipated changes.*
- *Build and sustain long-term capacity of partners to effectively and efficiently implement the Action Agenda*
- *Reform the environmental regulatory system to protect habitat at an ecosystem scale.*
- *Improve compliance with rules and regulations to increase the likelihood of achieving ecosystem outcomes.*

The Action Agenda funding strategy is explained in more detail in Section E and attached appendix.

D.1 Conduct planning, implementation and decision-making in an integrated way and from an ecosystem perspective consistent with the Action Agenda.

The Puget Sound Partnership will need to remove barriers and break the pattern of fragmentation that prevents people and institutions from working across boundaries and disciplines to plan and implement the Action Agenda in a coordinated way.

D.1.1 *Develop methods for and conduct future planning for biodiversity and species recovery, water quality, water supply and reuse, land use in an integrated way.* This includes coordinating planning efforts among and between federal, state, local and tribal governments.

D.1.2 *Integrate and coordinate implementation of existing Sound-wide and local plans and programs to improve efficiency and effectiveness in addressing Action Agenda priorities.* This will include, but is not limited to, the statewide Biodiversity Report, species recovery plans, nearshore needs assessment; local watershed-based salmon recovery plans, water quality plans, GMA comprehensive plans and programs, Shoreline Master Programs, marine resource plans; harvest management plans for salmonids and other fisheries, shellfish, and salmon hatchery plans; and capital facilities plans for state and local governments, ports, utilities and special purpose districts.

The coordination and integration should be consistent with the Action Agenda. Over the long-term, integrate this work with the results from the watershed assessments (see Priority A). In the near-term while the watershed assessments are being prepared, continue and expand high level coordination to improve consistency and efficiency with the Action Agenda and action area priorities.

D.1.3 *Implement existing species recovery and biodiversity plans in a coordinated way while a more integrated planning approach is created*. Coordinate implementation of

ecosystem protection, freshwater flows, and water quality as identified in Priorities A, B, and C.

D.1.4 *Set future fishing and hunting harvest rates for species based on ecosystem needs, in addition to tribal treaty right, economic, and quality of life concerns.*

D.1.5 *Set fishing and hunting harvest rates and communicate results in way that is transparent with readily available information*.

D.1.6 *Manage hatcheries and other artificial propagation methods in a way that is consistent with the Action Agenda.*

D.1.7 *Consider and support recommendations from the U.S. Commission on Ocean Policy's final report, "An Ocean Blueprint for the 21st Century," as they relate to strategies and actions that will support the recovery and long-term health of Puget Sound.*

D.1 Near-term Actions

1. Coordinate implementation of existing plans and programs that support the Action Agenda, and realign or discontinue plans and programs that conflict with the strategies and actions set forth in the Action Agenda. Develop regional guidance for this coordination, including ways to minimize work for time-limited local staff.
2. Develop and implement the Steelhead Recovery Plan, building on the Chinook Recovery Plan and integrating the Action Agenda priorities.
3. Use and augment existing species plans to create actionable workplans for imperiled species without existing or specified plans.
4. Continue the integration of habitat, harvest, and hatchery efforts in the salmon recovery plans and watershed three-year work plans.
5. Make the southern resident killer whale plan actionable with assignments and implementation timelines and implement the plan.
6. Implement the 2008 revision to the Pacific Salmon Treaty.
7. Implement the priority recommendations of the Hatchery Scientific Review Group to update state hatcheries to protect wild salmonid stocks.

D.2 Support, develop, and integrate climate change programs and adaptation strategies in the Action Agenda to improve implementation effectiveness and regional and local readiness for anticipated changes.

D.2.1 *Integrate the recommendations of the Land Use and Climate Change Advisory Committee with priorities, steps, and initiatives consistent with the Action Agenda.*

D.2.2 *Integrate the recommendations of the West Coast Governor's Agreement and Western Climate Initiative with other State and local climate change initiatives*.

D.2.3 *Prepare local climate adaptation strategies based on the watershed assessment work outlined in Priority A*. This should include, but not be limited to, a vulnerability analysis of public infrastructure and utilities, sea level rise analysis, and development of innovative water storage projects.

D.2 Near-term Actions

1. Once the recommendations of the Climate Change Study Groups are available, integrate and coordinate them with the Action Agenda. Define and implement projects or policies that support both Puget Sound recovery and climate change priorities.

D.3 Build and sustain long-term capacity of partners to effectively and efficiently implement the Action Agenda.

The Legislature directed the Leadership Council to work closely with existing organizations and all levels of government to ensure that the Action Agenda and its implementation are scientifically sound, efficient, and achieve necessary results to accomplish recovery of Puget Sound to health by 2020. In addition, the Legislature directed that the Leadership Council shall support, engage, and foster collaboration among watershed groups to assist in the recovery of Puget Sound (RCW 90.71.230). The Partnership was authorized to provide assistance to watershed groups in those action areas that are developing and implementing programs included within the Action Agenda, and to improve coordination among the groups to improve and accelerate the implementation of the Action Agenda (RCW 90.71.260).

Much of the implementation of the Action Agenda will be accomplished by cities, counties, tribes, and collaborative groups that have formed and are working across interests and sectors in each action area of Puget Sound. Today, those agencies and local collaborative groups lack the organizational infrastructure and staffing capacity to engage in sustained local and regional efforts to assist in the recovery of Puget Sound. The actions chosen for this strategy are designed to respond to the Legislature's direction, as well as the needs of the local communities to create or strengthen local organizations to enable them to engage in a coordinated, collaborative effort to recover Puget Sound.

D.3.1 *Increase and improve the ability of collaborative groups and processes to implement Action Agenda priorities, address conflicts and balance competing needs in a manner consistent with Puget Sound recovery.*

D.3.1.1 Continue and enhance the Puget Sound Partnership's role and ability to foster collaboration and convene key stakeholders to resolve conflicts, coordinate actions, and advocate for Action Agenda implementation. This includes continuing to work with the Leadership Council, Ecosystem Coordination Board, and Science Panel, as well as elected officials, community leaders, and tribes on implementation and refining the Action Agenda.

D.3.1.2 Clarify and align the roles and responsibilities of the numerous collaborative planning and implementation groups that were established for salmon recovery, water supply, marine resources, and other issues. This includes clarifying the role of watershed stewards, liaisons and outreach staff.

D.3.1.3 Provide sustained funding for local staff for the collaborative planning and implementation processes to facilitate implementation of the Action Agenda.

D.3.1.4 Provide adequate funding support for local salmon recovery and other collaborative processes (such as Regional Fishery Enhancement Groups, HB 2514 watershed planning groups and others), to implement their existing work plans until the roles and responsibilities are clarified.

D.3.1.5 Improve state and federal agency coordination with local collaborative planning efforts to avoid duplication of effort and improve efficiency.

D.3.1.6 Identify where technical expertise is needed to assist in the creation of strategies and actions to protect and restore ecosystem processes. Create mechanisms to share or loan staff to local groups or agencies. (Examples include loaned staff or executive programs, issue-specific think tanks or Centers for Excellence).

D.3.2 *Increase the ability of cities, counties, and special districts to provide increased focus on implementation of Action Agenda priorities and improve collaboration.*

D.3.3 *Engage state agencies to increase focus on implementation of Action Agenda priorities and improve collaboration as described in Priority E.2.*

D.3.4 *Provide capacity for Puget Sound tribes to enable implementation of Action Agenda priorities.*

D.3.5 *Engage the federal government to increase implementation of the Action Agenda.*

D.3.5.1 The Puget Sound Federal Caucus, working with the Partnership, should develop a common federal workplan to identify and implement priority actions of the Action Agenda.

D.3.5.2 Increase internal federal coordination and communication to more effectively and efficiently fund and implement Action Agenda priorities. Examples include: a) coordinating restoration and protection grants and other funding, and b) improve government-to-government consultation with Puget Sound tribes on federal agency actions.

D.3.5.3 Coordinate federal actions and research with existing collaborative planning, implementation, resource management, recovery, and science efforts. Examples include, but are not limited to: a) USFWS collaboration with the Nisqually watershed salmon recovery group to restore the Nisqually estuary; b) USFWS and NOAA Fisheries should implement species recovery plans in collaboration with state, regional and local

recovery planning groups; c) EPA should update federal/tribal NPDES permits to better monitor and control discharges and fund technical support to implemented NPDES permit programs; and d) EPA should coordinate directly with the Partnership and local implementers on growth and protection solutions.

D.3.5.4 Model stewardship behavior. Examples include, but are not limited to: a) participate in the Federal Green Challenge and other comparable programs to reduce waste and energy and conserve water; b) minimize homeland security related impacts from operations, maintenance and readiness training activities on ecosystem processes, structures and functions, and on marine mammals; c) maintain, repair, and decommission roads and fish passage barriers on United State Forest Service and other federal lands; and d) identify and implement improvements in federal facility wastewater and stormwater treatment processes that specifically target nutrients and other pollutants of particular concern for Puget Sound.

D.3.5.5 Provide scientific support and data management on Action Agenda priorities in coordination and cooperation with the Partnership and other implementers.

D.3.5.6 Provide adequate federal funding for the Action Agenda. Work with the Congressional delegation to increase funding for implementation of the Action Agenda. Improve coordination of federal agencies and codify ongoing federal authorization for funding (see funding section E.2). Align federal agency budgets for base programs with priorities of the Action Agenda as described in Priorities A, B, and C.

.

D.3.6 *Expand landowner participation in the voluntary incentive programs described in Priorities A, B, and C, to improve the ability of private landowners to protect and restore ecosystem processes.*

D.3.7 *Grow and use the Foundation for Puget Sound (non-profit entity) to increase education and outreach efforts.*

D.3.8 *Work cooperatively with Canada on management and scientific investigations to increase collaborative problem solving and information sharing.*

D.3.8.1 Continue collaborative work on trans-boundary issues and projects.

D.3.8.2 Continue to co-host the Puget Sound Georgia Basin Research conference.

D.3 Near-term Actions

1. Integrate the work of the Puget Sound Nearshore Partnership (PSNRP), including the Estuary and Salmon Restoration Program, into the Puget Sound Partnership to improve efficiency, coordination and to avoid overlap and duplication of efforts.

2. Fund salmon recovery and other collaborative groups such as Regional Fisheries Enhancement Groups and 2514 watershed planning groups in the near-term to continue existing work.
3. Fund tribes to participate in the refinement and implementation of the Action Agenda, including salmon recovery plans.
4. Establish a Federal Puget Sound Office. Work with the Congressional delegation to pass federal legislation authorizing Puget Sound under the Great Waters Program, including establishing a federal Puget Sound Office to improve coordination of federal agencies and codify ongoing federal authorization for funding.
5. Consider the recommendations of the Partnership's Local Integration Task Force and implement appropriate follow up actions.
6. Support appropriations to federal agencies to implement specific priorities in the Action Agenda.
7. Continue and expand outreach to, and collaboration with, private and nongovernmental interests including the Puget Sound business caucus, environmental caucus, agricultural groups, shellfish growers, and private landowners in the implementation of the Action Agenda.

Note that the Partnership work is summarized in Action Agenda Question 4.

D.4 Reform the environmental regulatory system to protect habitat at an ecosystem scale.

The regulatory system that exists in Washington is fragmented. Regulations typically focus on specific issues, activities or sites, rather than the ecosystem as a whole. Regulatory authority has been vested in many different agencies at the federal, state, and local level which can lead to multiple layers of regulation and reviews, conflicting requirements, and an incoherent approach to protecting the entire spectrum of ecosystem process, structures, and functions. This fragmented system prevents us from adequately considering cumulative impacts on the ecosystem. Reforming the environmental regulatory system will provide more certainty that important ecosystem-forming processes remain intact, and should result in a more efficient, predictable permitting system for consumers.

D.4.1 *Align federal, state, and local agency regulatory programs in Puget Sound to improve coordination, efficiency, and effectiveness of implementation.* This means identifying overlapping authority and conflicts, and amending, realigning, or eliminating programs, laws, and regulations that are not resulting in desired outcomes.

D.4.1.1 Identify and implement actions to resolve overlapping and conflicting authorities by amending, realigning, or eliminating programs, laws, and regulations.

D.4.1.2 Identify and resolve overlaps and conflicts between environmental requirements and permit conditions. Work with local, state and federal partner agencies to resolve discrepancies in permit conditions and identify ways to resolve environmental permit overlaps and conflicts.

D.4.1.3 Investigate opportunities to develop and use new Clean Water Act general permits to promote development in urban areas by improving efficiency for review of development projects. This would include a) regional general permits development projects with urban growth areas and b) programmatic general permits for projects that often require mitigation.

D.4.1.4 Streamline and coordinate the environmental permit review process to improve the consistency and efficiency of decisions. Fund cities and counties to perform non-project, programmatic analyses under the State Environmental Policy Act (SEPA) on lands included in UGA expansions. Exempt project actions performed in areas where programmatic SEPA review has already been conducted from complying with SEPA, except in limited circumstances.

D.4.1.5 Create and implement a streamlined permitting process for habitat restoration projects.

D.4.1.6 Reconcile levee maintenance standards to address the ecosystem needs of providing habitat and protecting public safety. Collaborate with the Corps and other key stakeholders to develop modifications to standards or their application through the existing variance mechanism.

D.4.2 *Increase the success rate of mitigation projects to achieve, at a minimum, no-net loss of ecosystem function on a watershed scale.* Nationwide, studies have consistently found that wetland mitigation fails roughly 50% of the time due to factors like poor site selection and lack of compliance. Furthermore, there is dissatisfaction with the permit process itself, leading at times to complex and costly delays. Improving mitigation success rates can be a helpful way to achieve restoration goals. The Partnership participated in the Mitigation That Works Forum, and endorses the groups' recommendations to identify practical actions that can be taken to make all aspects of environmental mitigation work better.

D.4.2.1 Reinforce the importance of avoiding and minimizing impacts to resources, particularly those with high ecological value and that are difficult to replace. Develop and implement updated avoidance and minimization guidance consistent with the ecosystem protection decision-making framework described in A.1.2.

D.4.2.2 Establish and implement a watershed-based approach to mitigation. This includes, but is not limited to: a) clarifying policy priorities and expectations for using the watershed characterizations described in A.1.3; b) linking mitigation planning to existing restoration processes including salmon recovery and other watershed plans to align funding priorities for mitigation projects with locally prioritized acquisition and conservation efforts; c) maintaining a state-wide wetlands inventory; and d) developing guidance on how to make site-scale decisions about off-site mitigation.

D.4.2.3 Support the development and piloting of market-based techniques and other innovative compensatory mitigation tools as alternatives to traditional mitigation approaches. This includes, but is not limited to: a) improving the wetland banking system through training and rule adoption; b) developing guidance on crediting for multi-resource conservation

banks; c) developing a pilot in-lieu-fee mitigation program and expanding it if successful; and d) developing clear guidance for advanced mitigation.

D.4.2.4 Improve effectiveness monitoring programs for mitigation sites. This includes, but is not limited to, standardizing monitoring protocols for measuring effectiveness and supporting local governments with training and assistance.

D.4 Near-term Actions

1. Conduct an institutional analysis of local, state and federal agencies with regulatory authority over upland terrestrial and aquatic habitats, species protection, and water quality. Provide recommendations to implement actions to resolve overlapping and conflicting authorities by amending, realigning, or eliminating programs, laws, and regulations consistent with the Puget Sound ecosystem decision-making framework.
2. Evaluate the effectiveness of the Clark County pilot of the Office of Regulatory Assistance's iPermit program. Adjust the program as needed. Identify a Puget Sound county and one or more cities in the same watershed in which to further pilot the iPermit program. This will involve standardizing best management practices related to shoreline development and customizing the program to meet local requirements. If successful, implement in one additional county and associated cities by the end of the biennium. The watershed selected for this pilot should be prioritized for watershed characterization work referenced in A.1.3 and for initial implementation of the in-lieu-fee program referenced in D.4.2.3.
3. Convene a process for making recommendations to the Partnership about streamlining permitting processes for habitat restoration projects. Include the following regulatory programs in the review process: building construction permits, clearing and grading regulations, Hydraulic Permit Approval (HPA) permits, Ecology's Clean Water Act, Section 402 and Section 401 permits, and Army Corps of Engineers' Clean Water Act Section 404 permits.
4. Convene a process with Corps, NMFS, USFWS, jurisdictions responsible for levee maintenance, and stakeholders to identify and describe conflicts between levee maintenance standards and healthy habitat. This meeting should result in recommendations to the Corps to develop/review potential modifications to levee maintenance standards or the use of the existing variance mechanism.
5. Support funding and legislation to allow state loans to local governments to conduct environmental reviews under SEPA at the planning or programmatic level
6. Develop, fund, and implement a pilot in-lieu-fee mitigation program in one to three Puget Sound watersheds. The program should be implemented at the watershed scale and involve the restoration of off-site, priority habitat areas as mitigation for multiple development impacts. Participation in the program should be optional and should not compete with existing mitigation banks or other in-lieu-fee programs. It should include provisions for long-term maintenance and monitoring. The program would be pre-capitalized with publicly-funded restoration projects.

D.5 Improve compliance with rules and regulations to increase the likelihood of achieving ecosystem outcomes.

Business, environmental groups, and most all other stakeholders agree that existing environmental regulations should be fully implemented. Full and equal enforcement of existing regulations throughout the region creates a level playing field for developers and predictable results for other stakeholders. In-the-field compliance inspectors play a valuable role in identifying problems, educating land-owners and contractors about compliance issues, assisting with resolutions of compliance problems before environmental damage occurs, and bringing enforcement actions when necessary to achieve compliance

In order to be more strategic over time, the performance of our regulatory systems will need to be assessed by monitoring and reporting on (a) the effectiveness of the regulations themselves in achieving the protection sought; (b) the effectiveness of the institutions in implementing the regulations through the permitting process; and (c) the rate of compliance with the permits issued both during the permitted activity, and after the property has been sold to third parties that were not part of the permitting process.

D.5.1 *Integrate environmental regulation and permit field compliance across federal, state, and local jurisdictions to improve efficiency of implementation and effectiveness of achieving environmental outcomes.*

D.5.1.1 An integrated field compliance monitoring program should include land use, shoreline, water quality, water use, hazardous materials, and other environmental permit related activities. Ultimately, field inspectors should be located in each watershed and be tasked with assisting landowners, builders, and contractors with understanding regulatory requirements, strategizing optimal environmental protection approaches, and inspection to ensure compliance with a full spectrum of environmental protection regulations.

D.5.2 *Provide financial, technical, and regulatory mechanisms to improve environmental permit compliance inspection and enforcement in a coordinated way.*

D.5.2.1 Increase inspections by cities and counties throughout Puget Sound, when consistent with the integrated compliance program, to ensure environmental regulations are being implemented and enforced.

D.5.2.2 Increase inspections by state agencies throughout Puget Sound, when consistent with the integrated compliance program, to ensure environmental regulations are being implemented and enforced.

D.5.2.3 Where needed, strengthen enforcement authority of existing regulations (e.g., Hydraulic Permit Approval program).

.

D.5.3 *Improve customer service when working with private landowners and businesses to improve effectiveness and compliance.* Public agencies need to provide excellent and transparent customer service to landowners, home owners and businesses so that people understand why certain requirements are in place. This need ranges from elected officials to the permit counter and inspectors.

D.5.3.1 Train state and local government staff with regulatory responsibilities in customer service.

D.5.4 *Provide training to architects, engineers, design professionals, land developers and contractors working in marine and freshwater nearshore areas on desired environmental outcomes, best management practices and rules.*

D.5.4.1 Support the development of new programs or expand existing programs of the Association of General Contractors, Master Builders Association and other groups or professional associations in training their members to achieve the desired environmental outcomes for Puget Sound.

D.5 Near-term Actions

1. Convene a process with federal, state and local jurisdictions to develop an ideal compliance assistance and inspection program that would leverage existing fragmented inspection programs into an integrated program without co-opting the regulatory and enforcement authority of any jurisdiction. Such a program may involve compliance assistance agents who identify problems in the field, provide compliance assistance, and if necessary, report violations to compliance inspectors at the agencies with jurisdiction for enforcement action.
2. Provide additional state compliance inspectors to ensure that business producing hazardous waste are complying with regulations.
3. Support state water quality fee revisions and short term funding to maintain existing and if possible enhance additional compliance staff at Department of Ecology.
4. Provide additional staff at the Department of Ecology to conduct field visits to improve compliance with shoreline and aquatic regulations.
5. Develop and implement a training program for designers and contractors who work in nearshore areas. Work with Association of General Contractors, Master Builders, and other professional organizations in the Puget Sound region to develop and implement training programs to educate designers and contractors who regularly work adjacent to or over waters of the state. Consider partnerships with existing university and community college extension programs.

Priority E: Build and implement the management system to support the implementation and continual improvement of the Action Agenda.

Current Situation: The Partnership's charge is to analyze, study, and solve problems at the ecosystem level. Experts agree that in order to effectively implement systematic solutions to ecosystem problems, efficient and effective implementation is essential. Such a system for implementation would include several key elements:

- A **performance management system** that includes adaptive management, coordinated monitoring, accountability for action, and coordinated data management.
- **Sufficient, stable funding** focused on priority actions that result in increased efficiency and effectiveness.
- A focused **scientific program** with priorities for research, appropriate measures to improve understanding of the ecosystem and the effectiveness of our actions, and clear pathways for informing decision making.
- Sustained, coordinated efforts for **communication, outreach, and education** to increase public awareness and encourage individual stewardship.

A management system inclusive of each of these elements will allow the Partnership to develop more strategic sets of actions. It will support robust adaptive management that will allow us to learn to work as a system as we grow and work to protect and restore Puget Sound.

Rationale for action: To be effective, the Puget Sound Partnership must be able to present a compelling story about the state of Puget Sound, demonstrate progress made toward recovery goals, responsibly steward public funds, and ensure that all actions are supported by strong science. Demonstrating progress depends upon timely access to accurate information and data relating to all dimensions of the Action Agenda, from indicators and funding to locations of activities or of experts active in the field. The Partnership is organizing the multiple components of the Action Agenda into a unified management framework and pursuing a coherent data management strategy that supports the management system. The Partnership will rely heavily upon implementers throughout the region to align their work and reporting with the systems and standards established by the Partnership.

The Action Agenda identifies a comprehensive strategy for implementation that reflecting four primary objectives:

- *Build and use a performance management system to improve accountability for ecosystem outcomes, on-the-ground results, and implementation of actions.*
- *Provide sufficient, stable funding and ensure funding is focused on priority actions to increase efficiency and effectiveness.*
- *Continually improve the scientific basis for management actions in the Puget Sound through a comprehensive and prioritized regional science program.*
- *Increase and sustain coordinated efforts for communications, outreach and education to increase public awareness and encourage individual stewardship.*

E.1 Build and use a performance management system to improve accountability for ecosystem outcomes, on-the-ground results, and implementation of actions.
Performance management includes adaptive management, ecosystem monitoring, accountability for action, and information management. Adaptive management is currently not an organizing or central feature of most of the region's natural resource management efforts. While natural resource managers do adapt to numerous cues to be more effective, most implementers lack a formal way to adjust their actions. Formalized, rigorous and transparent adaptive management is a prominent element of a few key management programs in the region, including the Puget Sound Salmon Recovery Plan, the Forests and Fish law, and the Puget Sound Nearshore Partnership. There is a range of maturity among these programs, and in spite of these important steps forward Puget Sound still lacks an adaptive management program that works all the way from monitoring to evaluation to altering management approaches or strategies.

The Partnership has adopted a Plan/Do/Assess/Adapt framework for integrating science into management decisions and in aligning funding priorities with priorities for action. The framework will provide transparency about how resources are allocated, the effectiveness of implementers and the actions they take, and the progress against ecosystem goals. Equipped with this information, the Partnership can communicate effectively with the public and stakeholders to sustain support for the evolving Action Agenda.

E.1.1 *Establish clear processes through which performance and results will be assessed and adaptive actions will be identified.* The legislation creating the Puget Sound Partnership requires a reevaluation of the Action Agenda every two years, "using an adaptive management process informed by tracking actions and monitoring results." The Partnership's challenge is to find a way to inform the decision-making process with relevant information from public outreach, ecosystem monitoring, other scientific investigations, accountability, monitoring, and finance data related to Action Agenda implementation.

- E.1.1.1 Clarify and refine the decision-making roles of the Leadership Council, Ecosystem Coordination Board, Science Panel, and staff.
- E.1.1.2 Continue to integrate the salmon recovery program elements into the broader ecosystem effort, including clarifying the role of the Salmon Recovery Council.
- E.1.1.3 Establish guidelines that direct resources to Action Agenda priorities.

E.1.2 *Develop and implement an accountability system to track the progress of implementation of actions identified in the Action Agenda.* The Puget Sound region has lacked an overall way to account for funds spent, actions taken, and progress achieved at the ecosystem scale. Some accountability mechanisms for localized ecosystem protection or restoration outcomes do exist, such as with relationships between regulatory agencies and entities working to comply with specific mandates and relationships between project sponsors and funders. However, the system has relied heavily on self-report and the consequences of not reporting, not meeting targets, or not fulfilling commitments are minimal and insufficient to impact behavior or alter funding. In addition, funding cannot be directed to the most effective actions because there is a lack of information to do a comparative analysis. Finally, many

actions lack a single lead that can be held accountable for progress. The Partnership will track, evaluate, analyze and report on progress toward implementation of projects critical for meeting ecosystem goals.

E.1.2.1 Establish a system to track the funds from state, federal, local, tribal and other sources spent on actions intended to benefit the Puget Sound ecosystem.

E.1.2.2 For all actions, develop a detailed budget, a scope of work, an action lead, a schedule with milestones, and a performance measure.

E.1.2.3 Require action leads to account for dollars spent, actions accomplished, and outcomes achieved during each reporting period beginning in 2009.

E.1.3 *Develop and implement an information management system to support ecosystem management decision making.* The data and information needed to inform ecosystem management is housed in different agencies and offices and in different information systems. Integration of all types of relevant financial, scientific, monitoring, spatial, management and institutional data will be essential to supporting implementation of the Action Agenda.

E.1.3.1 Develop a comprehensive data management strategy to support implementation of the Action Agenda.

E.1.3.2 Implement a distributed data and information exchange system that can be contributed to and accessed by scientists, implementers, policy makers and other interests.

E.1 Near-term Actions

1. Identify and confirm the information needed to evaluate progress, as well as and the roles, responsibilities and timelines related to making those decisions.
2. Continue to engage the Leadership Council, Ecosystem Coordination Board, Science Panel, and Salmon Recovery Council to advise the Partnership.
3. Pilot a process that incorporates scientific research (including status and trends monitoring and effectiveness studies), accountability tracking data, and public input to inform the development and implementation of the Action Agenda.
4. Develop a schedule and process to update the near-term actions and revise the Action Agenda strategies as necessary.
5. Submit recommendations to the Legislature to better align funding and resources with the Action Agenda in the November 2009 State of the Sound report.
6. Finalize the salmon recovery adaptive management plan as required by NOAA.
7. Build accountability and reporting system to track the Action Agenda and salmon recovery activities.
8. Develop a system to identify and track actions that are inconsistent with the Action Agenda.
9. Work with action leads to develop budgets and performance measures for all actions. Integrate into an adaptive management system.
10. Negotiate performance agreements with leads of actions related to salmon recovery plans, state agency work programs, and projects funded by state grant or loan programs.

11. Develop and implement a Partner Program as specified in the legislation that created the agency.
12. Develop an activity integration tracking system support the Action Agenda accountability system.
13. Prioritize data for sharing and begin placing information on the U.S. EPA Data Exchange.
14. Identify credible sources that provide key information for project management and adaptive management. Make data accessible to the Partnership, as well as regional scientists and the public.

Note that ecological monitoring actions are addressed under E.3.

E.2 Provide sufficient, stable funding and ensure funding is focused on priority actions to increase efficiency and effectiveness.

Although significant expenditures have been made toward the protection and clean up of Puget Sound, implementation of the Action Agenda will require finding ways to spend existing dollars more effectively as well as raise new sources of funding. Many current sources are not aligned with Action Agenda priorities. Spending decisions on Puget Sound have been based upon the decisions of individual agencies and governments without the guidance of a long-term investment strategy for the Sound. Existing grant and loan programs for infrastructure and capital improvement receive requests for funding that are substantially greater than the amount available. The scale of the Action Agenda will require finding new sources to support clean up and recovery.

Over the past year, the Partnership has taken several steps to address the complex issue of funding long-term restoration and protection of Puget Sound. This work has included evaluating existing spending on conservation and recovery, identifying strategies to raise additional funding from conventional and innovative sources, securing additional state and federal funding for the near term, and for the first time, evaluating and aligning state agency budgets with Action Agenda priorities. Four overarching funding strategies are identified and summarized below, and are presented in more detail in the draft funding strategy.

E.2.1 *Focus existing Puget Sound spending on Action Agenda priorities to increase efficiency.* Funds currently spent on Puget Sound conservation and recovery are raised from numerous sources, each of which has its own legal restrictions, fund constraints, administrators, policies and priorities. The effectiveness of this spending is limited by this decentralized, uncoordinated approach. These sources should be integrated and coordinated to address Action Agenda priorities and maximize benefits to Puget Sound cleanup and recovery goals.

E.2.1.1 Align federal, state and local funding with Action Agenda priorities. The authorizing statutes for the Partnership prohibit actions by state agencies that are inconsistent with the Action Agenda. Even further, the Partnership will work with federal, state and local agencies to orient funding directed at Puget Sound to identified Action Agenda priorities.

E.2.1.2 Conduct targeted procurement toward desired outcomes rather than broad grant solicitations. Targeted procurement will require restructuring project solicitations to describe outcomes needed to achieve Action Agenda priorities, such as a specific decrease in nitrogen loading or a specific increase in oak prairie habitat, and solicit proposals for actions that achieve these outcomes. Business, nonprofit, tribal and agency applicants would be free to propose a variety of actions and the administering agency could select those with greater benefits and lower costs.

E.2.2 *Provide additional funding to increase our ability to address priority prevention, restoration and cleanup needs.* Existing funding, even if realigned to be more effective, is not likely to be sufficient over the long term to meet Action Agenda goals. The Puget Sound region will need additional dedicated revenue sources. To begin to address this issue, the Partnership has evaluated sources of additional funding and the laws, policies and practices that determine how they are raised and spent, and identified the amount of revenue that each option could produce.

E.2.2.1 Create a dedicated regional source of funding. This strategy may entail creation of a regional district with the ability to raise money with voter approval.

E.2.2.2 Create new and/or expand existing infrastructure loan programs for public infrastructure projects (e.g., sewers, stormwater retrofits, water quality facilities and potentially natural systems).

E.2.3 *Use innovative funding methods, including market-based approaches, to increase diversity of funding mechanisms and to engage private sector interests.* In addition to new revenue sources, market-based mechanisms also hold the potential to help achieve Action Agenda goals. Existing regulatory frameworks do little to encourage market-driven conservation. More attention is needed on methods to harness the power of market approaches to produce conservation outcomes. Over the past year, the Partnership has identified banking and trading approaches to mitigation and water quality compliance that simplify permitting yet achieve higher environmental performance. This included analyzing ecosystem service markets in the United States and applications for Puget Sound, particularly water quality trading.

E.2.3.1 Implement an in-lieu-fee mitigation program for Puget Sound.

E.2.3.2 Implement a pilot water quality credit and trading system to improve compliance by allowing a wide range of treatment and source control solutions.

E.2.3.3 Implement additional tools to set up ecosystem services markets. Expanding the use of ecosystem markets will require an evaluation of early pilot projects around in-lieu-fee mitigation and water quality trading. If these pilots are deemed successful, work would need to be done to develop methods for evaluating credits, establishing an institutional structure for trading, and establishing trading rules.

Note that some of the actions below are also in Priority D. They are restated here because they have the potential to generate additional revenue for implementation.

E.2 Near-term Actions

1. For state agency budgets, review and provide input on state agency budget proposals for the 2009-11 and 2011-13 biennial budgets.
2. For state agency grant programs, advocate for changes to policies and priorities of the Public Works Trust Fund, Salmon Recovery Funding Board, Washington Wildlife and Recreation Program and other state grant and loan programs, to encourage consistency with Action Agenda goals.
3. For grant requests to the state, per RCW 90.71.340, review grant and loan proposals for state funds to require consistency with Action Agenda goals.
4. For federal and local budgets, to the extent possible, review and comment to encourage alignment with the Action Agenda.
5. Implement targeted procurement on a pilot basis for a portion of the Puget Sound Acquisition and Restoration program that is focused on salmon recovery.
6. Develop targeted procurement for a portion of the largest state environmental grant programs, including the Salmon Recovery Funding Board, Washington Wildlife and Recreation Program, Aquatic Lands Enhancement Account and Conservation Commission.
7. Use Model Toxics Control Account fund balance to implement priority actions for the 2009-11 biennium as a bridge for a longer term dedicated funding source.
8. Continue to evaluate potential state funding sources in greater detail, including full legal and fiscal analysis, and prepare proposals for enactment of revenue sources in the 2010 or 2011 legislative sessions.
9. Pursue state legislation authorizing the creation of a regional improvement district.
10. Establish financial incentives for use of existing Department of Ecology and Public Works Board grant and loan programs to address Action Agenda priorities.
11. Develop financial incentives and provide financial and technical assistance to local governments to develop high priority projects in the Action Agenda for funding with existing Department of Ecology and the Public Works Board programs.
12. As part of implementing the Mitigation That Works recommendations (D.4.2), develop agreements with the U.S. Army Corps of Engineers, the state Department of Ecology and other relevant permitting agencies by 2010 on the design of a regional in-lieu-fee program.
13. Identify and implement one or more pilot projects to demonstrate the application of the in-lieu-fee program. Invest in several restoration projects that can provide initial credits for use in the in-lieu-fee program.
14. Evaluate use of a water quality trading program to address dissolved oxygen issues in south Puget Sound.
15. Develop a framework policy for permit-specific trading in the Puget Sound region. Investigate the use of trading policies and practices to address urban water quality improvements, including investments in urban combined sewer overflow projects.

16. Develop proposals for the 2011-13 Biennium to improve or expand the use of ecosystem markets.

E.3 Continually improve the scientific basis for management actions in the Puget Sound through a comprehensive and prioritized regional science program.

A commitment to science-based ecosystem recovery and adaptive management will require timely, focused, and credible information about ecosystem conditions, factors affecting the ecosystem and human benefits, and the effects of management actions. Existing scientific capacities vary in breadth and depth across Puget Sound governmental and non-governmental entities. In general, most of the existing capacity, even where it is focused and effective in addressing discretely defined technical questions, would be more valuable within the context of a coordinated regional science program. This program will need to be supplemented and leveraged with investments in science to ensure that the Partnership has the information to evaluate progress toward goals and continually improve the scientific understanding of ecosystem recovery.

The Partnership's Science Panel has prepared a draft Biennial Science Work Plan for 2009-11. This plan begins to layout out the components of long-term science strategy and describes priority analyses, data collection, and synthesis and integration efforts to be conducted to meet the needs of the Partnership. These projects will contribute to improving the scientific understanding of the Puget Sound ecosystem and to adaptation of Action Agenda implementation strategies. This plan also describes steps to improve and extend the Partnership's and region's capacities for monitoring, modeling, research, information management, and science education and outreach. The strategies below summarize the major elements of the draft Biennial Science Work Plan.

E.3.1 *Develop and oversee a coordinated monitoring program.* To understand the ecosystem and to adapt management activities through time, the Partnership needs information about (a) status and trends of ecosystem conditions, impacts to important ecosystem goods and services, and factors that affect ecosystem conditions; (b) effectiveness of strategies, programs and projects; and (c) cause and effect linkages for issues involving high risks and difficult tradeoffs. Substantial monitoring programs are currently underway in the Puget Sound region, but these programs are neither well coordinated nor targeted to addressing the needs of the Puget Sound Partnership.

The Partnership will use monitoring of ecosystem indicators and of cause-and-effect relationships to evaluate progress towards ecosystem recovery. Ongoing status and trends monitoring provide some of these indicators; new monitoring capacity may be required to provide information for additional indicators, especially indicators of pollution loading and other factors that affect ecosystem condition.

Investigations of whether management programs and projects achieve their expected outcomes will allow the Partnership to evaluate strategies and actions and to find out whether the reasons for selecting strategies and actions appear to be

correct or should be adjusted. Existing capacity provides some information about program and project effectiveness. New monitoring and research capacity most likely will be required to provide information about programs and projects that are not currently evaluated.

E.3.1.1 Align regional monitoring efforts with the goals, outcomes, strategies and actions outlined in the Action Agenda. Evaluate existing monitoring efforts to identify opportunities to better meet Action Agenda needs by building from or adapting existing efforts or adding new efforts.

E.3.1.2 Conduct status and trend, effectiveness, and cause-and-effect monitoring to provide information about the state of the Sound and the effects of management actions.

E.3.1.3 Evaluate agency science programs and initiatives to recommend adaptations and investments that would best meet Action Agenda and Partnership needs.

E.3.2 *Conduct priority investigations.* Investigations about how the Puget Sound ecosystem works, what threatens ecosystem recovery, and how the ecosystem might respond to management actions can provide information to improve the science basis for the Partnership's work. The Biennial Science Work Plan describes priority investigations for 2009-11 and capacities needed to ensure that investigations would provide credible information and address key needs.

As part of the development of the Biennial Science Work Plan, the Science Panel reviewed inventories of recent and ongoing science projects and recommendations for studies relevant to recovery of the Puget Sound ecosystem. These inventories, presented as an appendix to the Biennial Science Work Plan, identify nearly 300 studies that were completed in the past five years and more than 450 recommendations for scientific investigations. Building from this material and an understanding of the strategic priorities and guiding ecological principles of the Partnership, the Science Panel identified top priority investigations for 2009-11.

E.3.2.1 Analyze existing and evolving information with best available tools. Using the integrated ecosystem assessment framework, conduct modeling studies and other analyses to identify ecosystem indicators and thresholds, assess threats, and evaluate potential management strategies.

E.3.2.2 Conduct focused scientific investigations to collect information about how the ecosystem functions and the effectiveness of management actions.

E.3.3 *Synthesize results and communicate science findings.* Integrate and synthesize findings from scientific investigations to communicate a scientific understanding of the Puget Sound ecosystem to the Partnership, its stakeholders, and citizens. Successfully completing this work will require coordination among participating groups, sharing of information, and interpreting results and findings in a collaborative manner. The Partnership will produce a State of the Sound report to communicate with stakeholders and the public about progress toward and uncertainties about

ecosystem recovery. In addition, the Partnership will produce a Puget Sound science update, a compendium of scientific findings related to ecosystem recovery. The Partnership will produce these reports on a regular schedule. Findings and synthesis products should be peer-reviewed and the technical data and information on which they are based should be publicly available.

E.3.3.1 Assemble and synthesize status and trends information on ecosystem indicators and findings from effectiveness and cause-and-effect monitoring studies.

E.3.3.2 Prepare science portions of State of the Sound reports, including findings from monitoring and assessment program and Science Panel comments on implementation of the Action Agenda.

E. 3.3.3 Prepare Puget Sound science update reports to synthesize findings.

E.3.4 *Build and sustain regional capacity to conduct science.* Integrated, focused, and balanced capacities for monitoring, modeling, research, and data management will ensure that the Partnership obtains the information it needs to continually improve the science basis for ecosystem recovery. The Partnership will develop processes and organization to ensure the integrity of the science program and to engage the regional science community in this program.

E.3.4.1 Develop and sustain capacities for coordinated ecosystem monitoring and applied research, modeling of current and future ecosystem impacts, and research of emerging issues.

E.3.4.2 Support science education, training, and outreach.

E.3.4.3 Develop and sustain data management approach.

E.3.4.4 Develop and follow processes to ensure the integrity of science contributions to ecosystem recovery, including approaches to awarding funds for scientific investigation, peer review of materials forming the basis for Partnership decisions, external program peer review, and defining key research needs.

E.3.4.5 Organize and coordinate regional science capacities to align with needs of the Action Agenda and Puget Sound Partnership. This would include a) convening working groups (organized around topics, strategies, or geographic areas) to provide avenues for scientific community participation in the science program; b) coordinating with other science advisory groups, including Puget Sound Salmon Recovery's regional implementation technical team and the Puget Sound Nearshore Partnership's nearshore science team; and c) reviewing agency science programs and proposals and recommending adjustments and investments to align agency contributions to the Partnership's needs.

E.3 Near-term Actions

1. Fund ongoing monitoring programs to provide status and trend and effectiveness information to inform State of the Sound reporting and other synthesis.

2. Conduct a regional transition to coordinated ecosystem monitoring program. This effort would include a) completing an analysis of ongoing programs in relationship to Action Agenda goals, outcomes, strategies, and actions and b) working with regional experts and stakeholders (e.g., through the Puget Sound Monitoring Consortium) to recommend alignment of monitoring work with the Action Agenda. This would include study designs and coordinated logistics for an enhanced program for monitoring status and trends, program and project effectiveness, and cause-and-effect relationships.
3. Convene the stormwater monitoring work group as a continuing project of the Puget Sound Monitoring Consortium to develop a coordinated regional stormwater monitoring program that includes, but is not limited to, effectiveness of techniques and outcomes.
4. Complete development of the Puget Sound Salmon Recovery Monitoring and Adaptive Management Program. Implement priority features of this program.
5. Evaluate state and federal agency science programs and proposal for new initiatives. Recommend adaptations to programs and proposals to optimize agency contributions to Action Agenda and Partnership needs. Advocate for agency programs and proposals that address Partnership needs.
6. Refine ecosystem indicators through a project to better identify and develop new indicators and develop indices that combine multiple indicators. This work will also help to refine the coordinated monitoring program and facilitate communication of progress toward ecosystem recovery.
7. Coordinate various integrated ecosystem assessment efforts for the Puget Sound ecosystem, including efforts by NOAA's Northwest Fisheries Science Center, Washington Biodiversity Council, and Puget Sound Nearshore Partnership.
8. Explore historical data and develop projections of future scenarios, for some key issues, to examine how ecosystem conditions and threats change. By describing historic conditions and projecting future conditions, scientists can improve understanding of how the ecosystem functions and how it might be affected by management actions.
9. Conduct spatial analysis to evaluate current ecosystem status and the primary threats and drivers affecting desired ecosystem outcomes. This analysis should allow evaluation of the relative importance of threats and drivers and of the geographic distribution of threats and impacts across the ecosystem.
10. Design and implement studies to collect new information about a) the effects of a nearshore restoration actions, b) watershed-wide loading and effects of runoff, c) stressors affecting forage fish and pelagic food webs, and d) ecosystem services and socioeconomic indicators. These studies will demonstrate the benefits of studying management actions and provide important and urgently needed results to questions about how the ecosystem functions and how it is affected by management actions.
11. Assemble and synthesize findings in mid-2009 to describe ecosystem conditions and threats for 2009 State of the Sound. Conduct peer review of science contributions to 2009 State of the Sound
12. Commission lead authors for various sections of science update report and encourage peer contributions and open peer review.

13. Publish 2010 Puget Sound Science Update to provide best available answers about how the ecosystem works, how it has changed over time, and how it is affected by management actions.
14. Develop long-term plan for future scenario modeling, describing the roles and responsibilities of collaborators in carrying this work forward.
15. Identify research priorities, including exploration of emerging trends, and recommend topics for Partnership sponsored science in 2011-13.
16. Create a framework for scientific experts to train and advise education and outreach specialists and networks.
17. Pursue establishment of a Puget Sound science intern and fellowship program.
18. Develop a process for soliciting science projects via competitive requests for proposals.
19. Develop processes for conducting peer review of materials that form the science basis for Partnership decisions.
20. Establish a process for external peer review of the Partnership's science program.
21. Develop working groups to support implementation of the Partnership's science program.
22. Evaluate state and federal agency science programs and initiatives and understand and communicate how programs and initiatives contribute to Partnership science program needs. Recommend ways to adapt agency programs and initiatives to better align with Partnership interests.

E.4 Increase and sustain coordinated efforts for communications, outreach and education to increase public awareness and encourage individual stewardship.

Public opinion research confirms that while a majority of residents highly value Puget Sound, current awareness and concern about its decline is low. For citizens to understand their stake in protecting and cleaning up the Sound and the opportunities to help, awareness of the problem must substantially increase and be maintained over time. Greater awareness, along with citizen support for policy and behavioral changes, is critical for successful recovery and protection of Puget Sound.

E.4.1 *Implement a long-term, highly visible communications effort to increase public understanding of the threats facing Puget Sound and engagement in reducing personal impact.* The Partnership communication strategy is designed to a) raise broad public awareness regarding the health of Puget Sound, b) turn public awareness into individual citizen actions and behavior change, c) build and sustain a long-term coalition of diverse interests working together to protect and restore Puget Sound, and d) focus messages on priority solutions.

- E.4.1.1 Create focused communications messages for audiences.
- E.4.1.2 Coordinate communication efforts and behavior change messages Sound-wide.
- E.4.1.3 Deliver communications through a variety of mediums including, but not limited to direct communications, presentations to associations and civic groups, news media, paid media, and grassroots outreach.

E.4.2 *Expand and sustain local volunteer, steward and educators' programs focused on Action Agenda priorities to increase participation rates and improve efficiency of communications efforts.* Volunteering is one of the most effective ways for the public to engage directly in protecting and restoring Puget Sound. Thousands of volunteers are already working hard, but their efforts and programs are not well coordinated. A better-coordinated approach will be necessary to harness existing and add new volunteer energy in Puget Sound.

E.4.2.1 Use the existing Education, Communication and Outreach Network (EcoNet) to continue to coordinate education, outreach and volunteer efforts.

E.4.2.2 Use the Education Working Group of federal, state and local agency representatives to coordinate related policy and grant efforts.

E.4.2.3 Provide an easy-to-access, coordinated network of local volunteer activities to Puget Sound residents. The network will include opportunities for restoration, "citizen science", and outreach.

E.4.2.4 Provide coordinated technical assistance and training to volunteer efforts focused on consistent messages and up-to-date scientific and technical information as well as scientific protocols.

E.4.3 *Strengthen K-12 environmental programs to improve long-term understanding of Puget Sound issues and solutions.* This effort will build on and tie into existing efforts. Outdoor learning centers and other educational opportunities can help increase project-based learning and community partnerships, and help ensure long-term stewardship and support for Puget Sound protection and restoration by future generations.

E.4.3.1 Provide a "Meaningful Watershed Education Experience" to all primary, middle and high school students in Puget Sound. Teacher training, project-based learning, and outreach will be needed.

E.4.3.2 Include Puget Sound-related environmental, social and economic issues in curriculum.

E.4 Near-term Actions

1. Research and develop targeted communications messages for audiences.
2. Expand efforts to improve coordination of communication efforts and behavior change messages across government agencies and interest groups, such as STORM.
3. Deliver regular communications to a variety of audiences and through a variety of mediums.
4. Conduct a pilot program with the Washington state ferries to educated riders about the condition of Puget Sound and actions they can take to help.
5. Develop a Puget Sound Partnership volunteer and outreach grant to sustain and expand effective and successful volunteer opportunities.
6. Increase trainings for education and outreach providers in up-to-date tools and techniques such as community-based social marketing, use of new technologies, and program evaluation and assessment.

7. Develop and implement a coordinated citizen science program. This will include cataloging and analyzing existing efforts, coordinating existing efforts and replicating those that are effective, providing technical and scientific assistance to community members to conduct local monitoring and assessment that support Action Agenda priorities.
8. Implement the WSU Beach Watcher Sustainability Plan to sustain current programs and expand the effort to all 12 Puget Sound counties.
9. Coordinate with the Pacific Northwest NOAA B-WET grant provider to increase the "Meaningful Watershed Education Experience" model for students in Puget Sound.
10. Promote the use of and make Puget Sound-related curriculum widely available to all teachers and schools.

Action area profiles

The legislation that created the Partnership established seven geographic action areas around the Sound to address problems specific to those areas as they relate to the ecosystem as a whole. Following the structure of the Action Agenda questions, a profile for each action area was created to reflect the geographic and social makeup of the action area and the unique challenges it faces.

The eight action area profile tables identify unique ecosystem benefits and contributions, local threats to ecosystem health, and the actions that move the region, as well as local areas, towards a healthy Puget Sound. The tables are not an exhaustive list of all threats or actions possible in an action area, but instead highlight key issues and actions organized by the Action Agenda strategic priorities. It is important to note that the level of detail about problems and concerns varies greatly around Puget Sound, and in most instances, we are not yet able to compare data across Puget Sound. The profiles reflect local, documented knowledge. The action priorities, for the most part, affirm activities already underway to tackle problems in each action area. Over-time, the action area priorities will need to be refined as we better understand the most important actions within and between local areas.

It is important to view the profiles in relation to the overall Action Agenda as well as one another, as they are intended to nest under the Sound-wide priorities. The individual action area tables may not reflect overarching needs that action areas have identified as important, such as the need for financial and technical assistance with permit compliance, additional ecological monitoring, regional funding, and the rescue tug. Actions that need to be addressed regionally are in the main body of the Action Agenda Question 3 and summarized in the Sound-wide table that precedes individual tables.

How were the profiles developed?

Over the past eleven months, the Partnership has worked with regional scientists, policy experts, and concerned citizens in each action area to develop tailored solutions to their unique problems. We hosted 23 community meetings to discuss the status of Puget Sound's health and understand key issues in each action area tie those key threats to local actions. These discussions with the public have been supplemented by hard work by Partnership liaison staff, Ecosystem Coordination Board representatives, and Leadership Council members who have been working with core members of their action area to refine. In addition, we used the inventory of actions conducted during the development of the Action Agenda.

Next steps

The final Action Agenda will include a narrative description of each action area, maps, updates to these tables that include responsibilities for action.

Draft Action Area Priorities– Strait of Juan de Fuca Action Area

Ecosystem benefits provided by action area	Local threats to ecosystem benefits	Priority action area strategies

Unique Species
• Rare and unique upland species of birds, plants, and animals
 	
Unique Habitat Type and Ecosystem Processes
• Marine/estuary: Exchange of fresh and marine waters helps Puget Sound from becoming stagnant
• Marine/estuary: Migration corridor for fish, bird and marine mammal species
• Upland: Intact upland forests in and around Olympic National Park, Forest, and Wilderness Areas
 	
Food and Timber (harvest)
• Timber and pulp production
• Agricultural production with an extended growing season because of low precipitation conditions
• Shellfish production
• Commercial, recreational, and tribal fishing
• Hatcheries provide harvest opportunities and population stability while wild salmon stocks rebuild: Elwha spring Chinook, Dungeness spring Chinook, Dungeness pink salmon
 	
Recreation and Tourism
• Olympic National Park and Forest, Dungeness National Wildlife Refuge, Olympic Discovery Trail
 	
Community and Economy
• Rural communities
• Favorable climate conditions draws retirees to reside in area
• Marine vessel passage, shipping and marine trades
• Jamestown S'Klallam Tribe
• Lower Elwha Klallam Tribe
• Makah Tribe
	Habitat Alteration
	• **Marine/estuary**: Loss of estuary habitat and pocket estuaries
	• **Marine nearshore**: 14% shoreline modified stretching from Point Wilson to Elwha; 1439 overwater structures; 1.8 miles of railroad along marine shoreline
	• **Freshwater**: Blocked habitat in over 70 miles of mainstem and tributaries; 95% of historic Chinook habitat blocked by Elwha dam system; disruption of river processes through dikes, riparian development, vegetation removal, and poor forest practices
	• **Upland**: Loss of working farms and forests through conversion
	
	Pollution
	• **Toxics**: Port Angeles Harbor contamination, including Rayonier Mill site contamination; contamination from Warmhouse Beach Open Dump site threatens human health, water quality, and shellfish areas; potential threats from oil spills due to high marine traffic
	• **Bacterial Pollution**: High levels of fecal coliform contamination in lower Dungeness River and independent streams and Dungeness and Discovery Bays, resulting in shellfish bed closures
	• **Surface water runoff impacts**: CSO events (69 in 2007); point and non-point sources of pollutants
	
	Freshwater Resources
	• Limited water availability for people, farms, and fish: Low summer flows in WRIA 17, 18, 19; extreme high flows in WRIA 18 & 19; critical water shortages in Neah Bay; many instream flows not established
	• Alteration of surface hydrology**:** Major alteration of flows in Elwha and Dungeness Rivers
	
	Invasive Species
	• Potential negative ecological impacts on native populations: Japanese knotweed, European bittersweet, reed canary grass, and butterfly bush infestations along riparian corridors; Japanese oyster drill, tunicates, and green crab in marine waters
	
	Artificial propagation
	• Fish hatcheries: Potential negative ecological and genetic impacts on natural salmon and other hatchery populations resulting from salmon production; Shellfish production: Not identified as a local issue
	
	Harvest
	• Fishing and bycatch: Strait salmon runs are heavily impacted by Canadian harvest; Logging and hunting practices: Local pressures need to be identified
	
	Localized climate change impact
	• Sea level rise: Predicted loss of tidal flats, complete loss of Dungeness Spit, loss of 58% of estuarine and marine shoreline beaches
	• Changes in hydrology due to loss of permanent snowfields and glaciers
	
	Other
	• Population increase by 2025: 23% in Clallam County (more than 14,000 people) and 55% in Jefferson County (more than 14,000 people)
	• Harmful algae blooms: localized occurrences of seasonal or occasional shellfish area closures from paralytic shellfish poisoning and amnesic shellfish poisoning
		A: Protect Intact Ecosystem Processes, Structures, and Functions
		• Update and implement regulatory programs: Complete Critical Area Ordinance update (City of Sequim); complete Shoreline Master Programs updates (Clallam County, Port Angeles, Sequim, Jefferson County)
		• Protect and conserve water flows: Establish and maintain instream flows for WRIAs 17, 18, and 19; complete and/or implement 2514 plans; improve aquifer resources in the Dungeness and other flow limited basins
		• Protect and support long-term stewardship of working farms, forests and aquatic lands
		
		B: Restore Ecosystem Processes, Structures, and Functions
		• Implement priority ecosystem restoration projects:
		  o Complete Elwha River System Restoration Project
		  o Implement Salmon Recovery three-year workplans for WRIAs 17, 18, 19
		  o Implement existing Marine Resource Plans
		  o Implement Forest Practices Habitat Conservation Plans
		  o Implement Road Maintenance & Abandonment Plans
		  o Implement Conservation District Work Plans
		  o Implement Dungeness River management plans
		• Clean up and restore the Port Angeles Harbor and waterfront through the harbor planning process
		
		C: Reduce the Sources of Water Pollution
		• Prevent pollution: Implement Sequim-Dungeness and East Jefferson Clean Water District Strategies to address TMDLs and shellfish downgrades; enhance capacity to address and mitigate threats and impacts from marine vessel traffic
		• Manage urban stormwater runoff: Implement NPDES permits; update and implement Stormwater Management Plans and Codes (Clallam County, City of Sequim)
		• Upgrade and manage wastewater treatment plants: Implement Carlsborg Urban Growth Area Wastewater Treatment and Water Reuse strategy
		• Manage on-site and septic systems: Implement Clallam and Jefferson counties on-site septic management programs
		• Prioritize inwater and upland toxic clean up sites: Close and remediate the Makah Tribe Warmhouse Beach Open Dump and develop a solid waste transfer and reuse facility
		
		D: Work effectively and efficiently together as a system on priority needs
		• Coordinated long-term strategy
		  o Coordinate planning and implementation: Start with shorelines, land use, and water supply planning
		  o Coordinate protection and restoration actions identified in major plans: Start with salmon recovery, water supply, and marine nearshore plans

Draft Action Area Priorities – Hood Canal Action Area

Ecosystem benefits provided by action area	Local threats to ecosystem benefits	Priority action area strategies

Unique Species
• Unique summer chum salmon stock spawns only in Hood Canal and Eastern Strait of Juan de Fuca
 	
Unique Habitat Type and Ecosystem Processes
• Skokomish River is largest salmon producing river in West Sound
• Marine/estuary: Migration corridor for fish, bird and marine mammal species along nearshore
• Intact upland forests: In and around Olympic National Park, Forest, and Wilderness Areas provide soil and water retention, wildlife habitat
 	
Freshwater Resources
• Water and/or hydropower supply for City of Bremerton, City of Port Townsend, City of Tacoma, eastern communities of Kitsap County
 	
Food and Timber
• Timber, pulp and secondary forest product production
• Internationally renowned oysters
• Commercial, recreational and tribal fishing and shellfishing including salmon and trout, geoduck, oysters, clams, Dungeness crab and Spot Prawn
• Hatcheries provide harvest opportunities and population stability while wild salmon stocks rebuild (Summer chum salmon; reintroduction of spring Chinook and other species to North Fork Skokomish)
 	
Recreation and Tourism
• Boating, sailing, water skiing, diving, hunting,, sportfishing, Olympic National Park, Fort Worden
• Vacation residences.
 	
Community and Economy
• Hood Canal Bridge provides transportation linkage between Kitsap and Olympic peninsulas.
• Homeland security: US Navy Submarine Base at Bangor and Naval Munitions Center at Indian Island.
• Port Gamble S'Klallam Tribe
• Skokomish Tribe
	Habitat Alteration
	• **Marine/estuary:** Loss of estuary habitat and pocket estuaries; loss of recreational, tribal, and commercial shellfish beds through habitat modifications
	• **Marine nearshore**: Disruption of marine shoreline processes from roads, homes, and shoreline armoring that have altered sediment supply, vegetation, water quality and freshwater inputs.
	• **Freshwater**: Blocked habitat including North Fork of Skokomish blocked by Cushman dam, South Fork seasonally blocked by habitat degradation and multiple culverts; Loss of floodplain processes and functions due to decreased flood storage capacity; sediment aggradation; loss of wetlands, altered floodplain connectivity, hydrology, channel network, and riparian area, loss of channel function by simplification and wood removal
	• **Upland**: Loss of working farms and forests through conversion
	
	Pollution
	• **Toxics**: Industrial pollution from mill site in Port Gamble Bay.
	• **Bacterial contamination and pathogens**: loadings from human and animal waste lead to shellfish and recreational swimming beach closures.
	• **Nutrient loading**: significant low dissolved oxygen conditions
	• **Surface water runoff impacts**: Pollutants from stormwater and agricultural runoff.
	
	Freshwater Resources
	• Major alterations in flows: Union, Skokomish, Big and Little Quilcene rivers.
	• Limited water availability for people, farms and fish: year round low flows WRIA 14b and 15; seasonal low flows and extreme high flows WRIA 16 and 17; Many instream flows not established
	
	Invasive Species
	• Potential negative ecological impacts on native populations: Invasive tunicates, Japanese knotweed, reed canary grass, giant hogweed, yellow flag iris, purple loosestrife and European bittersweet.
	
	Artificial Propagation
	• Fish hatcheries: Salmon production has potential negative ecological and genetic impacts on natural populations and other hatchery populations; replacement of indigenous populations by introduced strains from out of the basin may compromise ability to develop viable, locally adapted populations; Shellfish production: not identified as a local issue
	
	Harvest
	• Fishing and bycatch, logging and hunting practices: Local pressures need to be identified
	
	Localized climate change impacts
	• Sea level rise, loss of estuarine beaches, increased shoreline flooding.
	• Reduction in glaciers and snowfields and associated hydrologic impacts.
	
	Other
	• Harmful algal blooms, biotoxin and pathogen outbreaks.
	• Conflicting use values of marine shorelines.
	• Increase in population by 2025: 35% (more than 100,000 people) in Kitsap, Mason and Jefferson counties.
		A: Protect Intact Ecosystem Processes, Structures and Functions
		• Protect high value habitat: Acquire high priority marine and freshwater habitat identified in salmon recovery and other local plans support and protect critical resources and ecosystem processes, structure and function; develop local acquisition strategy
		• Update and implement regulatory programs: Complete Shoreline Master Program updates for Mason, Jefferson and Kitsap counties; Complete Critical Area Ordinance update for Mason County
		• Protect and conserve water flows: Establish or update and implement instream flow rules for WRIA 14b, 15, 16, and 17
		• Protect working forests, particularly on the Tahuya Peninsula
		• Protect and support long-term stewardship of working farms, forests, and aquatic lands
		
		B: Restore Ecosystem Processes, Structures and Functions
		• Implement priority ecosystem restoration projects:
		  ○ Prioritize and implement species recovery plans including: Hood Canal Summer Chum, Skokomish Chinook, mid-Hood Canal Chinook and Bull Trout; implement in coordination with the Shoreline Master Program restoration plans
		  ○ Complete Skokomish River and Quilcene delta restoration projects.
		  ○ Implement Forest Practices Habitat Conservation Plans; implement Road Maintenance and Abandonment Plans; decommission or maintain USFS roads
		• Complete the Skokomish River Ecosystem Restoration and Flood Damage Reduction Study
		
		C: Reduce Sources of Water Pollution
		• Prevent pollution:
		  ○ Establish and implement a Pollution Identification and Correction Program in Jefferson and Mason counties, Port Gamble S'Klallam and Skokomish tribes; continue to implement program in Kitsap county
		  ○ Develop and implement TMDL and 303d category 4b plans
		  ○ Implement shellfish protection district plans: (East Jefferson, Annas Bay, Lower Hood Canal)
		  ○ Investigate, and if appropriate, implement Hood Canal as a No Discharge Zone for boats
		  ○ Investigate opportunities for water reuse at existing future sewage treatment facilities
		• Manage urban stormwater runoff: Update & implement Stormwater Management Plans and Codes (Mason, Jefferson, Kitsap counties, City of Port Townsend, Port Gamble S'Klallam and Skokomish tribes)
		• Upgrade and manage wastewater treatment plants: Complete planned sewer projects for Belfair, Skokomish/Potlach/Hoodsport, Port Hadlock, Paradise Bay, Dosewallips State Park, and Brinnon public facilities.
		• Manage on-site and septic systems: Update and implement on-site sewage system management plans and regulations; address poorly function systems through the action area
		• Establish ambient water quality and quantity monitoring programs for surface and ground water.
		• Prioritize inwater and upland toxic clean up sites: Clean up industrial pollution in Port Gamble bay.
		
		D: Work effectively and efficiently together as a system on priority needs
		• Coordinated long-term strategy:
		  ○ Hood Canal Coordinating Council and Hood Canal Dissolved Oxygen Program to work collaboratively to develop and implement actions to respond to research findings from the Hood Canal Dissolved Oxygen Program.
		  ○ Coordinate and integrate of marine and watershed groups to improve coordinated planning, as well as implementation efficiency and effectiveness; synthesize existing recommendations
		  ○ Integrate and prioritize project needs for ecosystem processes, structure, and function.
		
		E: Other
		• Continue Hood Canal dissolved oxygen research.

Draft Action Area Priorities– North Central Action Area

Ecosystem benefits provided by action area	Local threats to ecosystem benefits	Priority action area strategies

Unique Habitat Type and Ecosystem Processes
• Freshwater: Lowland stream habitats on Kitsap Peninsula support chum, coho, cutthroat and steelhead
• Marine nearshore: Supports chum, pink, and Chinook salmon from throughout Puget Sound
 	
Food and Timber (harvest)
• Shellfish production and harvest
• Recreational and tribal fishing
 	
Recreation and Tourism
• Boating, state parks, shoreline access
 	
Community and Economy
• Water-oriented communities
• Commerce, military, and marine transportation hub
• Homeland security: Keyport Naval Undersea Warfare Center, Puget Sound Naval Shipyard; Manchester Fuel Depot
• Model program for water quality improvements via "pollution identification and correction"
• Port Gamble S'Klallam Tribe
• Suquamish Tribe
	Habitat Alteration
	• **Marine nearshore:** 49% shoreline modified, especially in south part of action area and Bainbridge Island; 291 piers and docks, 108 boat ramps on Bainbridge Island
	• **Upland:** Loss of working farms and forests through conversion for urban and suburban uses; 12% impervious surface overall with considerable variation by watershed
	
	Pollution
	• **Toxics:** Hundreds of acres of contaminated sediments, especially at Sinclair and Dyes inlets, Liberty Bay, and Eagle Harbor from a history of naval and industrial activities; groundwater contamination from Eagle Harbor superfund site
	• **Bacterial contamination**: threatened and closed shellfish growing areas and 7 local streams closed for human contact
	• **Nutrient loading**: low dissolved oxygen in bays, especially in areas of poor flushing
	• **Surface water runoff impacts**: CSO and SSO events
	
	Freshwater Resources
	• **Limited water availability for people, farms and fish**: streamflows dependent on precipitation and groundwater; 80% of drinking water comes from groundwater; streams in urbanized watersheds are subject to low summer flows and peak storm flows.
	
	Invasive Species
	• Potential negative ecological impacts on native populations: Knotweed and other non-native invasive species in some locations
	
	Artificial propagation
	• Fish hatcheries: Salmon production has potential negative ecological and genetic impacts on natural salmon and other hatchery populations; Salmon net pens: potential commercial production of Atlantic salmon in Rich Passage unknown; Shellfish production: not identified as a local issue;
	
	Harvest
	• Fishing and bycatch, logging, and hunting practices: Local pressures need to be identified
	
	Localized climate change impact
	• Sea level rise: Loss of beach land by 2050, converted to tidal flats
	
	Other
	• Population increase by 2025: 21% in Kitsap County (more than 65,000 people)
		A: Protect Intact Ecosystem Processes, Structures and Functions
		• Growth and development: Implement local portions of Vision 2040 plan; coordinate with local transportation planning
		• Protect high value habitat: Acquire "1000 Acre Woods" critical habitat north of Gig Harbor; protect remaining intact nearshore habitat
		• Update and implement regulatory programs: Complete Shoreline Master Program updates (Gig Harbor, Bremerton, Kitsap County); Complete Critical Area Ordinance updates (Port Orchard)
		• Protect and conserve water flows:
		  o Manage lands and runoff to ensure plentiful and clean groundwater recharge
		  o Implement water conservation and reclaimed water development and use
		
		B: Restore Ecosystem Processes, Structures and Functions
		• Implement priority ecosystem restoration projects in existing plans:
		  o Implement Salmon Recovery three-year workplans
		  o Complete Chico Creek, Carpenter Creek and other salmon restoration priority projects
		  o Implement recommendations of Gig Harbor Basin Plan, and Crescent Valley Biodiversity Stewardship Plan in a coordinated way
		• Implement stewardship incentives to increase private landowner restoration projects: Conduct outreach and assist property owners with replacement of hard bulkheads with soft beach protection
		
		C: Reduce Sources of Water Pollution
		• Prevent pollution:
		  o Reduce bacteria contamination in shellfish growing areas, other marine nearshore areas and streams
		  o Control sources of pollution that re-contaminate sediment cleanup sites; support Navy ENVVEST project and other opportunities to cooperate to reduce pollution
		  o Implement KGI Watershed Action Plan
		  o Focus education and outreach activities to reduce pollution from live-aboards, boating and water-based activities
		• Manage urban stormwater runoff:
		  o Use and increase site-appropriate LID techniques; encourage use of technologies and approaches that replicate natural ground water systems to manage for future planned growth
		  o Implement NPDES permits
		• Upgrade wastewater treatment plants: Enforce already required modifications to sewer systems to avoid further pollution
		• Manage on-site and septic systems: Implement Pierce and Kitsap counties onsite management plans; continue to implement pollution identification and correction program
		
		D: Work effectively and efficiently together as a system on priority needs
		• Coordinated long term strategy:
		  o Continue to improve WRIA 15 salmon recovery coordination for implementation
		  o Continue coordination among West Sound Watersheds, KGI Watershed Council, and Shellfish Partners
		  o Integrate nearshore and marine efforts (e.g., Shoreline Master Program updates) with watershed recovery efforts (e.g., Critical Areas Ordinance updates, Salmon Recovery Plan)
		  o Continue coordination with the Navy and other key stakeholders

Draft Action Area Priorities– South Sound Action Area

Ecosystem benefits provided by action area	Local threats to ecosystem benefits	Priority Action Area Strategies

Unique Habitat Types and Ecosystem Processes
• Marine/estuary: Nisqually River is largest undeveloped estuary in Puget Sound and largest National Wildlife Refuge in Puget Sound; important salmon, wildlife and bird habitat
• Marine/estuary: Nursery area for multiple Chinook populations
• Shoreline: Large areas of intact shoreline
• Upland: Unique prairie habitat with endemic species
 	
Food and Timber (harvest)
• Nationally renowned shellfish; one of the largest shellfish producing areas in state
• Recreational and tribal clamming, crabbing and fishing
 	
Freshwater Resources
• Hydropower for City of Centralia and City of Tacoma
• Leadership in reclaiming municipal wastewater
 	
Recreation and Tourism
• Recreation: clamming, crabbing, Mt. Rainier National Park, kayaking, boating
 	
Community and Economy
• Numerous commercial and residential centers
• Center of government
• Ports of Olympia and Shelton
• Homeland security: Fort Lewis & McCord Air Force Base
• Nisqually Tribe
• Squaxin Tribes
	Habitat Alteration
	• **Marine/estuary**: Loss of riparian and estuary habitat, some intertidal alterations
	• **Marine nearshore:** 40% shoreline modified; BNSF rail along eastern shoreline
	• **Freshwater:** Blocked habitat including dams on Deschutes and Nisqually Rivers; fill for I-5 on Nisqually
	• **Upland**: Loss of prairie habitat through land conversion; loss of hydrologic function from existing and expanding impervious surface
	
	Pollution
	• **Toxics**: Industrial pollution in bays and contaminated sediments including Oakland Bay, Chambers Bay, Budd Inlet
	• **Bacteria contamination:** Bacteria and pathogens from human and animal waste
	• **Nutrient loading: low dissolved oxygen** in Budd Inlet, Case Inlet, and Carr Inlet
	• **Air quality**: Poor air quality due to particulate pollution (wood smoke, diesel emissions, etc.)
	
	Freshwater Resources
	• Low flows in WRIA 12; flow issues in WRIA 13
	
	Invasive Species
	• Potential negative ecological impacts on native populations
	
	Artificial propagation
	• Fish hatcheries: Salmon production has potential negative ecological and genetic impacts on natural populations and other hatchery populations and may compromise ability to develop viable, locally adapted populations; Shellfish production: Potential ecosystem impacts related to some aquaculture practices
	
	Harvest
	• Fishing and bycatch, logging, and hunting practices: Local pressures need to be identified
	
	Localized climate change impact
	• Sea level rise: Significant loss of estuarine beaches; inundation of tidal flats; flooding at downtown Olympia
	
	Other
	• Conflicting use values of marine shorelines
	• Increase in population by 2025: 47%; more than 450,000 people, in Thurston, Pierce, Mason counties
		A: Protect Intact Ecosystem Processes, Structures and Functions
		• Protect high value habitat:
		  o Protect undeveloped shoreline
		  o Acquire high priority marine and fresh water habitat, including: Gull Harbor in Budd Inlet; Lower Eld Inlet Shoreline Conservation; Twin River Ranch at Oakland Bay; Harstine Island Shoreline; Filucy Bay Farm and Shoreline; Devils Head; and Lower Ohop Protection Project
		• Update and implement regulatory programs: Complete and implement Shoreline Master Program updates; Complete and implement Critical Area Ordinances
		• Protect and conserve water flows: Continue and expand LOTT Alliance water reuse facilities and nutrient removal
		
		B: Restore Ecosystem Processes, Structures and Functions
		• Implement priority ecosystem restoration projects:
		  o Complete restoration of Nisqually estuary
		  o Implement Salmon Recovery three-year workplans (WRIAs 10/12, 11, 13/14, 15)
		  o Restore shorelines using WRIA 15, and WRIA 11, 13, 14 nearshore assessments
		  o Implement existing basin protection and restoration plans in Key Peninsula, Clover/Chambers, and Nisqually basins; develop plans for other South Sound basins
		  o Develop and implement a multi-species recovery and management plan for salmonids and forage fish not addressed in Chinook Recovery Plans.
		  o Support habitat and shoreline restoration efforts underway in Budd Inlet and Hammersley-Oakland Bay
		  o Develop and implement conservation and recovery plans for prairie dependent species
		• Support and encourage Port of Shelton and Port of Olympia strategic redevelopment plans, including stormwater retrofits
		
		C: Reduce Sources of Water Pollution
		• Reopen key shellfish producing areas in North Bay, Oakland Bay, Henderson Inlet, Burley Lagoon by reducing pollution as identified below.
		• Prevent pollution: Implement existing Watershed Action Plans, Shelllfish Protection Districts, and other water pollution cleanup plans in a coordinated way; Implement the Oakland Bay Sa-Heh-Wa-Mish Initiative and the Oakland Bay Clean Water District strategies.
		• Manage urban stormwater runoff: Develop and Implement LID where feasible; retrofit outdated, existing legacy systems; support development of local surface water management utilities and associated fees
		• Upgrade and manage wastewater treatment plants: Shelton, LOTT, and Chambers Bay
		• Manage on-site and septic systems: Implement on-site management plans for Pierce, Thurston, Mason and Kitsap counties, prioritize areas with shellfish production, low dissolved oxygen, and high nutrient and pathogen loading; Implement Shellfish Partners, and enhance onsite grants and loans programs
		• Prioritize inwater and upland toxic clean up sites: Clean up industrial pollution in Budd Inlet, Oakland Bay, and Chambers Bay
		
		D: Work together as a system on priority actions
		• Coordinated long-term strategy:
		  o Continue recent collaborative work in watershed coordination; investigate whether more formal collaboration is needed
		  o Integrate nearshore and marine efforts (e.g., Shoreline Master Program) with watershed recovery efforts (e.g., Critical Areas Ordinances, Salmon Recovery Plan).
		
		E: Other
		• Maintain Nisqually hatchery operations to conserve Chinook species
		• Implement Ecology best management practices guidelines for geoduck aquaculture
		• Resolve shoreline use conflicts

Draft Action Area Priorities – South Central Action Area

Ecosystem benefits provided by action area	Local threats to ecosystem benefits	Priority action area strategies

Unique Species
• More than 17 unique populations of salmon, trout and steelhead
 	
Unique Habitat Types and Ecosystem Processes
• Freshwater: Core area for bull trout recovery (Puyallup/White)
• Upland: intact upland forest in and around Mt. Rainer National Park
 	
Freshwater Resources
• Water supply for City of Seattle, City of Tacoma, and surrounding metropolitan areas; many water supply watersheds are protected
 	
Food and Timber (harvest)
• Recreational harvest: Lake Washington sockeye and Issaquah Creek Chinook
• Significant agriculture areas
• Commercial, recreational, and tribal fishing
• Hatcheries provide harvest opportunities and population stability while wild salmon stocks rebuild: White River spring Chinook, Puyallup steelhead
 	
Recreation and Tourism
• Mount Rainer National Park, Mount Baker-Snoqualmie National Forest, Lake Washington, Lake Tapps, Lake Sammamish, Mountain to Sound Greenway, boating, sport fishing, diving
 	
Community and Economy
• Population center for Puget Sound with more than three million residents
• Commercial & industrial hub, generating 63% of the gross state product
• Significant rural areas
• Home of the North Pacific fishing fleet
• International port facilities (Tacoma and Seattle) and cruise ship terminal
• Largest wastewater treatment system in the state with innovative Brightwater Treatment Plant
• Marine trades
• Leadership on low impact development, including Built Green and Green Tools programs
• Muckelshoot Tribe
• Puyallup Tribe
	Habitat Alteration
	• **Marine/estuary**: Major loss of estuary habitat in Duwamish and Puyallup River estuaries and creation of an artificial estuary created by the Ballard Locks
	• **Marine nearshore**: 75% shoreline modified, including overwater structures, shoreline armoring, dredging, filling, and marine shoreline vegetation removal
	• **Freshwater**: Over 100 miles of blocked habitat with dams and diversions (Green, White, Puyallup), Significant alteration of rivers, floodplains and shorelines; river straightening and channelization (Duwamish, Puyallup, Cedar, Sammamish); floodplain development, Extensive alteration of surface hydrology, especially Lake Washington, Ballard Locks, White, Cedar, Puyallup, Duwamish and Black Rivers, Significant diversion of water to drinking water supply and wastewater systems to Puget Sound, altering migration routes for salmon, modifying hydrology
	• **Upland**: Loss of working farms and forests through conversion to; 34% impervious surface in urban growth area; increasing urban and rural development
	
	Pollution
	• **Toxics**: Duwamish and Commencement Bay Superfund sites; recontamination of previously cleaned up sites
	• **Bacterial pollution**: Failing septic systems in nearshore areas and throughout watersheds; agricultural runoff
	• **Air pollution**: Significant source from automobile emissions
	• **Nutrient loading**: Especially in areas with limited flushing, (Shilshole Bay, Quartermaster Harbor, and Dumas)
	• **Surface water runoff impacts**: Major source of urban stormwater runoff and pollutants into Puget Sound
	
	Freshwater Resources
	• Limited water availability for people, farms, and fish: Low summer flows and high peak stream flows in WRIAs 8,9,10/12; low mainstem winter flows
	• Increased future water demand for higher population
	• Localized areas of saltwater intrusion into groundwater
	
	Invasive Species
	• Potential negative ecological impacts on native populations: Japanese knotweed, reed canary grass, and butterfly bush infestations along riparian corridors; non-native fish species in most lakes; nutria; marine invasive species including tunicates
	
	Artificial Propagation
	• Fish hatcheries: Salmon production in Lake Washington/Sammamish, Green and White rivers have potentially negative ecological and genetic impacts on natural salmon; Shellfish production: not identified as a local issue
	
	Harvest
	• Fishing and bycatch, logging, and hunting practices: Local pressures need to be identified
	
	Localized climate change impact
	• Significant source of Puget Sound carbon emissions as 50% of carbon emissions are transportation related
	• Sea level rise: Risk of conversion of upland to shoreline; loss of estuarine beaches; limited sea level rise impacts in Tacoma
	
	Other
	• Population increase by 2025: 34% in King, Pierce, Snohomish counties (more than 1,000,000 people)
		A: Protect Intact Ecosystem Processes, Structures and Functions
		• Protect high value habitat:
		  o Acquire high priority habitats (e.g., Lower Puyallup transition zone habitat, White River PSE properties, South prairie Creek, Middle Puyallup forest lands)
		  o Implement White River Biodiversity Stewardship Plan
		  o Implement Habitat Conservation Plans (forest & fish plans, Cedar, Green, Tacoma)
		  o Implement Pierce and King Counties transfer of development rights programs, cluster development, and increase density in urban areas; utilize conservation easements
		  o Update and implement regulatory programs: Shoreline Master Program updates (King and Pierce Counties, all relevant cities); Critical Area Ordinance updates (all relevant cities); restrict additional shoreline armoring
		• Protect and conserve water flows: Complete regional water supply planning process; establish and implement instream flow agreements in Green, White, Lake Washington, Puyallup; promote water conservation and reclaimed water use
		• Protect and support long-term stewardship of working farms, forests and aquatic lands
		
		B: Restore Ecosystem Processes, Structures and Functions
		• Implement priority ecosystem restoration projects:
		  o Implement Salmon Recovery three-year workplans for WRIAs 8, 9, 10/12
		  o Implement existing basin protection and restoration plans in King and Pierce Counties
		  o Implement large-scale floodplain reconnection projects to restore habitat and protect public safety
		  o Provide fish passage at Howard Hanson Dam on Green River, Electron Dam on the Puyallup River and Buckley Diversion dam on the White River
		  o Restore upper Green River riparian corridor, increase channel complexity, and decommission old logging roads
		  o Set levees back along the Cedar, Sammamish, Green, Puyallup, White and Carbon Rivers
		  o Protect and restore Duwamish and Puyallup estuary transition zone habitats.
		
		C: Reduce Sources of Water Pollution
		• Work with Puyallup Tribe, King County Public Health, and homneowners to restore shellfish beds in Quartermaster Harbor
		• Prevent pollution: Coordinated implementation of existing clean water plans and TMDLs; implement Puyallup River Watershed Action Plans
		• Manage urban stormwater runoff: Implement significant stormwater retrofits; implement low impact development strategies; implement NPDES permits; build on STORM education and outreach program; implement pharmaceuticals take-back program
		• Manage on-site and septic systems: Implement Pierce, King and Snohomish Counties onsite management plans; expand Pierce County's onsite grant and loan program.
		• Prioritize inwater and upland toxic clean up sites: Implement Superfund cleanup at Duwamish River, Commencement Bay
		
		D: Work effectively and efficiently together as a system on priority needs
		• Coordinated long-term strategy:
		  o Continue to encourage tribal participation in recovery efforts
		  o Integrate resource planning across water quality, water quantity & salmon recovery—including updates to Critical Area Ordinances and Shoreline Master Programs
		  o Continue to advance regional cooperation in South Central Puget Sound
		  o Implement Vision 2040 plan and coordinate growth planning with water quality and quantity infrastructure investment
		
		E: Other
		• Continue hatchery production for species conservation in White River
		• Continue Kokanee conservation planning and implementation
		• Integrate hatchery production at Issaquah Creek and Soos Creek Hatcheries with salmon recovery

Draft Action Area Priorities – Whidbey Action Area

Ecosystem benefits provided by action area	Local threats to ecosystem benefits	Priority action area strategies

Unique Species
• Core bull trout populations
 	
Unique Habitat Types and Ecosystem Processes
• Marine/estuary: Important hake spawning area (Port Susan)
• Marine/estuary: Three large estuaries provide migratory cross-roads for many salmon populations, significant bird habitat, some of the largest eelgrass beds in Puget Sound, significant kelp beds (west coast of Island County)
• Freshwater: Major Chinook producing rivers (Skagit, Stillaguamish, Snohomish systems); major producer of Coho in Puget Sound and on west coast
• Upland: Intact upland forests in and around North Cascades National Park, Alpine Lakes, Wild Sky, Glacier Peak Wilderness
 	
Freshwater Resources
• Significant freshwater input from large rivers
• Hydropower for western Washington power grid
• Sultan River provides water supply for Everett
 	
Food and Timber (harvest)
• Strong agriculture base: dairy, flowers, vegetables, berries, nursery
• Shellfish production and Dungeness crab fishery
• Commercial, tribal, and recreational fishing
• Hatcheries provide harvest opportunities and population stability while wild salmon stocks rebuild (North Fork Stillaguamish summer Chinook salmon; South Fork Stillaguamish fall Chinook, Snohomish River)
• Timber, pulp production
 	
Recreation and Tourism
• North Cascades National Park and Wilderness Areas, sport fishing, boating, whale watching, skiing
• Tourist attractions at small waterfront communities
 	
Community and Economy
• Significant employment and population centers, including rural water-connected communities (Camano, Whidbey Islands)
• Deepwater ports that support shipping and industry, including Port of Everett
• Homeland security: Whidbey Island Naval Air Station; Naval Station Everett - home of the USS Abraham Lincoln
• Swinomish Tribe
• Tulalip Tribes
• Potential for tidal power
	Habitat Alteration
	• **Marine/estuary**: Loss of estuary tidal marsh and habitat connectivity, with more than 80% of the Snohomish, approximately 75% of the Skagit, and 85% of the Stillaguamish estuaries diked, cutting off tidal marshes and blind tidal channels; only 18% of historic wetlands remain; potential future impacts from tidal power generation
	• **Shorelines**: Development along lake shorelines, reducing habitat availability and heterogeneity, increasing nitrification, increases in invasive species and toxic algal blooms
	• **Marine nearshore**: 38% of marine shoreline armored; over 5,000 overwater structures; 5.6 miles of railroad grade; disconnected feeder bluffs and pocket estuaries, development in sensitive areas
	• **Freshwater**: Loss of large river habitat complexity and floodplain connectivity from diking, riparian clearing, and floodplain development, reducing wood debris jams, side-channels, forested islands and pools
	• **Uplands**: Loss of working farms and forests through conversion resulting in altered basin hydrology and degraded habitat; 16% increase in impervious surface in Snohomish watershed from 1991-2001; potential future development pressure in nearshore, river valley and upland areas
	
	Pollution
	• **Toxics**: Groundwater contamination leaching from past industrial development
	• **Bacterial pollution**: 48% of impaired waters listings due to bacterial pollution,
	• Dissolved oxygen and temperate concerns found in streams
	• **Nutrient loading**: Eutrophication and dissolved oxygen impairments in Penn Cove, Saratoga Passage, Possession Sound
	• **Surface water runoff impacts**: Pollutant loading from urban stormwater and agricultural runoff; emerging pre-spawn fish mortality concern
	
	Freshwater Resources
	• Limited water availability for people, farms, and fish: Low summer flows in WRIAs 5 & 7;
	• Altered magnitude, frequency and duration of peak flow events in WRIAs 3, 4, 5 & 7
	• Alteration of surface hydrology: Major alterations for flows in Skagit and Sultan Rivers below dams
	• Increased freshwater demand from more people, resulting in decreased aquifer levels, saltwater intrusion, and decreased groundwater discharge
	
	Invasive Species
	• Potential negative ecological impacts on native populations: Japanese knotweed, Spartina
	
	Artificial Propagation
	• Salmon production has potential negative ecological and genetic impacts on natural populations and other hatchery populations; Shellfish production: not identified as a local issue
	
	Harvest
	• Fishing and bycatch, logging, and hunting practices: Local pressures need to be identified
	
	Localized climate change impacts
	• Sea level rise: significant change and loss of estuarine habitat in Snohomish, Stillaguamish, and Skagit estuaries; significant loss of Whidbey Island beaches; risk of salt water intrusion; potential loss of floodplain capacity from from diking
	• Changes in hydrology due to reduced snow pack and forest cover
	
	Other
	• Increase in population by 2025: 49% in Skagit, Island, Snohomish counties (over 380,000 people)
	• Toxic algal blooms in lake systems
		A: Protect Intact Ecosystem Processes, Structures and Functions
		• Protect unique functions of the Action Area: Smith Island kelp, Padilla and Fidalgo Bay eelgrass beds, and unique spawning areas and bird habitat
		• Update and implement regulatory programs: Complete and implement Shoreline Master Program updates on schedule; Adopt clearing and grading ordinances throughout Whidbey Basin;
		• Protect and conserve water flows: Implement flow rules and programs in all basins; upgrade flow rules in Snohomish Basin
		• Evaluate need to protect ecosystem processes and quality of life needs when considering tidal energy projects
		• Protect and support -term working farms, forests, and aquatic lands: Support TDR/PDR programs; provide technical assistance to landowners
		• Invasive species: Continue local efforts to identify and eradicate invasive species impairing habitat
		
		B: Restore Ecosystem Processes, Structures and Functions
		• Implement priority restoration projects: Implement Salmon Recovery three-year work plan (WRIAs 3, 4, 5, 6, 7), and restoration components of shoreline management plans.
		• Complete large scale estuary restoration projects in the Skagit, Snohomish, and Stillaguamish rivers and meet restoration targets set in the salmon recovery plans
		• Implement large-scale floodplain reconnection projects to connect side channels and provide mainstem rivers
		• Prioritize derelict gear removal opportunities
		
		C: Reduce Sources of Water Pollution
		• Prevent pollution:
		  o Implement TMDL plans addressing temperature, dissolved oxygen, mercury, and bacteria impairments
		  o Develop and implement strategy to address low dissolved oxygen levels in Penn Cove, Holmes Harbor, Saratoga Passage, and Possession Sound, using lessons learned in Hood Canal
		  o Provide support for technical assistance and cost-share programs for small farms and commercial agriculture to improve and integrate agricultural nutrient management; integrate small farms into current programs; and keep livestock out of streams
		  o Implement STORM group recommendations
		• Manage urban stormwater runoff: Implement NPDES permits, Use and increase site-appropriate LID techniques to manage for future planned growth; begin stormwater retrofits in dense urban areas
		• Manage on-site septic systems
		
		D: Work effectively and efficiently together as a system on priority needs
		• Coordinated long-term strategy:
		  o Support integration of species recovery, water quality, aquatic reserve and natural resource management plans, shoreline master programs, and Marine Resource Committee strategies. Start with salmon recovery, MRC, and water management plans.
		  o Continue to work cooperatively with farming community to develop a coordinated restoration strategy that balances the needs of agriculture and fish; support engagement of salmon recovery watershed groups with the Snohomish and Skagit County Agricultural Advisory Boards and other farming groups; support collaborative efforts to negotiate the Skagit Delta Tidegates and Fish Initiative
		  o Sustain recent collaborative efforts to identify protection and restoration opportunities in the Skagit watershed; Maintain ongoing efforts in the Snohomish and Stillaguamish basins
		  o Investigate a permit coordination pilot project in the Snohomish Basin

Draft Action Area Priorities– Whatcom Action Area

Ecosystem benefits provided by action area	Local threats to ecosystem benefits	Priority action area strategies

Unique Species
• Two unique spring run Chinook populations in Nooksack River
• Historically significant Cherry Point herring spawning area
 	
Unique Habitat Type and Ecosystem Processes
• Marine/estuary: Forage fish habitat
• Upland: Migratory bird habitat
• Intact upland forests: In and around Cascades National Park
 	
Freshwater Resources
• Lake Whatcom watershed provides water for half of Whatcom County
 	
Food and Timber (harvest)
• Large agriculture: Significant dairy industry (ranks in top 5 dairy regions nationally), 75% of US raspberry production, blueberries.
• Shellfish aquaculture and Dungeness crab fishery (Tribal, commercial and recreational)
• Commercial, tribal, and recreational fishing
• Hatcheries to provide harvest opportunities and population stability while wild salmon stocks rebuild (South Fork Nooksack spring Chinook, North Fork Nooksack spring Chinook)
 	
Recreation and Tourism
• Mount Baker, North Cascades, rafting, hiking, kayaking, skiing, birding, Birch Bay, Nooksack River, Lake Whatcom
 	
Community and Economy
• Rural communities
• Proximity to recreation draws outdoor enthusiasts to reside in area
• Lummi Tribe
• Nooksack Tribe
	Habitat Alteration
	• **Marine**: 3,000+ derelict crab pots and multiple fishing nets in Cherry Point reach
	• **Marine/estuary:** Loss of native eelgrass meadows due to shoreline modification and dredging in inner Bellingham Bay
	• **Marine nearshore:** 36% shoreline modified; Degradation of marine riparian vegetation and function
	• **Freshwater:** Loss of mainstem and floodplain river habitat; culverts and dams disrupt hydrology and/or block habitat
	• **Upland**: Loss of forest cover resulting in landslides
	
	Pollution
	• **Industrial pollution**: Bellingham Bay includes toxics, metals, PAHs, nutrients
	• **Bacterial pollution:** nutrients and pathogens from livestock waste lead to shellfish closures in Drayton Harbor, Portage Bay, Chuckanut Bay
	• Low dissolved oxygen, mercury and phosphorous in Lake Whatcom
	• **Surface water runoff impacts**: Bellingham Bay, Birch Bay, Drayton Harbor
	
	Freshwater Resources
	• Low instream flows and many established instream flows not being met
	
	Invasive Species
	• Potential negative ecological impacts on native populations: tunicates in Blaine Marina, Drayton Harbor, Chucknut Bay Birch Bay; rock snot in Chuckanut area; knotweed in Nooksack estuary; spartina in Birch Bay
	
	Artificial propagation
	• Salmon production has potential negative ecological and genetic impacts on natural populations and other hatchery populations; Fall Chinook hatchery production has potential negative impacts on native spring-run Chinook
	
	Harvest
	• Fishing and bycatch: Nooksack Chinook salmon runs heavily impacted by Canadian harvest; Logging and hunting practices: Local pressures need to be identified
	
	Localized climate change impact
	• Sea level rise: loss of swamp, marsh and estuarine beach in Nooksack Delta
	• Potential hydrologic changes in Middle and South forks of the Nooksack due to loss of glaciers and earlier snow melt
	
	Other
	• Increase in population by 2025: 48%, more than 79,000 people
		A: Protect Intact Ecosystem Processes, Structure and Functions
		• Protect high value habitat: Develop strategy to protect large intact marine and nearshore habitat
		• Update and implement regulatory programs: Complete and implement Critical Area Ordinance updates and the County's and Cities' Shoreline Master Programs; Implement new land use measures and mitigation alternatives through implementation of the Birch Bay Watershed characterization Pilot Study.
		• Protect and conserve water flows: Implement Instream Flow Action Plan for WRIA 1; address illegal water withdrawals
		• Protect and support long-term stewardship of working farms, forests and aquatic lands: Limit forest and farm conversions; ensure that forest practices are enforced.
		
		B: Restore Ecosystem Processes, Structure and Functions
		• Implement priority ecosystem restoration projects in existing plans:
		  o Implement Salmon Recovery 3-year workplan for WRIA 1
		  o Implement the Shoreline Master Program restoration plan coordinated with salmon recovery efforts
		• Quantify impacts from derelict fishing and strategically remove starting with Cherry Point
		• Enhance habitat on forested and resource lands
		
		C: Reduce Sources of Water Pollution
		• Prevent pollution:
		  o Implement TMDL plans in Drayton Harbor, Whatcom Creek, Lower Nooksack Basin, Lake Whatcom
		  o Clean up Drayton Harbor, Birch Bay, and Portage Bays: Implement Shellfish Protection Plans; complete and implement other water quality plans in a coordinated way.
		• Manage stormwater runoff:
		  o Implement NPDES permits
		  o Implement Lake Whatcom, Birch Bay and Bellingham Bay Comprehensive Stormwater Management Plans
		  o Use and increase site-appropriate LID techniques
		  o Implement stormwater retrofits in Bellingham
		  o Prioritize local stormwater actions across existing plans, and improve regulatory compliance for discharges.
		• Manage on-site and septic systems: implement O&M plans with initial focus on marine recovery areas; and Lake Whatcom; Improve regulatory enforcement and compliance for reduction of nutrient and pathogen loading.
		• Prioritize inwater and toxic cleanup sites: Continue to clean up Bellingham Bay (Bellingham Bay Pilot Program).
		
		D: Work effectively and efficiently together as a system on priority needs
		• Coordinated long-term strategy:
		  o Continue to work cooperatively with farming community to enhance habitat on farm land and maintain the agricultural land base.
		  o Improve cooperative cross-agency (local, regional, state, federal, tribal) coordination, implementation, and enforcement.
		  o Integrate and coordinate nearshore and marine protection and restoration efforts (e.g., pollution clean up, Shoreline Master Program, Cherry Point Marine Managed Area) with watershed recovery efforts (e.g., Critical Areas Ordinances, Instream Flow Action Plan, Salmon Recovery Plan, MRC plans, Shellfish District Protection Plans).
		• Continue to work cooperatively with Canadian neighbors on transboundary projects
		
		E: Other
		• Continue to support South Fork Chinook Supplementation plan.

Draft Action Area Priorities – San Juan Action Area

Ecosystem benefits provided by action area	Local threats to ecosystem benefits	Priority action area strategies

Unique Species
• Pinto abalone at risk of extinction
 	
Unique Habitat Type and Ecosystem Processes
• Marine nearshore: Habitat for 22 populations of migrating Chinook salmon, supporting Orca populations and marine birds
• Marine nearshore: Extensive forage fish spawning habitat
• Marine nearshore: 70% of rocky reef habitat in Puget Sound
• Marine: Rich diversity of habitats and marine life
 	
Food and Timber (harvest)
• Boutique agriculture industry
• Shellfish industry and crab fishery
• Recreational and tribal fishing and crabbing
 	
Recreation and Tourism
• Moran State Park, American & English Camp, Lime Kiln Park, Turtleback Mountain, Lopez Hill
• Local & international tourist destination (whale watching, kayaking, biking, boating)
 	
Community and Economy
• Vacation residences
• Lummi Tribe
	Habitat Alteration
	• **Marine:** Habitat degradation from derelict gear
	• **Marine/estuary**: Loss of eelgrass habitat; 11 of 27 historical pocket estuaries at risk of degradation
	• **Marine nearshore:** soft shoreline sensitive to modification
	
	Pollution
	• **Toxics:** Potential for localized oil spills; potential for significant pollution from a major oil spill in the Strait
	• **Bacterial contamination**: Inadequate waste management to handle summer influx of visitors; Boater pollution in bays and marinas; potential problems from poorly treated wastewater from Victoria B.C. outfall that reaches islands
	• **Surface water runoff impacts**: Localized pollutant loading from stormwater runoff (e.g., Friday Harbor, ferry landings)
	
	Freshwater Resources
	• **Limited water availability for people, farms and fish:** Groundwater dependent system is vulnerable to groundwater pollution from septic systems and alterations to surface flow**;** increased future water demand
	• **Saltwater intrusion into drinking water supply** (San Juan Island, Lopez)
	
	Invasive Species
	• Potential negative ecological impacts on native populations: Tunicates, Japanese seaweed, purple varnish clams
	
	Artificial Propagation
	• Salmon production has potential negative ecological impacts on natural populations and other hatchery populations; Shellfish production: specific local issues not yet identified
	
	Harvest
	• Fishing and bycatch: commercial and recreational harvest rates of salmon and groundfish may reduce recovery potential; Logging and hunting practices: Local pressures need to be identified
	
	Localized climate change impact
	• Sea level rise and ocean acidification: immediate and longer-term impacts are not well understood
	
	Other
	• Population doubles in summer months
	• Increase in year-round population by 2025: 60%, more than 8,000 people
		A: Protect Intact Ecosystem Processes, Structures and Functions
		• Protect high value habitat:
		  o Acquire priority habitats identified in the Salmon Recovery Plan
		  o Implement San Juan Marine Stewardship Area Plan
		  o Implement the San Juan Marine Stewardship Area Monitoring Plan
		  o Implement San Juan Initiative recommendations
		  o Protect rock fish habitat
		• Update and implement regulatory programs:
		  o Complete Critical Area Ordinance updates and Shoreline Master Program update (San Juan County); Limit alterations on shorelines sensitive to modifications
		• Protect and conserve water flows: Protect existing surface and ground water
		
		B: Restore Ecosystem Processes, Structures and Functions
		• Implement priority ecosystem restoration projects:
		  o Implement Salmon Recovery three-year workplan for WRIA 2
		  o Quantify impacts and strategically remove derelict fishing gear
		
		C: Reduce Sources of Water Pollution
		• Prevent pollution: Maintain local oil spill response programs
		• Manage urban stormwater runoff: Update and implement Stormwater Management Plans and Codes (San Juan County); Implement Low Impact Development for new development
		
		D: Work effectively and efficiently together as a system on priority needs
		• Coordinated long-term strategy:
		  o Integrate the objectives of San Juan Marine Stewardship Plan, the Shoreline Master Program and Critical Areas Ordinances so that they are consistent
		• Implement stewardship and outreach programs and provide technical assistance focused on protection and prevention with residents and tourists
		
		E: Other
		• Implement local aspects of Orca Recovery Plan, including whale watching plan
		• Investigate causes of marine bird declines

QUESTION 4
Where do we start?

The recovery of a healthy Puget Sound ecosystem is akin to a long journey. Now that we have mapped out what we need to do to reach our 2020 goals and near-term actions, we have to organize the steps to ensure we get there. This section of the Action Agenda is a priority near-term work plan that identifies priority actions among all the near-term actions, as well as implementation roles and responsibilities. This is the first time the region will have this type of role clarification.

For the draft Action Agenda, the Partnership has begun to build this workplan by categorizing all of the near-term actions in Question 3 and proposing implementation roles and responsibilities (see attached table). The Partnership will evaluate these near-term actions and any others that may be identified through the public review to create a prioritized list of near-actions with roles and responsibilities. Following completion of the Action Agenda in December, each of the near-term actions will have a work plan with implementation steps and milestones.

Implementation table: All of the near-term actions are listed in the table by Priorities A-E and identified under an implementation category: capital project, program, legislation or regulatory change, science, or education and outreach. Implementation roles and responsibilities include:

- Roles for the Puget Sound Partnership
    - Lead (with funding or as the lead implementer)
    - Convene, facilitate, or participate
    - Advocate for funding or policy
- Near-term action lead
- Near-term action partners

The Partnership is planning to update the table through the public review process. A list of implementer abbreviations follows the table.

Next Steps

Prior to the Action Agenda release on December 1st, the Partnership will identity approximate costs of the near-term actions and then develop a ranked list by comparing cost to expected ecological benefits and other factors such as readiness and likelihood of effectiveness. Ecological benefits will be determined using the ecosystem management principles identified in Question 3. These include, but are not limited to actions determined to have high ecological benefit by addressing the highest priority threats facing the Sound; actions that benefit large geographic areas of the Sound; actions that address more than one ecosystem goal; actions that address an urgent problem that would have irreversible consequences; and actions that provide critical information to help the region make strategic decisions in the near future.

In addition, a similar table will be created for each of the action areas to identify roles and responsibilities. Many of the actions listed in the action area profiles are also identified generally or specifically in the Sound-wide near-term action list. Those are that are not currently on the Sound-wide list will be considered for inclusion.

ACTIONS		TYPE	PARTNERSHIP ROLE				LEAD AGENCY	PARTNERS
			Fund Implement	Convene Facilitate Participate	Advocate funding Advocate policy			
Priority A: Protect Intact Ecosystem Processes, Structure, and Function								
A.1 Focus growth away from ecologically important and sensivite areas by encouraging dense, compact cities, vital rural communities, and protected areas.								
1	Convene a regional planning forum to create a coordinated vision for protecting and restoring Puget Sound ecosystem.	Program (new)	Implement	Convene			PSP	CLC, Quality Growth Alliance, CTED, Local Gov't
2	Prepare a set of criteria to guide decisions for acquiring and ptrotecting high-value, high-risk	Program (new)	Implement				PSP	DOE, DFW, NMFS, USFWS, TNC
3	Initiate or complete maps for each of the watersheds within the Puget Sound basin.	Science/research/monitoring	Lead fund				PSP	DOE, DFW, CTED, Local gov't, tribes
A.2 Permanently protect the significant intact areas of the Puget Sound ecosystem that still function well.								
1	Purchase high value habitat and land at immediate risk of conversion as identified through existing processes such as the salmon recovery plans and	Capital	Lead fund		Funding		Varies by project	Varies by project
2	Advocate for proposed Wilderness designations: a) Support Alpine Lakes Wilderness addition and b) Pratt River Wild and Scenic Designation.	Legislation			Policy		Washington Wilderness Coalition, Sierra Club	Federal delegation
3	Convene a task force to develop a recommended mechanism to the Partnership on options to rapidly acquire properties with high ecological value and immenent risk of conversion.	Program (new)	Implement		Funding		PSP	TNC, CLC, TPL, NFWF, DFW, tribes
4	Work with the Marine Managed Areas Work Group chaired by DFW to develop recommendations to improve the effectiveness of MPAs by December	Program (continue)		Participate	Policy		DFW	People for Puget Sound, Tribes, Northwest Straights Commission
5	Provide funding and technical assistance to local jurisdictions to update local shoreline management programs by current deadlines with all updates complete by 2013.	Program (continue)			Funding		DOE	Local Gov't
6	Provide local governments with guidance regarding a strategy to achieve and measure no-net-loss of ecological function as required by the Shoreline Management Act and the Shoreline Master Program Guidelines.	Program (new), Regulatory change		Convene, Participate			DOE	Local Gov't
7	Change Shoreline Management Act statues and regulations to require a shoreline conditional use permit for bulkheads and docks associated with all residential development; for all new shoreline hardening; for all seawall/bulkhead/revetment repair projects; and for new docks and piers.	Regulatory change			Policy		PSP	DOE, Local Gov't, Development interests
A.3 Protect and conserve freshwater resources to increase and sustain water availability for instream and human uses.								
1	Complete setting flow rules in watersheds that currently do not have instream flow rules, with priority given to critical basins or those with known significant problems meeting instream or out-of-	Program (continue)			Funding		DOE	DFW, Watersheds Planning Groups
2	Begin to update instream flow rules to ensure they are based on current science.	Program (continue)			Funding		DOE	DFW, Watersheds Planning Groups
3	Develop and implement the comprehensive basin flow protection and enhancement programs called for in the Puget Sound Chinook Recovery Plan.	Program (new)	Lead fund				PSP	DOE, DFW, Watersheds Planning Groups, Utilities, Flood Reservoir Managers
4	Implement the recommendations from the approved water quantity plans under the Watershed Planning Act consistent with the Action Agenda and coordinated with other local restoration and	Program (continue)			Policy		DOE	Watersheds Planning Groups, Utilities, Local Gov't, DFW
5	Evaluate and implement solutions to exempt well issues.	Legislation (state), Program (new)		Convene	Policy		DOE	Local Gov't, DOH
6	Establish local water masters to increase water code compliance and enforcement.	Program (new)			Funding		DOE	Local Gov't
7	Support municipal water systems implementation of Washington Department of Health's Water Use Efficiency Rule, including establishing water conservation goals, metering, and reporting from all municipal suppliers.	Program (new)			Funding		DOH	Utilities, Local Gov't
8	Develop a gray water reuse rule by December 31,	Program (new)			Policy		DOE	Utilities, Local Gov't
A.4 Protect and support long-term stewardship of working farms, forests, and aquatic lands to help maintain ecosystem functions, sustained quality of life, and improved viability of rural communities.								
1	Purchase development rights or use conversation easements for working lands at immediate risk of conversion.	Capital	Lead fund		Funding		Varies by project	WCC, TNC, CLC, TPL, Local Gov't, Forest groups, Ag Groups

ACTIONS		TYPE	PARTNERSHIP ROLE				LEAD AGENCY	PARTNERS
			Fund Implement	Convene Facilitate Participate	Advocate funding Advocate policy			
2	Coordinate with the SSB 5248 project by the Ruckelshaus Center that is working to resolve conflicts between agricultural activities and critical areas regulations.	Program (continue)			Policy		Ruckelshaus Center/UW	Local Gov't, Ag groups
3	Support the Conservation Commission's efforts to protect productive agricultural areas consistent with the Action Agenda priorities.	Program (continue)			Funding		CC	Local Gov't, Ag groups
4	Continue to implement existing forest practice plans and regulations consistent with the Action Agenda including the state trust lands HCP, state forest practices rules, and Road Maintenance and Abandonment Plans as informed by the Forst and Fish Plan, and others.	Program (continue)			Funding		DNR	DFW, forest industry, Watershed Planning Groups.
5	Continue ongoing work to resolve conflicts between aquaculture and upland uses	Program (continue), Science/research/monitoring		Convene	Funding		PSP	SARC, Aquaculture industry, environmental groups, tribes, shoreline property owners, DNR
6	6. Implement components of the Washington Department of Natural Resource Aquatic HCP that protect critical habitat.	Program (continue)			Funding		DNR	
A.5 Prevent and rapidly respond to the introduction of new invasive species.								
1	Advocate for national or west coast regional ballast water discharge standards.	Legislation (federal), Regulatory change			Policy		DOE	DFW, NMFS, USFWS, Invasive Species Council
2	Implement the Department of Fish and Wildlife ballast water regulatory compliance monitoring	Program (new)			Funding		DFW	Coast Guard, DOE
3	Develop a Puget Sound baseline and database of invasive species to guide control efforts.	Program (new)						
Priority B: Restore Ecosystem Processes, Structures, and Functions								
B.1 Implement and maintain priority ecosystem restoration projects for marine, marine nearshore, estuary, freshwater riparian and uplands.								
1	Implement restoration projects in the salmon recovery three-year work plans and the Estuary and Salmon Restoration Program of the Nearshore	Capital	Lead fund		Funding		PSP	Watersheds, NMFS
2	Complete large-scale restoration projects at the mouths of major river systems in Puget Sound where there is a high likelihood of recreating ecosystem	Capital	Lead fund		Funding		PSP	Varies by project
3	Complete of the Puget Sound Nearshore Partnership's General Investigation in a timely way to help identify and refine nearshore restoration opportunities and move toward implementation.	Program (continue)		Participate	Funding		DFW	PSNERP Partners
B.2 Revitalize waterfront communities while enhancing marine and freshwater shoreline environments.								
1	Fund a one year pilot program to develop a coordinated clean up and restoration plan for the Port Angeles Harbor and waterfront.	Capital			Funding		Port	DNR, DOE, tribes, community groups
2	Continue Bellingham Bay Pilot Program to clean up Bellingham Bay in a coordinated way.	Program (continue), Capital			Funding		Port	DOE, DFW, Watersheds, Watersheds
B.3 Support and implement stewardship incentive programs to increase private landowners ability to undertake restoration projects.								
1	Implement coordinated incentive and technical assistance programs for private landowners through the Conservation District, WSU Extension, and local governments.	Program (new)			Funding		WCC	Local conservation districts, WSU, local gov't
Priority C: Reduce the Sources of Water Pollution								
C.1 Prevent pollutants from being introduced in the Puget Sound ecosystem to decrease the loadings from toxics, nutrients, and pathogens.								
1	Conduct a focused outreach campaign to reduce pollutants identified in the Phase II of the toxic loading study that are priority threats to Puget	Education/outreach			Funding		DOE	Local harardous waste management programs
2	Implement Department of Ecology's PBT program to reduce and eventually eliminate the use of all chemicals on the PBT list.	Program (continue)			Funding		DOE	Industry, Vendors, Environmental groups
3	Permanently fund a rescue tug at Neah Bay.	Legislation (federal)			Funding, Policy		PSP	DOE, environmental groups, shipping interests, Coast Guard, Tribes
4	Obtain enhanced delegated authority from the Coast Guard to the Department of Ecology to inspect vessels, investigate incidents, and approve oil spill prevention plans for vessels and facilities.	Regulatory change		Facilitate	Policy		DOE	Coast Guard
5	Petition EPA to establish Puget Sound as a No Discharge Zone to eliminate bacteria, nutrients and pathogens from being discharged into Puget Sound.	Program (new), Regulatory change			Funding, Policy		PSP	EPA, DOE, Ports, Marinas, DOH, Parks, Boat owners

ACTIONS		TYPE	PARTNERSHIP ROLE				LEAD AGENCY	PARTNERS
			Fund Implement	Convene Facilitate Participate	Advocate funding Advocate policy			
6	Implement existing air management plans consistent with the Action Agenda.	Program (continue)			Funding		DOE	PSCAA
7	Implement Shellfish District Protection plans, Marine Managed Area plans, and related projects to restore water quality at commercial and recreational shellfish areas that are degraded or threatened.	Program (continue)			Funding		Varies	DOE, DOH, DFW, DNR, Local Gov't, Utilities, SARC
8	Implement immediate remediation actions to address Hood Canal's low dissolved oxygen through the Hood Canal Dissolved Oxygen Program.	Capital	Lead fund		Funding		DOH	DOH, DOE, Utiltiies, Local Gov't Tribes, land owners
9	Implement priority strategies and actions to address low dissolved oxygen in South Sound, targeted areas in the Whidbey Basin, and other vulnerable areas.	Capital			Funding		DOH	DOH, DOE, Utiltiies, Local Gov't Tribes, land owners
C.2 Use a comprehensive, integrated approach to managing urban stormwater and rural surface water runoff to reduce stormwater volumes and pollutant loadings.								
1	Establish a regional coordinated monitoring program for stormwater, working with the Monitoring Consortium of the Stormwater Work Group.	Program (new), Science/research/monitoring		Convene	Funding		PSP	DOE, EPA, Monitoring Consortium
2	Provide financial and technical assistance to cities and counties to implement NPDES Phase I and II	Program (continue)			Funding		DOE	Local Gov't
3	Assist cities and counties in adopting low impact development stormwater codes for development and redevelopment.	Regulatory change		Participate	Policy		PSP	DOE, Local Gov't
4	Develop and implement low impact development incentives.	Program (new)			Funding, Policy		DOE	CC, Local Gov't, Developers
5	Convene a focus group to evaluate the technical and programmatic solutions for CSOs in the context of improving water quality in fresh and marine water and preserving and recovering the health of Puget	Program (new)		Facilitate, Convene			PSP	EPA, King County, City of Seattle
6	Develop high-level criteria that can be applied in 2009 to determine the highest priority areas around the Sound for stormwater retrofits.	Program (new)	Implement				PSP	DOE, Local Gov't
7	Implement road maintenance and abandonment programs for federal and dstate owned lands (incluidng trustlands) as well as private timber lands.	Program (continue)			Funding		DNR	Forest land owners
8	Implement private property stewardship, incentive, and technical assistant programs (e.g. Conservation Districts, WSU Extension, local government programs) that focus on reducing sources of water pollution, particularly in priority areas.	Program (continue)			Funding		WCC	DOE, EPA, Counties, Extention Programs
C.3 Prioritize and complete upgrades to wastewater treatment facilities to reduce pollutant loading.								
1	Ensure that AKART or better standards are met in nutrient sensitive areas such as Hood Canal, South Sound, and the Whidbey Basin.	Program (continue)			Funding		DOE	Utilities
2	Provide funding to local governments, particularly in nutrient sensitive areas, to initiate projects to upgrade wastewater treament facilities.	Capital			Funding		Public Works Trust Fund	DOH, DOE
3	Support federal facilities in reducing nutrient and pathogens, particularly in already impaired areas.	Capital			Funding		EPA	DOD, COE
C.4 Establish and maintain locally coordinated, effective on-site sewage system management to reduce pollutant loading to vulnerable surface waters.								
1	Develop and implement septic system management plans in each Puget Sound county.	Program (new)			Funding		Health Districts	DOH
2	Revise the current septic system rule no later than December 2010 so that standards are established to address new septic system technologies.	Regulatory change			Policy		DOH	Health Districts
3	Enhance and target septic loan programs to ensure that programs are targeted to areas of with demonstrated loadings issues and vulnerable waters.	Program (continue)			Funding, Policy		DOE	Shorebank, DOH, Health Districts, Gates Foundation
C.5 Prioritize and continue to implement toxic clean up programs for contaminated waterways and sediments.								
1	1. Continue to implement ongoing high priority remediation and clean up projects.	Capital			Funding		DOE	EPA, Responsible Parties
2	2. Refine Ecology's near-term prioritization criteria for site clean ups to be consistent with the Action Agenda and incorporate criteria into toxic clean up grant programs.	Program (modify)		Participate	Policy		DOE	EPA
C.6 Continue to monitor swimming beaches as well as conduct shellfish and fish advisory programs to reduce human exposure to health hazards.								
1	1. Fund the swimming beach monitoring program.	Program (continue)			Funding		DOH	Parks
2	2. Fund the shellfish and fish advisory monitoring programs.	Program (continue)			Funding		DOH	Parks, DNR, Aquaculture Industry
Priority D: Work effectively and efficiently together								
D.1 Conduct planning, implementation and decision-making in an integrated way and from an ecosystem perspective consistent with the Action Agenda.								

ACTIONS		TYPE	PARTNERSHIP ROLE			LEAD AGENCY	PARTNERS
			Fund Implement	Convene Facilitate Participate	Advocate funding Advocate policy		
1	Coordinate implementation of existing plans and programs that support the Action Agenda, and realign or discontinue plans and programs that conflict with the strategies and actions set forth in the	Program (modify)		Facilitate		PSP	various
2	Develop and implement the Steelhead Recovery Plan, building on the Chinook Recovery Plan and integrating the Action Agenda priorities.	Program (new)			Funding	NMFS	Salmon Recovery Council, Watershed Planning Groups
3	Use and augment existing species plans to create actionable workplans for imperiled species without existing or specified plans.	Program (new)		Convene		PSP	NMFS, USFWS, DFW
4	Continue the integration of habitat, harvest, and hatchery efforts in the salmon recover plans and watershed three-year work plans.	Program (continue)	Lead fund		Funding	PSP	Salmon Recovery Council, Watershed Planning Groups
5	Make the southern resident killer whale plan actionable with assignments and implementation timelines and implement the plan.	Program (modify)			Policy	NMFS	Gov't agencies, tribes, NGO's, others
6	Implement the 2008 Revision to the Pacific Salmon Treaty.	Program (continue)			Policy	DFW	Tribes, Alaska Fish and Game, Governor's Office, Canada
7	Implement the priority recommendations of the Hatchery Scientific Review Group to update state hatcheries to protect wild salmonid stocks.	Program (continue)			Funding, Policy	DFW	Tribes, Hatchery Scientific Review Group
D.2 Support, develop, and integrate climate change programs and adaptation strategies in the Action Agenda to improve implementation effectiveness and regional and local readiness for anticipated changes.							
1	Once the recommendations of the Climate Change Study Groups are available, integrate and coordinate them with the Action Agenda.	Program (new)	Implement			PSP	CIG, Governor's Office
D.3 Build and sustain long-term capacity of partners to effectively and efficiently implement the Action Agenda.							
1	Integrate the work of the Puget Sound Nearshore Partnership (PSNERP), including the Estuary and Salmon Restoration Program, into the Puget Sound Partnership to improve efficiency, coordination and to avoid overlap and duplication of efforts.	Program (modify)	Implement			PSP	PSNERP
2	Fund salmon recovery and other collaborative groups such as Regional Fisheries Enhancement Groups and 2514 watershed planning groups in the near-term to continue existing work.	Program (continue)			Policy	PSP	Planning groups
3	Fund tribes to participate in the refinement and implementation of the Action Agenda, including salmon recovery plans.	Program (continue)	Lead fund			PSP	Tribes
4	Establish a Federal Puget Sound Office	Program (new), Legislation (federal)			Funding, Policy	Federal Delegation	Federal Delegation
5	Consider the recommendations of the Local Integration Task Force and implement appropriate	Program (new)	Implement			PSP	Task Force
6	Support appropriations to federal agencies to implement specific priorities in the Action Agenda.	Program (continue)			Funding	Federal Agencies	Federal Delegation
7	Continue and expand outreach to, and collaboration with, private and nongovernmental interests including, the Puget Sound business caucus, environmental caucus, agricultural groups, shellfish growers, and private landowners in the implementation of the Action Agenda.	Education/outreach	Implement			PSP	All parties
D.4 Reform the environmental regulatory system to protect habitat at an ecosystem scale.							
1	Conduct an institutional analysis of local, state and federal agencies with regulatory authority over upland terrestrial and aquatic habitats, species protection, and water quality.	Program (modify)	Implement			PSP	Federal, State and Local agencies
2	Evaluate the effectiveness of the Clark County pilot of the Office of Regulatory Assistance's iPermit program, and adjust the program as needed. Identify a Puget Sound county and one or more cities in the same watershed in which to further pilot the iPermit	Program (new)	Implement			PSP	ORA, Clark County
3	Convene a process and make recommendations to the Partnership about streamlining permitting processes for habitat restoration projects.	Program (new)		Convene		PSP	DFW, DOE, COE, Local Gov't, Salmon Recovery Council
4	Convene a process with Corps, NMFS, USFWS, jurisdictions responsible for levee maintenance, and stakeholders to identify and describe conflicts between levee maintenance standards and healthy	Program (new)		Convene		PSP	COE, NMFS, USFWS, Local Gov't
5	Support funding and legislation to allow state loans to local governments to conduct environmental reviews under SEPA at the planning or programmatic	Program (continue), Legislation			Funding, Policy	CTED	DOE

ACTIONS		TYPE	PARTNERSHIP ROLE			LEAD AGENCY	PARTNERS
			Fund Implement	Convene Facilitate Participate	Advocate funding Advocate policy		
6	Develop, fund, and implement an off-site mitigation pilot project funded through a fee in lieu of construction program in one to three Puget Sound	Program (new)	Implement			PSP	DOE, COE, Local Gov't
D.5 Improve compliance with rules and regulations to increase the likelihood of achieving ecosystem outcomes.							
1	Convene a process with federal, state and local jurisdictions to develop an ideal compliance assistance and inspection program that would leverage existing fragmented inspection programs into an integrated program without co-opting the regulatory and enforcement authority of any	Program (new)		Convene		PSP	DOE, COE, DFW, Local Gov't
2	Provide additional state compliance inspectors to ensure that business producing hazardous waste are complying with regulations.	Program (modify)			Funding	DOE	
3	Support state water quality fee revisions to provide additional compliance staff at Department of Ecology	Program (modify)			Funding	DOE	
4	Provide additional staff at the Department of Ecology to conduct field visits to improve compliance with shoreline and aquatic regulations.	Program (modify)			Funding	DOE	
5	Develop and implement a training program for designers and contractors who work in nearshore	Education/outreach	Implement			PSP	Development Interests, Local Gov't

ACRONYMNS

AKART	All Known and Reasonable Technology
ASP	Amnesic Shellfish Poisoning (also known as Domoic Acid Poisoning)
CAA	Clean Air Act
CLC	Cascade Land Conservancy
CSO	Combined Sewer Overflow
CTED	Washington State Department of Community Trade and Economic Development
CWA	Clean Water Act
DPSIR	Conceptual model reflecting the drivers (D), pressures (P), states (S), impacts (I), and responses (R) of factors effecting valued components of the ecosystem
ENVVEST	Puget Sound Naval Shipyard & Intermediate Maintenance Facility Project ENVironmental InVESTment (www.ecy.wa.gov/programs/wq/tmdl/sinclair-dyes_inlets/sinclair_cd/read_me.htm)
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FPA	Forest Practices Act
GMA	Growth Management Act
HAB	Harmful Algal Bloom
HCCC	Hood Canal Coordinating Council
HCDOP	Hood Canal Dissolved Oxygen Project, Integrated Assessment and Modeling (www.hoodcanal.washington.edu/)
HCP	Habitat Conservation Plan
HPA	Hydraulic Project Approval program

IEA	Integrated Ecosystem Assessment
IM	Information management
MPA	Marine Protected Area
MRC	Marine Resource Committees
NANOOS	Northwest Association of Networked Ocean Observing Systems (www.ccalmr.ogi.edu/nanoos/about.php)
NEP	National Estuary Program
NOAA	National Oceanographic and Atmospheric Administration
NOAA	National Oceanic and Atmospheric Administration
NOAAF	NOAA Fisheries
NPDES	National Pollutant Discharge Elimination System
NSC	Northwest Straits Commission
NWFSC	Northwest Fisheries Science Center
NWIFC	Northwest Indian Fisheries Commission
PAH	Polycyclic aromatic hydrocarbons
Parks	Washington State Department of Parks and Recreation
PBT	Persistent Bioaccumulation Toxics
PCB	Polychlorinated biphenyl
PDBE	Polybrominated diphenyl ethers
PSAMP	Puget Sound Assessment and Monitoring Program
PSAT	Puget Sound Action Team (www.psp.wa.gov/downloads/SOS07/2007_PS_Update.pdf)
PSCAA	Puget Sound Clean Air Agency

PSMEM-C	Puget Sound Marine Environmental Modeling Consortium (www.psmem.org)
PSNERP	Puget Sound Nearshore Ecosystem Restoration Partnership (www.pugetsoundnearshore.org)
PSP	Puget Sound Partnership (www.psp.wa.gov) Puget Sound Regional Council
PSP	Paralytic Shellfish Poisoning (also known as “red tide”)
PSRC	Puget Sound Regional Council
RCO	Recreation and Conservation Office (www.rco.wa.gov/rcfb/default.asp).
RFP	Request for proposal
SARC	Shellfish Aquaculture Regulatory Committee
SEPA	State Environmental Policy Act
SMA	Shoreline Management Act
SRFB	Salmon Recovery Funding Board
TMDL	Total Maximum Daily Load
TNC	The Nature Conservancy
TPL	Trust for Public Lands
UGA	Urban Growth Area
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
DFW	Washington State Department of Fish and Wildlife
DNR	Washington State Department of Natural resources
DOE	Washington State Department of Ecology
DOH	Washington State Department of Health
WRIA	Water Resource Inventory Area

DRAFT Financing Chapter

Introduction

Puget Sound provides direct economic benefits of more than $3.5 billion per year to the regional economy, including $100 million per year in fishing and shellfish revenues, $3 billion per year from regional tourism and $490 million per year from boating[1].

The Sound is also an important attraction to the 135,000 companies providing more than 2 million jobs in the region. Polls consistently show that the quality of the environment is an important factor in maintaining the region's economic growth, which outpaces three-fourths of the nation's metropolitan areas.[2] The billions of dollars in property values for the 2,500 miles of Puget Sound shoreline attest to the real value people place on this resource. There is clearly a lot at stake in maintaining the health of Puget Sound.

The direct out-of-pocket costs of allowing the Sound to continue to deteriorate include:

- Endangered Species Act designation of many more species that are currently in decline, with significant increases in recovery and permitting costs;
- Chronic water quality problems, such as untreated stormwater discharges triggering expensive cleanup and compliance requirements; and
- Substantial cost increases for dwindling water supplies and more expensive wastewater treatment, stormwater management, and flood protection facilities.

Juxtapose this with the economic benefits of a well-executed cleanup and restoration program. First, the economic sectors that feed off the health of the Sound, including tourism, recreation, commercial and tribal fishing, are likely to grow. In addition, most of the money invested in cleanup and restoration projects will flow directly to local economies, where it will support family-wage jobs in construction, restoration design, land management, and green farming and forestry practices. Studies show that each dollar spent on local construction projects has a ripple effect in local economies, driving $1.50 and $2.50 in secondary spending on materials and services.

Therefore, while the costs of cleaning up and restoring the Sound will be substantial, they should be compared to the far greater costs of delay and the economic benefits of a thriving Puget Sound.

The financing approach

The scope and complexity of the work required to reach our 2020 Puget Sound recovery goals requires actions be undertaken incrementally, strategically and comprehensively. The Action Agenda will be adaptively managed with incremental changes in actions based on their cost and effectiveness. The Action Agenda is also strategic, picking actions that align with strategic priorities.

---

[1] Washington Department of Ecology. 2008. Focus on Puget Sound.

[2] Bureau of Economic Analysis. 2008. GDP by Metropolitan Area for 2006 and Revised 2004-2005.

The finance strategy is also built around the same incremental and strategic approach. Funding sources will be expanded as actions are proved and important building blocks are completed. It will also be strategic, ensuring that every dollar, existing and new, is spent to full advantage. Existing funding sources have been screened and evaluated for degree of support to the Action Agenda. The Partnership has also begun to work collaboratively with the agencies that control existing funding programs to ensure that public and private money is optimally aligned to support the Action Agenda. The Partnership has also identified potential new sources of funding, such as enhancements to public loan programs and incentives that leverage maximum environmental benefit and non-traditional sources of funding.

An incremental, strategic approach will ultimately lead to a comprehensive finance strategy that will encompass traditional and non-traditional resources to fully implement all of the actions necessary to reach our 2020 Puget Sound recovery goals.

How much will our actions cost?

The Action Agenda recommends several types of actions, including: capital projects; regulatory programs and adjustments; incentives; scientific research, and education and outreach programs. Methods for calculating the costs for each of these actions vary. Some actions, such as estuary restoration projects, have detailed cost estimates already prepared. Similarly, if an action involves an adjustment to an existing program, such as the acceleration of shoreline planning, good cost estimates are available. Other actions, however, do not have detailed cost estimates prepared. In those cases, unit costs of similar work or other methods were used to provide an initial estimate.

Initial cost estimates for implementing essential actions in the 2009-2011 biennium range between $200 million and $300 million. This estimate covers the cost of additions or adjustments to existing projects or programs as well as new actions. It does not include the cost of existing programs that are already being implemented.

The estimate will be refined after the draft Action Agenda has been reviewed and after the Leadership Council has provided direction on priority actions for initial implementation. The cost for implementing the Action Agenda would be shared across state, federal and local governments.

Given that one of the core strategies of the Action Agenda is to continually evaluate program effectiveness and make needed adjustments, the total cost of implementing the Action Agenda through 2020 cannot be calculated. Estimates of required actions will be produced on an ongoing basis.

Existing spending on cleanup and recovery

Existing Puget Sound funding can be divided into three categories. The first is spending that is specifically for Puget Sound cleanup and recovery activities. Those funds can be readily refocused to Action Agenda priorities. The funding for the operation of the Puget Sound Partnership and the 2008 EPA funding for Puget Sound cleanup is a good example of this category. Moving forward, funding in this category should be focused on implementation of priority actions.

The second category is composed of spending that is specifically for Puget Sound cleanup and recovery, but which is spent by an agency other than the Partnership and may be constrained by

law for specific purposes. For example, spending on wastewater treatment cannot readily be spent on other activities. This funding should be aligned to the greatest extent possible with the priorities in the Action Agenda. This may involve modifying laws and policies of state, federal and local governments.

The final category is composed of spending that is not directed at Puget Sound but could benefit Puget Sound cleanup and recovery efforts if properly focused. This spending covers activities such as road maintenance, construction site monitoring, and forest road decommissioning. The Partnership will work to identify all of this type of funding and develop technical assistance, education, and incentive programs to help focus the associated work in ways that are beneficial to the Sound.

Category 1 spending levels: Currently, the first category includes $60 million per year of spending directly on priorities of the Action Agenda. The major sources include:

Federal	State	Local
• EPA Puget Sound appropriations • COE Puget Sound and Adjacent Waters • COE Puget Sound Nearshore Ecosystem Restoration programs • Portions of the NOAA Pacific Coastal Salmon Recovery Fund • Portions of USFWS Cooperative Endangered Species Conservation Fund and other grant programs	• Partnership operations • Specific ongoing programs for Puget Sound • Portions of the State Revolving Fund and Public Works Trust Fund programs • Portions of the state match for the Pacific Coastal Salmon Recovery Fund • Portions of the Washington Wildlife and Recreation Program, aquatic Lands Enhancement Account grants and numerous other grant	• Portions of discretionary local match for state and federal grant programs • Portions of discretionary local funding for habitat, stormwater, water quality, and other environmental projects

Category 2 spending levels: Approximately $150 million a year in this category is currently spent on actions focused on Puget Sound recovery. They include:

Federal	State	Local
• Toxics and hazardous waste cleanup programs at federal facilities • Wastewater improvements to federal facilities • Forest road decommissioning and fish passage barrier removal efforts on USFS Lands	• Specific ongoing programs by state agencies impacting Puget Sound • The State Revolving Fund and Public Works Trust Fund programs	• Local funding for habitat, stormwater, water quality, and other environmental projects

Category 3 spending levels: The total amount of spending that benefits Puget Sound in this category is uncertain given that the benefits are relatively indirect.

Addressing the gap
There is both a short-term and long-term gap in additional funding needed to implement the Action Agenda. The Partnership will focus on the following sources to address the short-term gap for the 2009-2011 biennium:

- Utilization of $30 million to $40 million in Model Toxics Control Account (MTCA) cash (one-time from fund balance)
- $10 million in 2010-11 from competitive state and federal grant sources
- $10 million to $20 million per year from federal appropriations to the Partnership
- $15 million per year in local government match
- $100-150 million per year from state general obligation bond appropriations to the Partnership

This strategy, if fully successful, will result in estimated investments of $150 million to $200 million per year in the 2009-11 biennium.

Several new funding sources are being considered to address long-term needs:

- Develop options to leverage infrastructure loan programs to increase available funding and to help distressed communities implement priority projects;
- Expand the use of water quality trading;
- Develop and implement ecosystem service markets to redirect existing and new spending toward more environmentally beneficial and cost-effective compliance and mitigation projects that also fulfill Action Agenda priorities;
- Establish a Puget Sound-wide improvement district to generate and distribute revenue to Action Agenda priorities;
- Establish a dedicated state revenue source to provide a sustained source of funding for Action Agenda projects and programs; and
- Increase federal support for cleanup and restoration through a federal designation of Puget Sound under the Great Waters program, including a specific federal authorization for funding for Puget Sound.

Expanding the use of ecosystem service markets
Ecosystem service markets are institutions that allow the exchange of environmental credits among buyers and sellers. Most are driven by regulatory requirements, such as mitigation or water quality compliance, and most buyers are developers, industries, or utilities that need credits to address permitting requirements. Many are set up under “cap-and-trade” regulations, which cap pollutants but allow permittees to acquire credits to address their requirements. Sellers include mitigation bankers, conservation organizations, entrepreneurs, and government agencies that agree to produce credits through restoration or cleanup projects.

Ecosystem service markets are evolving rapidly worldwide, driven largely by cap-and-trade approaches to the reduction of greenhouse gas emissions. The financing strategy for the Action Agenda includes two market approaches: 1) the creation of an in-lieu-fee mitigation program; and 2) further development of a water quality trading framework. Initial implementation steps for these programs involve the development of the trading platform, crediting protocols and project implementation strategies.

Roles and responsibilities

The success of the funding strategy depends on the coordinated action of many individuals, agencies and organizations. The following is a description of the major roles for public and private partners:

Federal Government

- All agencies should identify budget priorities in consultation with the Partnership and seek funding for priority Action Agenda items in the annual appropriations process.
- The Environmental Protection Agency should continue to allocate federal Puget Sound funds in accord with Action Agenda priorities and in consultation with the Partnership.
- Federal grant-making agencies, including the U.S. Fish and Wildlife Service and U.S. Army Corps of Engineers, should consult the Partnership on priorities for grant funding.
- Federal agencies with capital project responsibilities, including the Federal Highway Administration, should use the Puget Sound in-lieu-fee mitigation program to fulfill mitigation needs.
- EPA should support and help fund the creation of water quality trading policy and programs in the Puget Sound region.
- The Corps of Engineers should support the creation of the in-lieu-fee mitigation program.

State Government

- Per existing law, all agencies should identify budget priorities in consultation with the Partnership and seek funding for priority Action Agenda items in the biannual appropriations process.
- State grant-making agencies, including the Salmon Recovery Funding Board, the Department of Ecology and the Recreation and Conservation Office, should consult the Partnership and integrate Action Agenda priorities into grant funding.
- The Partnership should: take the lead in coordinating the implementation of the funding strategy; track progress on achieving funding goals; and modify the strategy as needed to improve performance.
- The Department of Ecology, working with the Partnership and other stakeholders, should create of a water quality trading framework and policies, as well as the development of the in-lieu-fee mitigation program.
- State agencies with capital project responsibilities, including the Department of Transportation, should use the Puget Sound in-lieu-fee mitigation program to fulfill mitigation needs.

Local Government

- County and city governments should support the design and establishment of a Puget Sound improvement district to collect and distribute funding for Action Agenda priorities.
- County and city governments, working with salmon and watershed recovery groups, should prioritize Action Agenda projects in local capital improvement and grant programs.
- County and city governments should modify policies and regulations as needed to support the regional in-lieu-fee and water quality trading programs.
- County and city governments should support Action Agenda priorities in state and federal budget processes.

Private Sector

- Environmental and community groups should support Action Agenda priorities in local, state and federal appropriations processes.
- Environmental groups and land trusts should continue providing private funding for conservation and restoration projects consistent with the Action Agenda.
- Private landowners should continue to take actions on their property that are consistent with Action Agenda priorities.
- The private development community should help develop in the in-lieu-fee and water quality trading programs and should participate actively in the programs once established.