



King County's
 PRELIMINARY RESPONSE
 TO ORDINANCE 15869—
 PLANS FOR SUPPORTING
 THE PUGET SOUND PARTNERSHIP

SEPTEMBER 14, 2007



King County

BACKGROUND

The Puget Sound Partnership is a Washington State agency established in 2007 to lead efforts to protect and restore Puget Sound and its spectacular diversity of life, now and for future generations. The partnership will create a long-term plan called the 2020 Action Agenda by September 2008. The 2020 Action Agenda will identify and prioritize actions, name those responsible, identify funding, track progress, and report the results publicly.

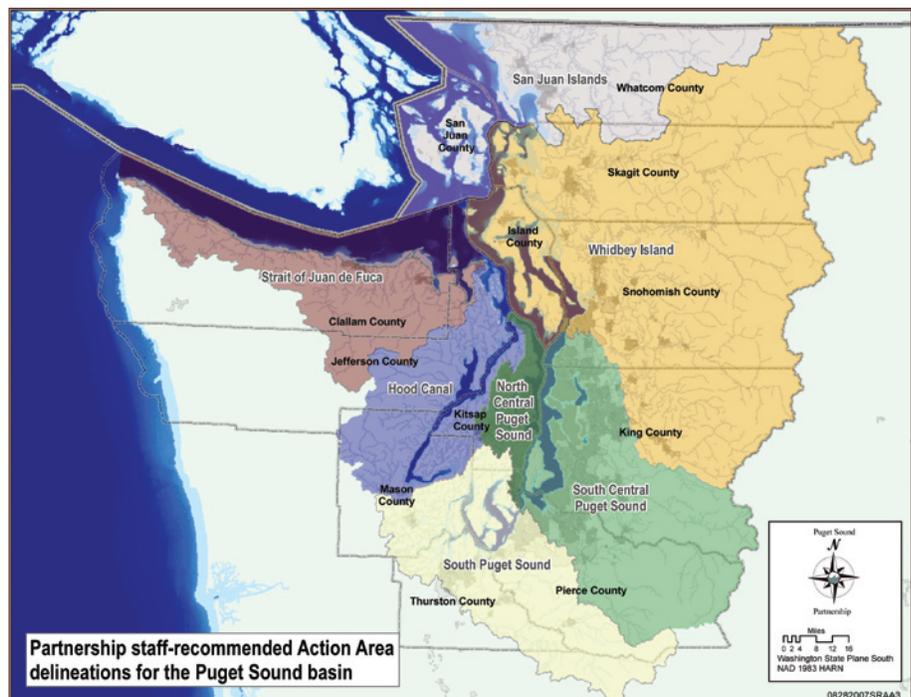
The Puget Sound Partnership (PSP) identified six goals as essential for creating a healthy Puget Sound by 2020:

- A healthy and prosperous human population supported by a healthy Puget Sound that is not threatened by changes in the ecosystem
- A quality of life that is sustained by a functioning ecosystem
- Healthy and sustaining populations of native species in Puget Sound, including a robust food web
- A healthy Puget Sound where freshwater, estuary, nearshore, marine, and upland habitats are protected, restored, and maintained
- An ecosystem that is supported by groundwater levels as well as river and streamflow levels sufficient to sustain people, fish, and wildlife, and the natural functions of the environment
- Fresh and marine waters and sediments of sufficient quality so that the waters of the region are safe for drinking, swimming, shellfish harvest and consumption, and other human uses and are not harmful to the native marine mammals, fish, birds, and shellfish of the region

The legislation that created the PSP established seven geographic Action Areas. These areas will collectively encompass the entire Puget Sound basin and will include the uplands that drain to marine waters. On August 31, 2007, the PSP's Leadership Council took action to set the boundaries for five of the seven Puget Sound Action Areas. King County is part of the South Central Puget Sound Action Area and the Whidbey Island Action Area (see map).

Local plans, programs, and actions that address the health of Puget Sound will make up a large part of the 2020 Action Agenda. To develop the Action Agenda, the PSP will work with local watershed groups, tribes, cities, counties, special purpose districts, and the private sector in the Action Areas to do the following.

- Consider scientific information on the ecosystem risks in their area. Identify key actions to address these risks
- Evaluate existing programs and plans



- Recommend area-specific actions, programs, and strategies for adoption in the Action Agenda

In addition to the Leadership Council, the PSP is also creating an Ecosystem Coordination Board. This board will advise the PSP's Leadership Council on carrying out its responsibilities. It will be made up of 27 individuals representing specific interests around the Sound. Nominations for the board will come from various groups and organizations that are responsible for selecting qualified candidates. This selection process is already under way. The board will consist of the following representation:

- One member from each of the seven Puget Sound Action Areas
- One member from each of the following: a county, a city, and a port district
- Two members from each of the following: general business interests and environmental interests
- Three members from each of the following: state government, tribes, and federal government
- Four state legislators (one representing each caucus in each chamber)

On July 26, 2007, the King County Council approved Ordinance 15869 directing the development of a preliminary work program, expansion of water quality monitoring programs and scientific studies, and analysis of reorganization options to allow King County to support the work of the PSP. This document presents the preliminary response to Ordinance 15869 due on September 16, 2007. The final version will be submitted to the Council for approval by January 1, 2008. This preliminary response attempts to document what has been done to-date and to project how King County will work over the next few months with the PSP to identify and prioritize actions that will move Puget Sound recovery forward. The January 1, 2008, final work program will provide a more in-depth response and will be informed by comments from the Council and by discussions with the PSP.

The next three sections of this report respond to the three sections of Ordinance 15869 and their associated assignments. (The *italicized text* at the start of each section and each subsection reflects language from the ordinance.)

SECTION 1. DEVELOP A WORK PROGRAM

The Executive and the department of natural resources and parks is directed to develop a work program to address the manner in which King County will coordinate with cities and other governmental agencies in the county to assess the role and responsibilities that local governments will have under chapter 90.71 RCW and other laws of Washington as stipulated in Engrossed Senate Bill 5372 including potentially responsibilities to participate and expand the functions of local watershed groups. The program shall include, but not be limited to, the following:

A. A public information or communication plan for local elected leadership and appropriate staff within agencies and departments of cities, ports and tribes regarding Puget Sound activities

The King County Department of Natural Resources and Parks (KCDNRP), in concert with the Executive's Office and the new Puget Sound Partnership, will prepare and include in the final work program a detailed communications plan for integrating our work with the extensive public education and outreach plan under development through the PSP. According to the PSP, **approximately 25 percent of the region's population has a high awareness or concern about the Sound's environmental health.** The proposed communications plan will include (1) public education and outreach efforts that are under way, (2) a plan for communication and collaboration among the many local jurisdictions included in the South Central Puget Sound and Whidbey Island Action Areas, and

(3) objectives, goals, key messages, strategies, timelines, metrics, and other essential elements that will incorporate the messages and strategies from the PSP public awareness and education effort. We expect to work closely with the King County Council and other local elected leaders to seek input and review of the communications component of the plan. We want to ensure that it serves as a model for how other local jurisdictions can integrate their communications and public education and outreach efforts with the PSP's Sound-wide effort.

King County has been reaching out to the public for many years regarding the importance of protecting the region's water quality through campaigns involving natural yard care and pesticide reduction, recycling, wastewater treatment, habitat protection and restoration, eco-consumerism, green building, swimming beach monitoring, proper disposal of hazardous waste, and much more.

KCDNRP uses survey results to help plan and carry out efforts to protect water quality and to communicate with the public. The county conducts an annual Water Quality Survey and a biannual Environmental Behavior Index (EBI) survey to track public awareness and attitudes on water quality issues and programs. The Water Quality Survey takes place in December of each year, with findings available soon after. The next EBI survey will next occur in May 2008; findings will be available in June.

KCDNRP is already folding its extensive public education and outreach efforts related to Puget Sound water quality into PSP efforts. The county is currently represented on the Puget Sound Education, Communication and Outreach Network (ECO Network) and the PSP's creative advisory team, which participated in the development of the Public Awareness and Engagement Plan, and plans to participate in the PSP launch of an outreach campaign in 2008. Participation in these groups provides the opportunity to coordinate our activities with other agencies and organizations involved in Puget Sound protection, to review materials, and to provide expertise in the creation of messages and materials.

An example of our current efforts to integrate our work with Puget Sound recovery efforts is the link on KCDNRP's Web site at <http://dnr.metrokc.gov/soundtips/> and a companion brochure, both of which identify actions the public can take to play a role in the recovery and protection of Puget Sound. In addition, a variety of brochures (*Sound Tips*, *Environmental Behavior Index*), outreach events (Earth Day Expo, Puget Soundscape, Mud Up, Northwest Flower and Garden Show, Duwamish Alive), Web links, and news releases reach thousands of Puget Sound citizens and have provided effective tools for conveying key messages. For example, since January 2006, KCDNRP has issued approximately 160 news releases that address a wide range of subjects related to PSP core messages. KCDNRP will continue to integrate our efforts with emerging PSP public education and outreach efforts.

Existing inter-jurisdictional venues provide more opportunities to communicate and collaborate with cities and other governmental agencies in King County and beyond:

- In Fall 2007, KCDNRP is convening representatives from many of King County's cities and jurisdictions to consider collaborative compliance with the National Pollutant Discharge Elimination System (NPDES) public outreach and education requirements. Collaborative efforts are new to this version of the permit for municipal stormwater and are being encouraged. Meetings are taking place this fall with the goal of developing a regional education proposal by the end of 2007.
- Under the terms of King County's NPDES permit for municipal stormwater, the county submits annual reports to the Washington State Department of Ecology (Ecology) that include an analysis of public education and outreach activities. The annual report that documents 2007 accomplishments and a surface water management plan that documents plans for 2008 will be prepared for internal review in December 2007, for public review in January 2008, and for submittal to Ecology per NPDES permit requirements by March 21, 2008.

- To support the salmon conservation planning effort, KCDNRP participates in the development of work products, including public education and outreach materials, under the interlocal agreement construct that involves cost sharing by more than 45 cities and jurisdictions. Work includes advocating for salmon priorities and funding; coordinating between multiple diverse parties; running programs, tours, and workshops related to watershed health and salmon recovery; and tracking and monitoring implementation of actions.

B. Strategy for assembly of elected officials, agencies and experts in King County to share information and research regarding Puget Sound and its tributaries

KCDNRP proposes two potential venues to assemble elected officials, agencies, and experts in King County to share information and research regarding Puget Sound and its tributaries:

- **Joint Watershed Assembly.** The Water Resource Inventory Area (WRIA) 8 (Lake Washington/Cedar/Sammamish) Salmon Recovery Council, the WRIA 9 (Green/Duwamish and Central Puget Sound) Forum, the Snoqualmie Forum, and possibly the WRIA 7 (Snoqualmie/Skykomish Forum) are currently considering convening a joint watershed assembly for their leadership. This meeting would serve multiple purposes, such as affording opportunities for the WRIAs to share successes to-date, tools and unique approaches, and challenges in implementing their individual salmon recovery plans. The meeting would also provide a forum for discussing Puget Sound actions already completed, future needs, and ways that the WRIAs could work together on PSP priorities in the future. Invitation of WRIA 10 (White/Puyallup) representatives will also be considered.
- **King County/PSP Joint Event.** We propose that a jointly sponsored event be held between King County and the PSP after the appointment of the Ecosystem Coordination Board and the identification of the board representatives for the South Central Puget Sound and Whidbey Island Action Areas in early October. The event would be convened by the two representatives on the Ecosystem Coordination Board. Its purpose would be to share views on actions under way and discuss how local jurisdictions will participate in the development of the Action Agenda.

C. Proposal or options for coordinating and identifying countywide priorities for action and funding from available resources to support implementation of plans, specific projects and programs

Maintaining a healthy Puget Sound has been a local and state interest for many decades. Numerous federal, state, and local programs work to improve the Sound's water quality, habitat, and wildlife.

King County is a leader in environmental protection and will work with the region to improve our overall performance in this arena. KCDNRP and other King County agencies currently administer numerous programs that support PSP's vision and goals. Many of these programs offer award-winning and innovative approaches to managing natural resources and public infrastructure. KCDNRP proposes to coordinate and identify countywide priorities for Puget Sound actions and funding through these existing and successful collaborative programs.

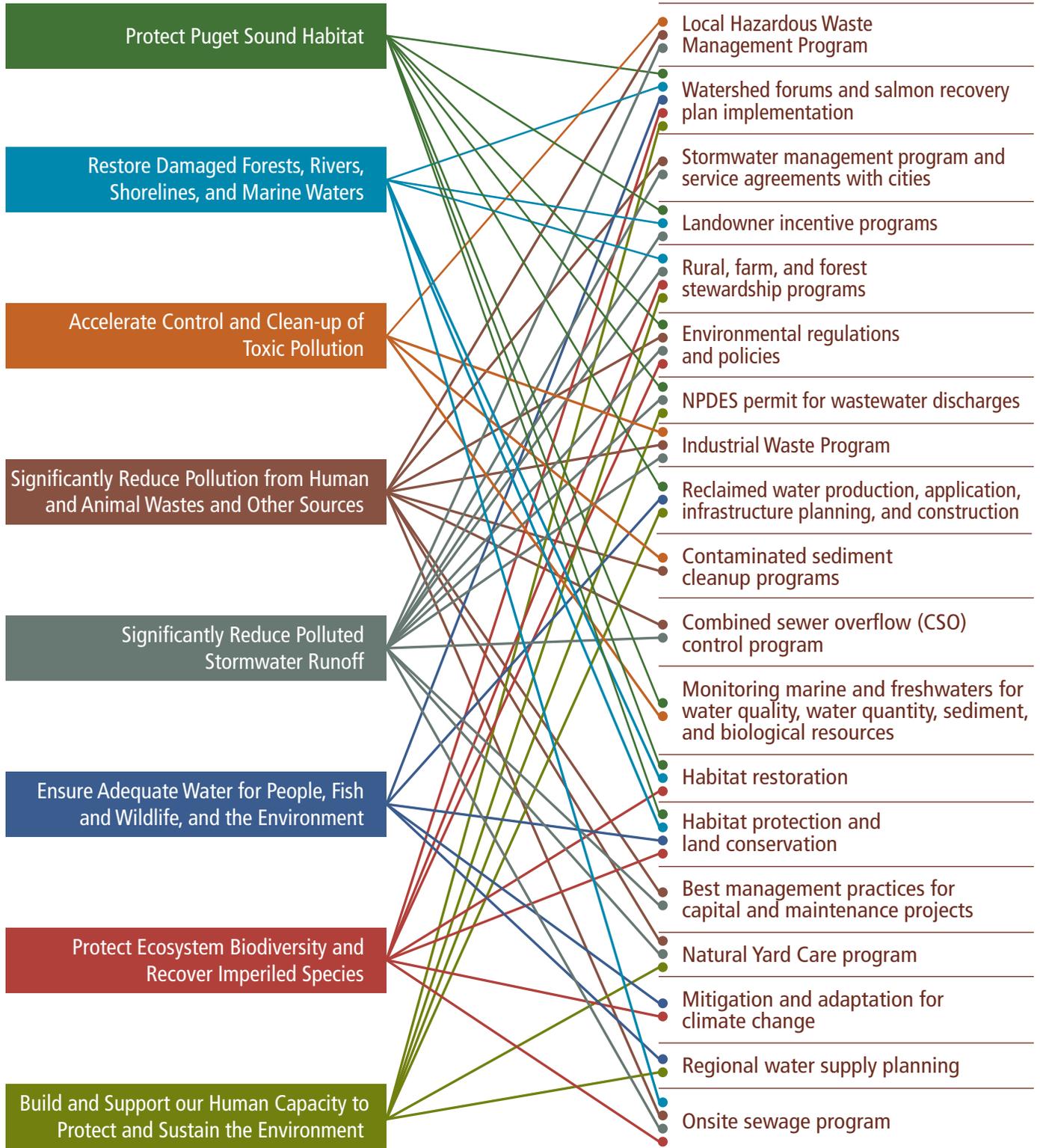
The PSP has stated that "A system-wide approach that addresses all of the complex connections among our land, water, and web of species offers the best hope for achieving multiple and connected needs for people and natural systems in Puget Sound." The following text describes the many King County programs that support the PSP system-wide priorities; the illustration on the next page demonstrates the breadth of linkages between the programs that the county already administers and the priorities of the PSP. This web of linkages provides a great foundation for increased efforts to protect and restore Puget Sound.

EXTENSIVE LINKAGES BETWEEN KING COUNTY PROGRAMS AND PSP PRIORITIES

for illustrative purposes only

Puget Sound Partnership's Essential Priorities for a Healthy Puget Sound by 2020

King County Programs & Partnerships That Directly Support PSP Priorities



Local Hazardous Waste Management Program. The Local Hazardous Waste Management Program (LHWMP) is a regional program that complements other county efforts to protect water quality. LHWMP brings together resources from four local government agencies and 37 suburban cities to protect and enhance public health and environmental quality by helping citizens, businesses, and government reduce the threat posed by the production, use, storage, and disposal of hazardous materials. The program provides collection and recycling services and offers public outreach aimed at proper handling and reduction in use of hazardous products. In 2006, the Program collected 2,970 tons of household hazardous waste from more than 52,400 customers. Also, more than 260,400 gallons of used motor oil were collected at public and private collection sites throughout the county.

Watershed forums and salmon recovery plan implementation. King County is the service provider for three watershed forums whose primary task is to facilitate implementation of their respective salmon recovery plans. These plans are part of a regional Puget Sound salmon recovery plan and identify specific actions, including site-specific habitat protection and restoration projects and programmatic actions such as shoreline management programs. King County is also a local member of these forums and is implementing priority actions from these plans. In 2006, the Water and Land Resources Division (WLRD) spent close to \$3 million on habitat restoration including actions in the Snoqualmie, Cedar, Green, and White River watersheds and a small habitat restoration project granting program. The watershed forums and councils are successful examples of how multiple jurisdictions can join together and leverage resources and expertise to address complex environmental challenges.

Stormwater management program and service agreements with cities. Stormwater services are the nuts and bolts of basic environmental management. King County is the stormwater service provider for all of unincorporated King County and the contract service provider for several incorporated cities. In addition to maintaining, inspecting, and retrofitting stormwater conveyance, flow control, and water quality treatment facilities, King County Stormwater Services maintains and facilitates effective application of the county's stormwater facility design standards for new development and redevelopment (contained in the *Surface Water Design Manual*) and does the same for the county's stormwater source control requirements for existing development (contained in the *Stormwater Pollution Prevention Manual*). In addition to use in unincorporated King County, these manuals have been adopted by several incorporated cities. To reduce pollution, King County Stormwater Services also inspects many businesses each year to enforce compliance with the county's source control requirements.

Landowner incentive programs. A number of landowner incentive programs protect Puget Sound by maintaining increasing portions of the landscape in healthy forest and farmland. Through the Farmland Preservation Program, King County has acquired development rights on more than 13,000 acres of high-quality farmland. The Timber Land Program and the Public Benefit Rating System provide property tax incentives to encourage private landowners to voluntarily conserve and protect land resources, open space, and timber. In 2006, a total of 1,093 properties (10,514 acres) were enrolled in these two programs combined.

Rural, forest, and farm stewardship programs. The rural stewardship program assists property owners in meeting the high standards set by the Critical Areas Ordinance for protecting the resources on their land when the flexibility of the code is insufficient to allow reasonable development. The program has provided assistance to 84 landowners, representing 500 acres, who want to improve the resource quality of their property. The program has approved 12 rural stewardship plans on 41 acres. The county's forestry program conserves forestland and improves forest health. Through direct assistance to landowners, the program encourages forest retention and stewardship. The program has affected 11,500 acres of forestland through forest stewardship courses and approved forest stewardship plans. The forestry program is also working with communities to develop forest

fire prevention plans. The agriculture program, in partnership with the King Conservation District, encourages farmers to develop farm management plans. The program has provided cost sharing, has assisted with implementation of best management practices to improve water quality on 247 farms, and has partnered with farmers who have restored riparian areas along over six miles of the Snoqualmie River.

Environmental regulations and policies. King County Comprehensive Plan policies and supporting regulations, including the Shoreline Master Program, Critical Areas Ordinance, Drainage and Water Quality codes, and Clearing and Grading standards, all serve to protect the natural environment and preserve normative functions that keep waterways and the Puget Sound clean. King County has a long history of using best available science to establish standards and practices for its regulations. It is anticipated that continuing to update and ensure compliance with these regulations and policies will be one of the measures that the PSP uses to identify a jurisdiction's compliance with the 2020 Action Agenda.

NPDES permit for wastewater discharges to Puget Sound. King County's treatment plants and associated facilities continue to comply with the terms and conditions of their NPDES permits and so are in compliance with the Washington State Water Pollution Control Act, the Federal Water Pollution Control Act, and the Federal Clean Water Act. Despite unusually heavy storms, neither the West Point nor the South Treatment Plant experienced exceptions to NPDES secondary treatment permit limits in 2006. Both plants received the National Association of Clean Water Agencies (NACWA) Platinum Peak Performance Award for operating five consecutive years with no permit exceptions. Two new treatment plants—Brightwater and Carnation—will feature advanced technology to produce highly treated wastewater that exceeds NPDES permit limits.

Industrial Waste Program The Industrial Waste Program ensures that industries treat their wastewater for harmful substances before discharging the wastewater to sewers whose contents ultimately reach Puget Sound. In 2006, 128 permits and 302 industrial waste discharge authorizations were in effect, 376 inspections were conducted, and 70 Notices of Violation were issued. One indicator of the program's success is the reduction in the amount of mercury in biosolids produced at the county's wastewater treatment plants. The amount of mercury in the biosolids has decreased by over 50 percent since Industrial Waste began its Dental Waste Program.

Reclaimed water production, application, infrastructure planning, and construction.

In 2006, the county produced about 255 million gallons of reclaimed water for onsite use at the West Point and South Treatment Plants and for offsite uses, including habitat restoration, near the South plant. The Brightwater plant will produce water that meets state reclaimed water standards, with the goal of distributing the water to customers for reuse and reducing the volume of wastewater discharged to Puget Sound. In 2011, the Brightwater "backbone" system will be ready to convey reclaimed water west and south of the plant. The county continues to work with the state Departments of Health and Ecology to ensure that the design and construction of the backbone comply with state standards. In 2007, the county served as a co-sponsor of a Reclaimed Water Workshop. In addition, the county will produce a reclaimed water feasibility study by the end of the year that will help identify potential users, technologies, and funding sources. As a part of the study, staff met with representatives from local jurisdictions, water and sewer districts, parks, and businesses to discuss reclaimed water opportunities.

Contaminated sediment cleanup programs. King County is carrying out a sediment management plan developed in the late 1990s to clean up contaminated sediment near CSO outfalls. In mid 2007, design was completed for cleanup of the old Denny Way CSO site in Elliott Bay; cleanup is scheduled for November 2007–January 2008. The county continues to work to improve water quality in the Lower Duwamish Waterway through actions such as reducing CSOs, restoring habitats, capping and cleaning up sediments, and controlling toxicants from industries and stormwater runoff. The county

is participating in two early action sites to clean up portions of the waterway earlier than required. Post-cleanup monitoring at one of the sites is providing critical information on cleanup alternatives for the Lower Duwamish Waterway Superfund Site. The discovery of accumulations of phthalates and other chemicals during monitoring led to formation of the Sediment Phthalate Work Group, composed of representatives from EPA, Ecology, King County, and the Cities of Seattle and Tacoma, to examine the occurrence, sources, risks, receptors, source control, treatment, and regulatory aspects of phthalate sediment contamination.

Combined sewer overflow (CSO) control program. In response to the Clean Water Act of 1972, Metro adopted the Combined Sewer Overflow Program in 1979. Since adoption of this first program, Metro and then King County have prepared plans to respond to evolving CSO regulations, including the Ecology's "control" standard of no more than an average of one untreated discharge per year at each CSO location. King County's CSO facilities are regulated through West Point plant's NPDES permit. By May 2005, with completion of the Mercer/Elliott West and Henderson/Norfolk facilities, about 17 of King County's 38 CSOs were controlled. The remaining 21 uncontrolled CSOs will meet state standards between 2012 and 2030. The schedule for completing the CSO control projects was set to reflect priorities for protecting human health, the environment, and endangered species. The schedule calls for completion of the highest priority projects near Puget Sound Beaches in 2012.

Monitoring marine and freshwaters for water quality, water quantity, sediment, and biological resources. King County runs a monitoring program for freshwater streams, lakes, and rivers and for the marine waters of Puget Sound. The components of this program, along with other regional monitoring programs, are summarized in Attachment A. The program samples water quality, sediment quality, stream flow, physical properties such as temperature and weather, biological resources, and other media. While this program represents a very significant and long-standing financial contribution from King County, we recognize that in order to track our progress on achieving the PSP goals for Puget Sound by 2020, gaps in location and type of monitoring will need to be filled.

Habitat restoration. King County dedicates significant funds and effort to restoring aquatic habitats, using both local dollars and grant monies from state and federal sources. For example, in 2006, Water and Land Resources spent \$3.1 million on habitat restoration, completing over 15 projects throughout the county. Most of these projects are specifically called for in WRIA salmon conservation or other regional plans. Recent examples have included the Auburn Narrows Side Channel Connection project, which created 1,600 linear feet of off-channel habitat and 55 acres of replanted riparian areas along the Green River; the Lions Club Side Channel project along the Cedar River, which created over 30,000 square feet of side channel habitat; and the 10-acre Lower Raging River Floodplain Reconnection project. King County's Wastewater Treatment Division is also contributing substantially to habitat restoration, protection, and land conservation as a part of the mitigation program related to the development of the division's new Brightwater wastewater treatment facilities. Efforts include \$38.5 million in habitat mitigation at various sites in King and Snohomish Counties and other adjacent jurisdictions, including a 43-acre salmon habitat and reforestation area on the Brightwater site in the Little Bear Creek basin.

Habitat protection and land conservation. King County routinely acquires high-quality habitat areas as a means to protect critical resources. These acquisitions augment the landowner incentives work described above by bringing lands that are highest priority for long-term preservation into public ownership. The county's current inventory of protected lands includes 6,200 acres of ecological lands, 3,500 acres of forestry lands, and nearly 100,000 acres of conservation easements where the underlying property ownership remains in private hands but the county-owned easement precludes development. These acquisition approaches have been a priority for well over a decade, dating back to the Waterways 2000 program. In 2006, 950 acres were acquired for a total of \$8 million, using both local funding such as Conservation Futures, and a variety of state and federal grants.

Best management practices for capital and maintenance projects. KCDNRP strives to use techniques and take precautions that minimize adverse impacts to water quality and habitat. It practices environmental mitigation measures, including best management practices, that are consistent with the State Environmental Policy Act (SEPA) and incorporates these measures into design plans and construction contracts. For example, the WLRD Capital Improvements Projects group takes specific actions to minimize turbidity during construction near and in waterways, works with certified erosion control specialists, and establishes fueling pads that protect sites from any fuel contamination during equipment refueling. King County's DOT has an approved maintenance manual that establishes standards for reducing environmental risks associated with construction and maintenance.

Natural Yard Care program. The Natural Yard Care Program provides education and training to residents throughout the county. The program emphasizes the following behaviors: build healthy soil, plant right for your site, practice smart watering, think twice before using pesticides, and practice natural lawn care. Thousands of people have participated in this training over the last several years, and follow-up surveys indicate a continued improvement in and use of natural yard care practices. The program measures behavior change through several mechanisms including the Environmental Behavior Index (EBI).

Mitigation and adaptation for climate change. A King County interdepartmental group developed and presented to the Council a comprehensive *Climate Change Implementation Plan* in February 2007. The plan identifies potential impacts in King County from climate change, ranging from likely increases in stormwater and flooding resulting from increased frequency and intensity of storms, to stresses on water supplies and instream flows resulting from reduced snowpack and earlier runoff, to effects on vulnerable infrastructure resulting from rising sea levels. The plan outlines a set of mitigation and adaptation goals and strategies that will substantially reduce the county's contribution to greenhouse gas emissions in the region, achieve the goal set by the county executive of reducing emissions by 80 percent by 2050, and implement measures to anticipate and prepare for expected impacts to county facilities and programs. The mitigation strategies are focused on transportation investments, such as hybrid or clean fuel vehicles, and on trip-reduction programs. Adaptation measures include increased production and use of drought-resistant reclaimed water for nonpotable purposes, revising design standards and investment strategies for major capital projects, and generally using King County as a "living laboratory" for innovative approaches. King County is also developing information and tools—such as the just-completed "guidebook" for developing local government climate change strategies—to assist other governments and agencies in accelerating their climate change activities and planning.

Regional water supply planning. In 2005, the county signed a memorandum of understanding with Cascade Water Alliance to work together on water resource and water supply planning. The members of Cascade Water Alliance are five cities and three water utility districts in the fastest growing parts of the county, where it is critical to address the challenge of maintaining adequate water supply for people and adequate streamflows for fish. As a result of the memorandum, the county convened a multi-stakeholder group that defined technical questions that are currently being considered by seven self-selected technical committees. The reports from these committees will be analyzed and synthesized into a single report that will include recommendations on how to incorporate what has been learned in this process. One expected outcome will be for the county and Cascade Water Alliance to undertake a coordinated water system plan that will address demand and supply alternatives such as Lake Tapps and reclaimed water.

Onsite sewage program. PSP has identified the reduction of animal and human waste as a top priority. Public Health – Seattle & King County helps to ensure that over 115,000 septic systems, including 192 septic systems in Seattle, are safe. Septic systems treat wastewater when homes and

buildings are not connected to public sewer systems. Proper operation and maintenance of these systems and replacement of failing systems help reduce nutrient loading and pathogens that can impair water quality.

The PSP is in the early stages of its creation and in determining its focus areas and actions. King County expects to work closely with state and other local governments over the next one to two years to ensure that the county's programs and priorities nest within state priorities. We will work with the PSP through Action Area events, the Ecosystem Coordination Board, and the Leadership Council to bring forward our local concerns and priorities. As the PSP's Web site states, "The Partnership's first biggest task is to collaborate with governments, tribes, scientists, businesses and citizens to create that long-term plan—called the 2020 Action Agenda—by September 2008." King County anticipates contributing specific recommendations and actions for inclusion in the Action Agenda.

The PSP describes the process for creating and adopting the 2020 Action Agenda as follows:

- The law stipulates the PSP develop the Action Agenda based in part on existing plans, including those created by watershed groups and other local level processes. The PSP will organize the work of creating the Action Agenda at the local level into seven geographically diverse subregions called Action Areas.
- The PSP's executive director will then invite appropriate tribes, local governments, and watershed groups to compile existing watershed programs relating to the health of Puget Sound. Participants should work to identify applicable local plan elements, projects, and programs, together with estimated budgets, timelines, and proposed funding sources, suitable for adoption in the Action Agenda. This may include assigning priorities to plan elements, projects, and programs.
- The Leadership Council will decide on a structure and process for building the Action Agenda and organizing the seven Action Areas. The Ecosystem Coordination Board and the Science Panel will be involved as well. Public participation and input will be welcome in these decisions. The Leadership Council will consider these issues during summer 2008. A draft Action Agenda must be created, sent out for public comment, revised, and then adopted by September 2008.

KCDNRP is prepared to respond to PSP's call to action. King County has already identified a few principles to guide the development and implementation of an Action Agenda (Executive Ron Sims July 17, 2007, letter to the PSP):

- **Advance salmon recovery plan implementation.** Energize and increase the probability of achieving salmon recovery goals. Increase funding to help achieve the 10-year goals.
- **Address gaps in Chinook Recovery Plan.** Address gaps such as instream flows, habitat protection, integration of habitat, harvest and hatchery management, and adaptive management and monitoring. Respond to the listing of steelhead under the Endangered Species Act.
- **Establish and act on science priorities.** Incorporate initial analysis of monitoring programs into the broader Puget Sound-wide development of indicators and measurements of the PSP's goals for a healthy Puget Sound. KCDNRP's initial analysis of existing environmental monitoring programs conducted by King County and by state, federal, tribal and local agencies—including tentative identification of gaps in these programs—is included as Attachment A to this preliminary work plan.

In addition, it is recommended that King County representatives in the watershed forums bring forward a request and/or recommendation that these inter-jurisdictional forums dedicate time to consider how they could expand their role in coordinating and funding priority actions for Puget Sound recovery.

In the next few months, KCDNRP will be tracking PSP activity. The schedule below shows how the PSP intends to move its work program forward and, in parentheses and blue text, how King County could respond or participate in specific milestones and actions.

Schedule of Near-term PSP Activities

Fall 2007	Winter/Spring/Summer 2008
<ul style="list-style-type: none"> • Develop an organizational chart and job descriptions, and hire staff. The PSP is combining the staff and functions of the Puget Sound Action Team and the Shared Strategy and adding a number of new functions. • Recruit and convene the Ecosystem Coordination Board, composed of representatives from the Action Areas, business, environmental interests, and local, state and federal agencies. (King County may make recommendations for membership.) • Recruit and convene the Science Panel (nine members). Nominations will be made by the Washington Academy of Sciences. (King County may make recommendations for membership.) • Integrate salmon recovery functions and Shared Strategy transitions into the PSP. (King County as a participant and service provider for watershed forums will be a resource and advocate for this process.) • Conduct a programmatic review of funding needed prior to state legislative session. (King County through various avenues could advocate for reasonable appropriations to support Puget Sound recovery.) <p>Additional King County milestones:</p> <ul style="list-style-type: none"> • KCDNRP to support a multi-watershed forum event. • By January 1, 2008, KCDNRP will submit final responses to Ordinance 15869 to the King County Council. • KCDNRP to convene Puget Sound Team. 	<ul style="list-style-type: none"> • Develop the 2020 Action Agenda. The draft is due by July 2008, and adoption by Leadership Council is scheduled for September 2008. (King County will participate in regional and Action Area processes to help develop the agenda.) • Establish environmental indicators and benchmarks. This will be an iterative process, with some numerical indicators and benchmarks available immediately and others under development. Some indicators will remain in narrative form. This task is the responsibility of Science Panel, with interaction with the Ecosystem Coordination Board and Leadership Council. (King County's existing data sets can be used to support this process.) • Develop and launch an accountability process for the \$400 million state budget authorized for Puget Sound. • Develop a strategic science program, due for incorporation in the Action Agenda by July 2008. (King County's monitoring efforts will aid in identification of regional science gaps during development of this program.) • Develop a biennial budget request for the Governor and State Legislature by June 2008. • Oversee implementation of the 2007–2009 Puget Sound Conservation and Recovery Plan and state funding plan. • Develop and launch the Puget Sound Education and Outreach. (King County as a member of the ECO Network can play a role in this campaign.) <p>Additional milestones:</p> <ul style="list-style-type: none"> • Prepare a State of the Sound Report by November 2009, and each odd numbered year thereafter. • Publish a Puget Sound Update in April 2010, to be prepared by the Science Panel with staff support.

D. Preliminary plan identifying the entities and funding sources with capacity to research the role of aquatic reserves

The county will collaborate with the PSP to encourage the formation of a task force under the Ecosystem Coordination Board and the Science Panel to research both the science and policy issues related to the establishment of marine reserve areas in Puget Sound. It is recommended that this task force be led by research staff from the University of Washington's School of Marine Affairs, with assistance from other university departments, and that it include representation from the tribes, Washington State Department of Natural Resources, Washington State Department of Fish and Wildlife, Northwest Straits Commission, and local government.

It is further recommended that the task force consider models of marine reserves both in North America and elsewhere in the world, including the uses permitted in existing reserves and how both

existing and future reserves could support and balance the six goals for a healthy Puget Sound from the legislation establishing the PSP.

This work should be accomplished over the next 12–18 months in parallel with the efforts of the PSP to develop the detailed measurements and necessary actions needed to achieve its goals for a healthy Puget Sound.

SECTION 2. SUPPORT A SCIENCE-BASED ECOSYSTEM APPROACH

A. The executive and department of natural resources and parks should report to the council how King County and other local agencies will be coordinating and conducting adequate testing, monitoring and studies to support the science-based, ecosystem-wide approach to protecting and restoring the health of Puget Sound.

B. The department of natural resources and parks will prepare and submit to the council:

1. An assessment of King County's current role and responsibilities for monitoring, modeling, data management and research with regard to its water pollution abatement and water quality management responsibilities

King County has monitored the environment for over 40 years. During this time, the knowledge gained from proactive environmental assessment has resulted in more cost-effective expenditure of public funds and has helped our county avoid environmental problems and maintain public health and safety. Without the valuable baseline data collected over the past four decades, tracking progress toward long-term goals and projecting the long-term environmental response to management decisions and actions would not be possible. Consistent environmental assessment is also essential for the development and informed use of environmental indicators, such as those developed through KingStat, and of Puget Sound-wide indicators for the PSP.

The PSP calls for increased monitoring related to its six goals in order to identify problem areas, focus actions to address these problems, and then track our progress toward a healthy Puget Sound. The geographical scope of the PSP includes both marine waters and watersheds draining into Puget Sound. King County's Water and Land Resources Division (WLRD), through its existing Science, Monitoring, and Data Management Section, conducts broad environmental monitoring throughout the county. WLRD is in a technical position to fill monitoring gaps related to the PSP's six goals but will not have the financial capacity from existing King County sources to meet these needs in future years. KCDNRP will strive to obtain funding for the following regional monitoring gaps through state, federal, and private funds from the PSP:

- **Gaps in our understanding of Puget Sound and freshwater quality.** In order to prioritize actions for cleanup and prevention, the amounts and sources of pollutants from septic systems, wastewater treatment plants, and other related sources such as stormwater must be assessed. The amount and timing of flows in rivers and streams and the withdrawals or diversions from them affect habitat and contribute to water quality problems, particularly high temperatures. King County currently monitors water quality in Puget Sound monthly at six offshore outfall sites, nine offshore ambient sites, six beach outfall sites, and twenty-two beach ambient sites. In addition, King County maintains a network of freshwater sampling stations in rivers, streams, and lakes. King County, along with other federal, state, and local agencies, maintains gauges that track flows at important points in the hydrologic system and maintains a Web site that provides real-time flow data. Despite these monitoring efforts,

our understanding of water flows and water quality in both Puget Sound and freshwater environments remains incomplete because of gaps in the location and frequency of sampling.

- **Gaps in our understanding of habitat protection approaches.** We need to assess the effectiveness of actions taken to protect habitat such as the Shoreline Master Plan and Critical Areas Ordinance (CAO) in protecting important habitats that support salmon and other marine, freshwater, and upland species of concern. King County currently monitors riparian, riverine, and marine nearshore habitat and is developing a program to monitor the effectiveness of the CAO. However, more information is needed about the wildlife present and the condition of the habitat. Gaps in the location and frequency of sampling hinder our ability to better understand land uses, geological conditions, and biological resources.
- **Gaps in our understanding of toxins polluting our waters and sediments.** The amounts and sources of toxic pollution from water and air entering Puget Sound should be assessed so that prevention and cleanup actions can be prioritized to address critical problems. Additionally, much uncertainty exists in our understanding of emerging toxics issues. All of this information is critical in tracking the success of actions and making corrections to our toxics management regulations, cleanup strategies, and education efforts.

The PSP supports the issuance of NPDES municipal stormwater permits. The county's permit will require a significant amount of new monitoring, including additional water quality monitoring, to determine if desired results are being achieved. Some of this information will be gathered through our new stormwater NPDES monitoring program, but there is insufficient information on the larger geographical scale and in areas not covered by Phase 1 municipal stormwater permits.

- **Gaps in our understanding of native fish species.** While both King County and state, federal, tribal, and local jurisdictions maintain numerous monitoring activities, various studies have identified gaps in our understanding of native fish populations. For example, the Puget Sound Salmon Recovery Plan identifies the effects of freshwater and marine water quality on Chinook production and survival as an area of high uncertainty. Other identified gaps are the monitoring of instream flows, of nearshore habitat and water quality, and of the potential impacts of climate change on salmon recovery. The WRIA 8 Chinook Salmon Conservation Plan describes environmental monitoring as a basic need when working on complex problems like salmon conservation and identifies gaps in the monitoring of habitat and watershed conditions necessary to assess progress toward desired results, to determine what is working, and to adjust actions if needed.

2. A preliminary plan for working with state and federal agencies to identify additional monitoring, modeling, data management and research required to systematically monitor and measure cumulative changes to ecosystem components and their interactions

KCDNRP intends to continue King County's participation in regional Puget Sound monitoring and assessment efforts such as the Puget Sound Assessment and Monitoring Program (PSAMP), the Puget Sound Nearshore Ecosystem Restoration Program (PSNERP), and the Pacific Northwest Aquatic Monitoring Partnership (PNAMP). Nearly all of the agencies that are currently monitoring the freshwater, marine, and upland environments of Puget Sound are involved in these efforts.

Members of the county's science staff have served as core participants in these efforts and will be working to incorporate this work in the assessments and tracking needed by the PSP. In addition to existing science plans from the above groups, which are limited in scope, the PSP Science Panel will direct the development of a Puget Sound-wide science plan. King County

science and policy staff will assist in developing this plan and in ensuring that existing King County environmental information is incorporated into the plan.

3. A preliminary plan identifying the steps, investments and potential funding sources necessary to expand the current water quality monitoring network within King County that is sufficiently integrated into the Puget Sound assessment and monitoring under the auspices of the Puget Sound Partnership and based upon King County's current sampling and field data collection

A number of possible strategies exist to improve the present funding environment for King County monitoring, including the following:

- Pursuing federal, state, and private funding for regional monitoring efforts through the Puget Sound Partnership, the Puget Sound Assessment and Monitoring Program, the Puget Sound Nearshore Restoration Program, and the Pacific Northwest Aquatic Monitoring Partnership. King County's long-term participation in these groups and the added focus from the PSP should result in increased Puget Sound-wide funding.
- While the statutory possibility exists for expanding funding from existing sources such as CX funds, the wastewater fund, and the surface water management fund, each of these funds has its own unique legal and funding constraints and monitoring must compete with other demands for these funds.

4. A preliminary plan for working with state and federal agencies to identify potential science gaps and recommend research priorities for uplands and waters within King County

King County, through its membership in regional monitoring efforts identified above and its representation on the PSP and directly or indirectly on the PSP Science Panel, will be working to identify science gaps that will need to be filled in order for the PSP to track progress toward a healthy Puget Sound. The identification of these gaps and recommendation for a science plan will take place in 2007 and 2008, with the Strategic Science program adopted into the PSP Action Agenda in July 2008.

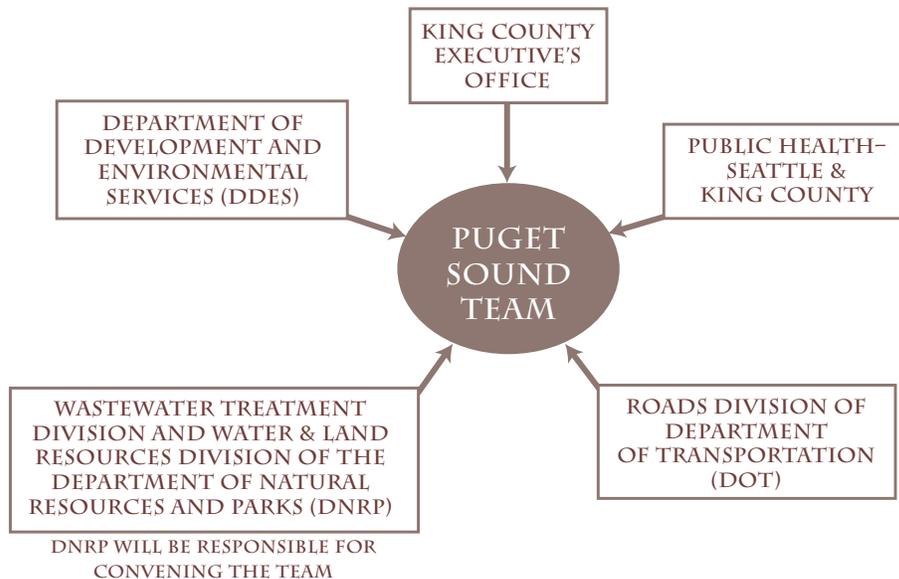
5. A preliminary list of potential projects to be nominated for inclusion in the state-sponsored Puget Sound science program and Puget Sound science activities of federal agencies that can be part of an integrated research agenda and Puget Sound science work plan

KCDNRP feels that a number of steps must take place before a meaningful list of science proposals can be developed. These steps include the appointment of the PSP Science Panel and the Ecosystem Coordination Board and the identification of measurable outcomes under the PSP goals. The next science-related step will be the development of a Science Work Plan, under the direction of the Science Panel, which will identify monitoring proposals.

SECTION 3. ANALYZE AND PROPOSE OPTIONS FOR REORGANIZATION

The executive shall analyze and propose options and recommendations for reorganization either at the executive level or within the department of natural resources and parks to create an organizational unit or division that is tasked with being the internal coordinating agency for all King County activities related to improving and restoring the health of Puget Sound.

During fall 2007, King County will establish the Puget Sound Team, an interdepartmental and interdisciplinary workgroup similar to the King County Climate Change Implementation Team. The Puget Sound Team will be charged with aligning and coordinating all of King County's work that affects the health and recovery of Puget Sound, including policy, operational, technical, and intergovernmental relations efforts. In addition, the team will have a strong communications and outreach component that will be closely coordinated with the public awareness campaign launched by the PSP. The team will include, at a minimum, staff from throughout KCDNRP (Wastewater Treatment Division, Water and Land Resources Division, and Director's Office), the Roads Division of the Department of Transportation, the Department of Development and Environmental Services, Public Health–Seattle & King County, and the Executive's Office. Other departments and divisions will be included as needed. KCDNRP will be responsible for convening and staffing the team. One of the team members, David St. John, Water Resources Special Projects Manager in the KCDNRP Director's Office, will be assigned to the PSP for 50 percent of his time during the development of the 2020 Action Agenda. The team members will be identified in October 2007 and will begin meeting as soon as feasible. The full roster of members will be included in the final work program that will be submitted to Council in January 2008.



This organizational proposal will have no impact on the budget. While the current team structure and operations will have no additional budget impacts during 2008, future budgetary impacts will be evaluated and, as appropriate, included in executive proposals for 2009 and beyond.

Similar to the county's efforts to address the impacts of climate change, many of King County's operations have a role in recovering and protecting Puget Sound. It is critical that we build stronger coordination among these existing operations rather than creating a new organization, division, or unit. The individuals who will serve on the team will all have direct responsibilities related to the

protection of Puget Sound in addition to the other duties they perform for their departments. The extent and diversity of their knowledge and responsibilities will enable them to lead and understand the complexity of actions and strategies needed to protect and recover Puget Sound.

The Puget Sound Team will structure its work to provide both technical expertise and strategic guidance to the PSP as the PSP moves forward with development of the Puget Sound-wide Action Agenda, including a timeline and implementation and funding strategies to achieve the outcomes. The team will coordinate with a number of entities:

- It will inform and be informed by the yet-to-be-appointed Ecosystem Coordination Board. The team will need to provide the Ecosystem Coordination Board with an understanding of the regulatory, operational, technical, and funding roles and responsibilities of local jurisdictions in Puget Sound's recovery and protection.
- It will coordinate closely with and participate in the Washington Association of Counties' (WSAC) Coastal Counties Caucus. This coordination will continue a successful coordination effort undertaken by King County staff during the past two years. The Coastal Counties Caucus is expected to serve in a coordinating role for counties, and the Association of Washington Cities (AWC) is expected to play a similar role for cities in the Puget Sound area. Both WSAC and AWC will nominate one member each to the Ecosystem Coordination Board.
- It will coordinate closely with the WRIA salmon recovery efforts. It is anticipated that because of their existing successful multi-jurisdictional forums, the WRIAs groups will be the primary venues for coordinating efforts with King County cities.

Meeting monthly beginning in fall 2007, King County's Puget Sound Team will focus its initial efforts on an evaluation of how it can best facilitate a close collaboration with the new PSP and on completing the final work program required by Ordinance 15869. Environmental consultant Ryan Dicks has been retained to facilitate the development of a final work program and ensure that it is integrated with the work of the PSP. In addition, the team will work with the new PSP agency and with other jurisdictions to ensure that King County's expertise and knowledge of Puget Sound are used to do the following:

- Work in partnership to identify draft 2020 Action Agenda priorities
- Set priorities for countywide projects and technical studies that will help obtain state and federal funding via PSP in the 2020 Action Agenda
- Assess the county's readiness and resources to contribute to the necessary environmental monitoring and studies that are required as part of the PSP
- Coordinate communications and meetings with PSP and local jurisdictions in King County
- Coordinate all county programs related to the restoration and protection of Puget Sound
- Collaborate strategically with the new PSP agency to evaluate new and expanded funding options and opportunities for establishing partnerships with diverse stakeholders

During the next 12 months, the team will also work in collaboration with the new PSP executive director and PSP staff to evaluate effective policy and regulatory options for Puget Sound that promote protection and recovery. The team will evaluate the extent to which such options will require policy, regulatory, or organizational changes for King County.

We look forward to a careful evaluation of this organizational structure upon completion of the 2020 Action Agenda and as the PSP moves to implement the agenda. At that time, we may determine that a different organizational structure is needed to ensure that we aggressively implement our responsibilities under the Action Agenda.

ATTACHMENT A: COMPREHENSIVE MONITORING PROGRAM SUMMARY
includes current and proposed King County activities in addition to activities external to King County

Category	Program	Summary	Current Status	Who is Currently Doing?
Atmosphere	Climate Change	UW provides substantial expertise on climate change in region. Ability to coordinate with UW and translate science is a challenge for all jurisdictions.	Ongoing work by UW. KC could use additional staff and money to address executive's initiatives.	UW, Ecology, KC, SPU, CWA, others
	Localized Weather Conditions	Weather is highly localized within King County, and varies considerably from place to place. Weather monitoring at multiple locations allows for differentiation between local weather patterns.	Insufficient coverage to understand local variability	NOAA, UW, KC, USGS, SPU
	Atmospheric Deposition	Chemical deposition from the atmosphere to the ground or to surface water bodies can represent an important pollution source and can impact stormwater quality and/or chemical bioaccumulation through the food web.	Some research ongoing, but not much.	UW, USEPA
	Air Quality	Air quality is highly localized within King County, and varies considerably from place to place. Air quality monitoring at multiple locations allows for differentiation between local conditions.	Only urban area monitoring.	PSCAA
	Data Management	Data management is an essential element of any monitoring program.	New programs would need data management.	
	Offshore Water Quality	Offshore water quality in Puget Sound is reflective of all inputs to the sound, and is indicative of overall health of Puget Sound.	12 offshore locations sampled monthly by KC.	KC, Ecology
	Shoreline Water Quality	Shoreline water quality in Puget Sound is reflective of localized inputs to the sound, and can vary considerably from place to place.	32 locations sampled monthly by KC.	KC, Ecology
Puget Sound	Food Web	Puget Sound foodweb is composed of small plants (algae), small animals (zooplankton), and larger animals. Understanding the components of the food web, and how they change with time is important to understanding the health of the sound and how it is responding to various pressures on it.	Not being done.	None

Category	Program	Summary	Current Status	Who is Currently Doing?
Puget Sound <i>continued</i>	Nearshore Habitat	The nearshore habitat is the where the greatest concentration of marine species live. These shallow waters are especially susceptible to impact from a variety of different activities and changes.	Some work on eelgrass coverage by Ecology, site-specific monitoring.	KC, Ecology
	Shoreline Habitat	Shoreline habitat reflects the upland areas immediately adjacent to Puget Sound. The shoreline habitat has substantial impact on the nearshore habitat.	Some work being done by KC, but not much else.	All local jurisdictions on PS, Ecology
	Ambient Sediment Quality	Ambient sediment quality reflects overall chemical accumulation in Puget Sound from all sources.	Conducted by Ecology.	KC, Ecology
	Urban Area Sediment Quality	Urban area sediment quality reflects sediment quality in highly urbanized areas. Sediments in these areas have historically been impacted from industrial, municipal, and stormwater discharges and activities.	Done for individual sites, but not “urban area”.	Seattle, KC, Ecology, Port of Seattle, Businesses
	Sediment Benthic Macroinvertebrates (NPDES)	Sediment benthic macroinvertebrates are part of the WTD NPDES permit for West Point.	Conducted by KC as part of monitoring program.	KC
	Sediment Benthic Macroinvertebrates (Ambient)	Sediment benthic macroinvertebrates are a valuable indicator of ecosystem health at a small scale.	Coverage lacking in many areas, some work at specific sites.	KC, Ecology
	Chemical Bioaccumulation	Chemical bioaccumulation in plant and animal tissues provides an assessment of the health of plants and animals due to chemical inputs to the sound.	Some work done by KC and WDFW.	WDFW
	Swimming Beach	Swimming beach monitoring is designed to detect potentially unhealthy levels of bacteria at swimming beaches.	Done by KC and Ecology using EPA grant.	KC, Ecology
	Harmful Algal Blooms	Harmful algal bloom monitoring is designed to track harmful algal blooms and toxin accumulation in shellfish, to help ensure safety for shellfish consumers.	Done by testing shellfish for toxins.	WDFW
	Data Management	Data management is an essential element of any monitoring program.	New programs would need data management.	

Category	Program	Summary	Current Status	Who is Currently Doing?
Freshwater	River/Stream Flow	River and stream flow is monitored to understand how basins respond to weather conditions and for floodplain and fish habitat management.	Active	USGS, Ecology, KC, SPU, other jurisdictions
	River/Stream Water Quality	River and stream water quality is directly linked to runoff from land surface.	Coverage in WRAs 8 & 9, but not in 7 or 10 or on Vashon Island by WLRD. Roads division monitoring covers entire county to assess impacts of county roads on water quality.	Ecology, KC, other jurisdictions
	Large Lake Water Quality	Large lake water quality is related to runoff from areas around the lake, and from areas feeding all tributaries draining to the lake.	Active	Ecology, KC, UW
	Small Lake Water Quality	Small lake water quality is related to runoff from areas around the lake.	Less than 30 lakes (out of several hundred) are actually monitored.	KC
	Swimming Beach	Swimming beach water quality is monitoring is designed to detect potentially unhealthy levels of bacteria at swimming beaches for the purposes of beach closures.	Done by KC using WTD funds.	KC
	Municipal Stormwater Quality	Stormwater quality monitoring is required by the new municipal NPDES stormwater permit.	Not monitored.	None
	TMDL monitoring and modeling	Total maximum daily loads are developed for impaired water bodies as authorized by the Clean Water Act. Monitoring and modeling is necessary to develop and implement plans for meeting water quality standards.	Ecology responsible for TMDLs, KC providing substantial monitoring and modeling support.	Ecology and KC
	Large Lake Food Web	Large lake foodweb is composed of small plants (algae), small animals (zooplankton), and larger animals. Understanding the components of the food web, and how they change with time is important to understanding the health of the lakes and how they are responding to various pressures on them.	Some preliminary investigations by SPU, historic data by UW, some data from KC.	SPU, UW, KC

Category	Program	Summary	Current Status	Who is Currently Doing?
Freshwater <i>continued</i>	Chemical Bioaccumulation	Chemical bioaccumulation in plant and animal tissues provides an assessment of the health of plants and animals due to chemical inputs to the lakes.	Some historic data from KC. Not currently monitored.	None
	Stream Shoreline Habitat	Shoreline habitat reflects the upland areas immediately adjacent to streams. The shoreline habitat has substantial impact on stream health.	Some data from KC, Ecology, other jurisdictions. Coordination and expansion warranted.	KC, Ecology, others
	River Floodplain Habitat	River floodplain habitat reflects the areas immediately adjacent to rivers that may occasionally flood. The floodplain habitat has substantial impact on river health.	Some data from KC, Ecology, other jurisdictions.	KC, others
	Large and Small Lake Shoreline Habitat	Shoreline habitat reflects the upland areas immediately adjacent to lakes. The shoreline habitat has substantial impact on lake health.	Limited to no data available.	None
	River and Stream Habitat	In-water habitat in rivers and streams (pools vs. riffles, LWD, shading, etc) have substantial impacts on health of the ecosystem.	Some data from restoration/construction projects. Other data collected as part of other programs (e.g., bugs).	Ecology, KC, SPU, other jurisdictions
	Stream Sediment Quality	Stream sediment quality is reflective of localized chemical inputs from surrounding land use.	Done by KC for WRIAs 8 and 9. Not done in WRIAs 7 and 10 and Vashon Island.	KC
	Large Lake Sediment Quality	Large lake sediment quality is reflective of localized chemical inputs from surrounding land use, and from overall inputs from throughout the watershed.	Done by KC every several years.	KC
	Groundwater Levels	Groundwater levels vary throughout the county, and can vary dramatically depending on pumping rates, weather and climate.	Done by KC on Vashon and Sammamish River Valley.	KC
	Groundwater Quality	Groundwater quality varies throughout the county, and can be impacted by local land use activities and natural geological conditions.	Done by KC on Vashon Island, water utilities with wells.	KC, water utilities with wells
	DNRP Facility Groundwater Quality and Quantity	Groundwater levels and quality are monitored at specific DNRP facilities, including landfills, Roads gravel yards, and the Buelah Cove wastewater treatment plant.	Conducted as required by specific DNRP divisions.	KC

Category	Program	Summary	Current Status	Who is Currently Doing?
Freshwater <i>continued</i>	Wetland	Wetlands vary in size and function throughout the county. Wetlands provide natural water storage and filtering, as well as a myriad of other functions. Wetland health is vital to the health of the hydrologic cycle.	Wetlands monitored at UPDs. Previous efforts ended in early 1990s.	KC at UPDs
	Data Management	Data management is an essential element of any monitoring program.	New programs would need data management.	
Terrestrial Habitat	Land Use and Land Cover	Understanding county-wide land use and land cover is essential to understand overall ecosystem health and land management effectiveness.	Data collected from LANDSAT images with groundtruthing.	KC
	Forest Health	Forest health is reflective of land management activities by individual landowners.	Some monitoring by large forest owners..	Private land owners.
	Invasive Plants	Invasive plants can alter the ecosystem and possibly outcompete local plants.	No ambient monitoring program in place. Noxious weeds targeted for removal based on reports of presence.	None
	Data Management	Data management is an essential element of any monitoring program.	New programs would need data management.	
Wildlife	Chinook Salmon	Chinook salmon are a listed threatened species and iconic of the region.	WDFW, KC (via KCD) do escapement estimates.	WDFW, KC
	Kokanee Salmon	Kokanee salmon are native to the major lakes and sensitive to changes in lake habitat and surrounding land use changes.	WDFW conducts monitoring.	WDFW
	Steelhead	Steelhead are native to the region and under intense pressure.	SPU, WDFW conduct monitoring.	SPU, WDFW
	Other Salmonids	Other salmonids are also sensitive to changes in habitat.	Limited to no monitoring.	WDFW
	Freshwater Fish Populations	Freshwater fish populations are reflective of overall ecosystem health.	No real monitoring program for fish population health is in existence.	None

Category	Program	Summary	Current Status	Who is Currently Doing?
Wildlife <i>continued</i>	Stream Benthic Macroinvertebrate	Stream benthic macroinvertebrate populations are indicative of overall ecosystem health.	Extensive program by KC WLRD in WRIAs 8 and 9, also by KC Roads throughout KC, also monitoring by SPU, Ecology, other jurisdictions.	KC, SPU, Ecology, other jurisdictions
	Puget Sound Fish Populations	Puget Sound fish populations are reflective of overall ecosystem health.	Some work by WDFW.	WDFW
	Amphibians	Amphibian populations are especially sensitive to a wide range of habitat changes due to their diverse habitat needs. Status of amphibian populations are an excellent indicator of ecosystem health.	Some work by KC at UPDs.	KC at UPDs
	Marine Birds	Marine birds are dependant on healthy food web and habitat.	Some work by WDFW and UW.	WDFW, UW
	Marine Mammals	Marine mammals are dependant on healthy food web and habitat.	Some work by WDFW, NOAA, and NGOs.	WDFW, NOAA, NGOs
	Terrestrial Birds	Terrestrial birds are dependant on healthy terrestrial ecosystem and food web.	Very little effort.	WDFW, Audubon
	Terrestrial Mammals	Terrestrial mammals are dependant on health terrestrial ecosystem and food web.	Very little effort.	WDFW
	Invasive Species	Invasive species may enter the county and outcompete native species.	Some work by WDFW and NGOs.	WDFW, Nature Conservancy
	Data Management	Data management is an essential element of any monitoring program.	New programs would need data management.	

Category	Program	Summary	Current Status	Who is Currently Doing?
DNRP Facilities	Groundwater Quality and Quantity	Groundwater levels and quality are monitored at specific DNRP facilities, including landfills, Roads gravel yards, and the Buelah Cove wastewater treatment plant.	Conducted as required by specific DNRP divisions.	WTD, Solid Waste, Roads
	DNRP Facility Stormwater Quality	Stormwater quality is monitored at various DNRP facilities, including landfills, Roads gravel yards, construction sites, etc.	Conducted as required by specific DNRP divisions.	KC
	Biosolids Quality	Biosolids quality is monitored to meet permit requirements.	Conducted as required by specific DNRP divisions.	WTD
	Wastewater treatment plant influent, effluent, and process control	Wastewater treatment influent, effluent, process quality is monitored to meet permit requirements.	Conducted as required by specific DNRP divisions.	WTD
	Landfill gas	Landfill gas is monitored to meet permit requirements and ensure worker health and safety.	Conducted as required by specific DNRP divisions.	Solid Waste

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