



## URBAN WATERS FEDERAL PARTNERSHIP

### Puget Sound—Green-Duwamish Watershed

#### *Letter of application*

**Executive Summary:** The Green-Duwamish watershed is an ecologically, economically, socially, and jurisdictionally diverse watershed in the Pacific Northwest. It drains over 664 square miles (including marine water area) and stretches 93 miles from the port and industrial core of Seattle, Washington through urban, urbanizing, and agricultural communities in the foothills of the Cascades, to the wilderness at the crest of the mountains in the Mt. Baker-Snoqualmie National Forest. It serves as the municipal water source for the City of Tacoma and much of south King County, and provides habitat for five species of salmon, several of which are listed under the Endangered Species Act. It also falls within the Usual and Accustomed fishing, hunting, and gathering areas of several federally recognized American Indian tribes. We propose the Green-Duwamish watershed as an Urban Waters Federal Partnership site that will build capacity for addressing complex regional



*The Green-Duwamish watershed provides diverse benefits to the Puget Sound region, such as hosting environmentally and culturally important fish species, supplying water to Tacoma, and supporting regional economic growth (photo by USFS).*

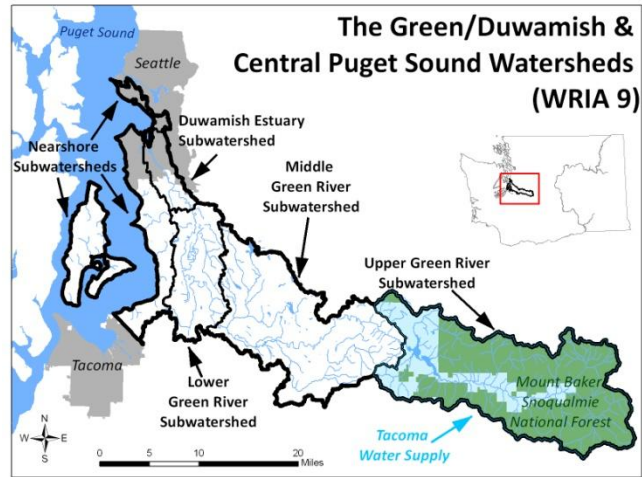
sustainability, governance and environmental justice issues in the area. Designation as an UWFP site will help leverage existing collaborative efforts and enhance inclusivity by connecting community networks. The intent of the partnership is to reveal and characterize common ground, facilitate engagement across a range of potential watershed actors, inform strategies and help to implement the tactics in these plans, and capture findings that lead to adaptive actions over time.

The proposed partnership will coordinate with the Puget Sound Federal Caucus (PSFC) and the Green Cities Research Alliance (GCRA) to demonstrate tactical implementation of locally identified priorities. The PSFC works closely with the Puget Sound Partnership, a Washington state agency created in 2007 to lead the effort to recover Puget Sound by 2020, and the Watershed Ecosystem Forum (WEF), the state-designated citizen and local government entity responsible for the recovery of threatened salmon and trout species in Water Resource Inventory Area 9. The PSFC, WEF, and GCRA share economic development, environmental justice, and overall environmental sustainability goals of the UWFP program. The watershed is located in King County, which has innovative and progressive policies for social justice measurement and performance tracking. Designation as an UWFP site will bring site-specific focus to existing efforts by creating a pilot watershed where coordinated, cross-jurisdictional program implementation can be demonstrated, tested, and monitored.



**1. Name and location of new proposed site:**

Green-Duwamish and Central Puget Sound Watershed, Washington State, Pacific Northwest. The proposed boundaries include all of the Water Resources Inventory Area (WRIA) 9, which extends from the headwaters of the Green River into Puget Sound covering Elliott Bay to the north and Vashon and Maury Islands south to Tacoma.



- Geographic diversity
- Partnership enhancement

**2. The major local needs that require this new site to be designated for the Partnership:**

Within the watershed there are over 15 cities and towns with a combined population of 690,000. In the larger Puget Sound area, the population is expected to reach seven million residents in the next 20 years. The upper Green River is the municipal watershed for the City of Tacoma, and the Green-Duwamish hosts environmentally and culturally critical fish species, such as Chinook, chum, coho, pink, and sockeye salmon, steelhead, and bull and coastal cutthroat trout. Despite the breathtaking natural beauty of the area, many of the processes supporting biodiversity and ecosystem services have been disrupted or degraded. The Lower Duwamish Waterway, the terminal end of the river, is Seattle’s only river and has been structurally altered, industrialized, and contaminated over the past two hundred years. Its banks are lined with port facilities, manufacturing plants, chemical and solid waste recycling companies, ship repair yards, and numerous combined sewer outfalls. Flanked by diverse, low-income neighborhoods where environmental pollution burdens and chronic disease incidence are high, there are numerous environmental justice issues for the long-time residents in the lower reaches of the watershed.

Degradation of habitat in the Green-Duwamish watershed and elsewhere in the region has threatened the relevance of treaty fishing rights, which led the 20 member tribes in the Puget Sound area to prepare and submit a “Treaty Rights at Risk” document to the federal government. The resulting white paper led to meetings with federal leadership, a review of existing policies and programs in the region, and new focus on the need for increased enforcement of existing habitat protection laws.

Ecological concerns led to the designation of the Lower Duwamish Waterway as a Superfund site. The site includes resources at risk such as the benthic community, flatfish, and salmon—particularly Chinook salmon, bull trout, and steelhead, which are listed as threatened under the



Endangered Species Act. Contaminants of concern include polychlorinated biphenyls (PCBs), phthalates, polycyclic aromatic hydrocarbons (PAHs), metals, pesticides, and dioxins/furans. NOAA, among other agencies, is working to improve the quality and scope of assessments in the remedial investigation, and recommends cleanup actions that will be protective in the long term and requests long term monitoring to track cleanup progress. The U.S. Fish and Wildlife Service also contributes to habitat restoration actions in the Lower Duwamish through its Natural Resources Damage Assessment work. The Natural Resource Conservation Service (NRCS) identified the following priority resource concerns for the Green-Duwamish in its State Resource Assessment 2011: water quality degradation (excessive sediment in surface water, excess nutrients in surface and ground waters), undesirable plant productivity and health, habitat degradation, excessive plant pest pressure, and pesticide transport. NRCS works in partnership with rural private landowners to address resource concerns like these.

In 2007, recognition of chronic ecological concerns led the state of Washington to establish a new state agency, the Puget Sound Partnership (PSP), to lead a collaborative effort to set priorities, spur action, and track progress to recover Puget Sound.



*The Duwamish River flows through port facilities, manufacturing plants, chemical and solid waste recycling companies, ship repair yards, and numerous combined sewer outfalls. Photo by USFS.*

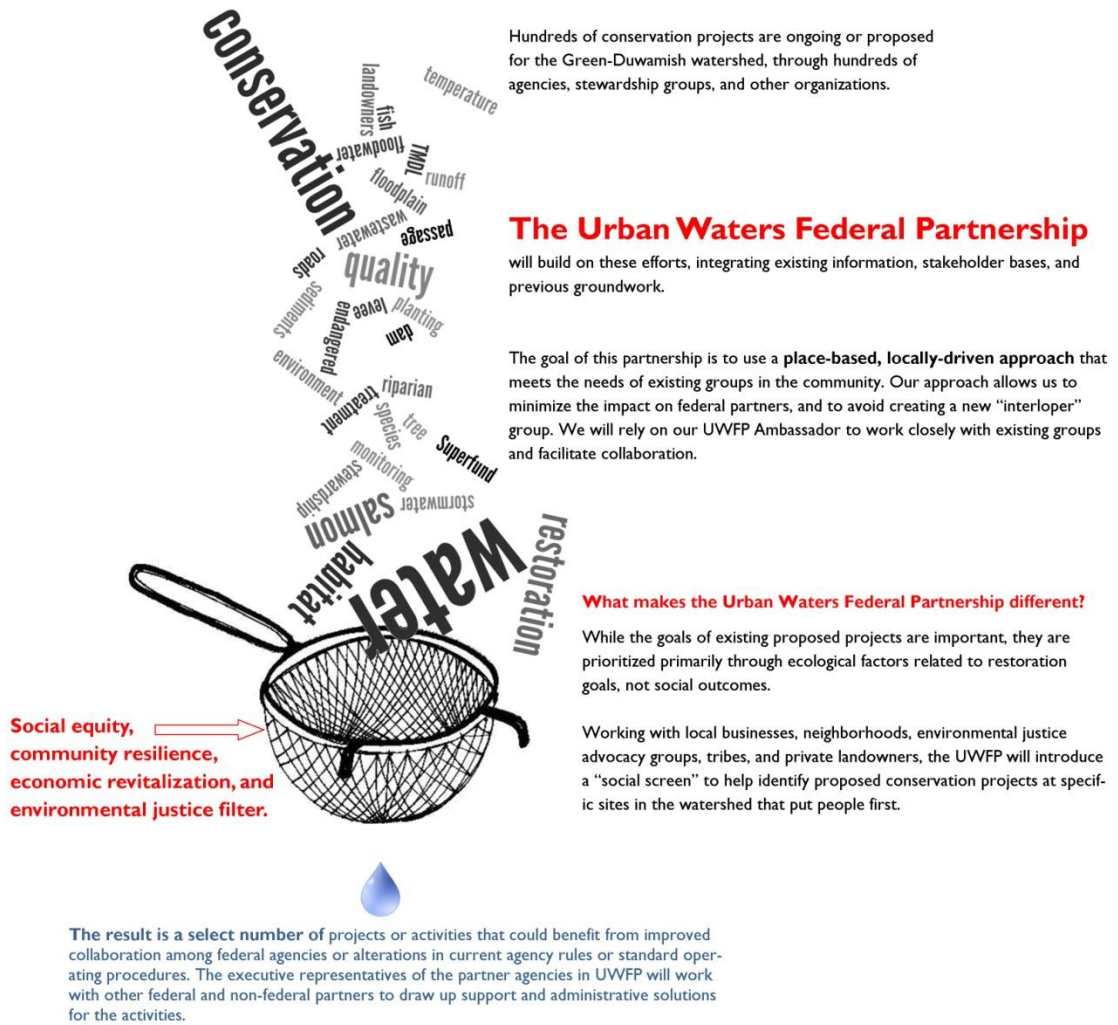
Subsequently, a joint effort between federal agencies was formed to help coordinate the work of the federal government and integrate it with the work of state agencies, tribes, local governments, and others through the PSP. The resulting partnership, called the Puget Sound Federal Caucus (PSFC), includes 14 agencies, and is led by the EPA. The PSFC worked with the PSP to develop the Action Agenda which is the watershed recovery plan for Puget Sound approved under the National Estuary Program and currently assists in the implementation of the Action Agenda.

This proposal does not duplicate the overall coordinating role of the PSP or the federal strategic partnership provided by the PSFC. This effort will provide a specific focal point for federal agencies to work with local, state and tribal partners to implement the priorities set out in the Puget Sound Action Agenda.

Currently in this watershed, there is a diverse and sometimes conflicting array of concerns and programs related to flood management, salmon habitat recovery, ecosystem restoration, noxious weed removal, and human health, economic, and environmental equity challenges.



Responding to this complexity is difficult with the many layers of special districts, city and county governments, regional planning organizations, state and federal agencies, and scores of civic and private sector actors. This UWFP can add value by serving in a vital information management role to integrate and improve our understanding of changes in social and ecological conditions in the watershed, the impacts those changes have on disenfranchised members of the community and to harmonize key actors and strengthen relationships over time that bridge the gap between the ecological restoration efforts and impacts and the social justice issues affecting specific populations in the watershed (see figure below).



This UWFP can also provide value if it helps remove barriers to implementing local priorities for recovering threatened fish species and bolster the watershed’s natural capital.

At the first meeting of the core working group (held September 25-26, 2012 at USEPA Region 10 offices in Seattle and attended by seven Federal Agencies and six state and local entities), federal agencies engaged with key local stakeholders to begin to understand the issues impacting the local communities and to discuss an effective but nimble process that would be





driven largely by local actors working through key federal agency staff facilitated by an UWFP ambassador (using funding already provided by the Green-Duwamish UWFP).

Over the next six months, we will convene a few small meetings of key stakeholders to facilitate a discussion about how to apply the vision, mission, and principles of the UWFP in our program of work. Through individual contacts by our ambassador we will also connect directly with the broader stakeholder group and begin the locally-driven process of identifying key opportunities for helping to reconnect people with their waterways. Finally, recognizing our shared trust responsibility to the tribes of the area, as well as those tribes' treaty rights, the agencies are already collaborating to ensure that meaningful government-to-government consultation occurs with those tribes. Through these methods the UWFP will identify key community-based initiatives that are ripe for quick action by streamlining and coordinating federal-level engagement.

**3. The names of at least two currently active federal agencies that can act as “champions” to advance planned goals of the new site:**

The NRCS and the Forest Service will jointly lead the Green-Duwamish Urban Waters Federal Partnership. The NRCS and USFS are committed to joining efforts through the UWFP program, which will enable both agencies to improve their capacity and better leverage their existing restoration goals.

The Forest Service and NRCS will share duties associated with chairing partnership interactions. The Forest Service will take primary responsibility for organizing interactions among the various partners. This will include convening initial meetings or conference calls, and providing summaries of discussions and decisions made during those interactions.

NRCS will take primary responsibility for outreach and public relations associated with partnership activities in the middle watershed. NRCS will also provide educational materials and, where possible, provide technical support for urban conservation activities throughout the watershed. We anticipate that initially the greatest demand for this information will be in the lower watershed but that interest will grow over time higher in the watershed.

In addition, the UWFP has entered into an agreement with an individual who will act as an UWFP ambassador for the Green-Duwamish watershed. The ambassador will be the key interface between the “champion” federal agency contacts and the local stakeholders.

After the initial organizing meetings the UWFP will take on the more “virtual” governance model. The ambassador will periodically (most likely twice a year) report to a coordinating team made up of the champion agencies (Forest Service and NRCS) and a representative of the Puget Sound Federal Caucus (currently EPA). The primary purpose of these reports is to discuss local stakeholders' initiatives with a high potential to benefit from coordinated federal actions. Members of the coordinating team will select the most promising opportunities and work



through appropriate federal and state agencies to promote a coordinated response. After one year this system will be evaluated and adjusted as necessary.

#### 4. The entities leading the application to the Urban Water Federal Partnership:

The federal partners for this project include the co-leads: USDA Forest Service, which coordinated development of this letter with participation from all three branches (R&D, State and Private Forestry, and the Mt. Baker-Snoqualmie National Forest); the USDA Natural Resources Conservation Service (NRCS); the Environmental Protection Agency (EPA), which provides the third member of the Coordinating Team and staff link to the PSFC; and the National Oceanographic and Atmospheric Administration (NOAA). In addition, the US Geological Survey (USGS) will be providing science support and will serve as a liaison to the newly initiated Floodplains by Design project described below. Discussions are also continuing with several other federal agencies such as the Bureau of Indian Affairs and the U.S. Army Corps of Engineers which has a federally-authorized Ecosystem Restoration Project in the Green-Duwamish Watershed.

The Forest Service is already leading a natural resources stewardship project called the Green Cities Research Alliance (GCRA: <http://www.fs.fed.us/pnw/research/gcra>) in the Puget Sound area, providing a springboard for launching an Urban Waters Federal Partnership. In addition to the Forest Service, the primary participants are from state and local governments, universities, and several local and regional non-profit organizations (e.g., Forterra, EarthCorps).

The UWFP offers an opportunity for the Puget Sound Federal Caucus ([http://www.epa.gov/pugetsound/pdf/PSFC\\_FactSheet\\_12June09.pdf](http://www.epa.gov/pugetsound/pdf/PSFC_FactSheet_12June09.pdf)) to align their efforts with other agencies on the Green-Duwamish watershed while focusing much needed attention on the social and environmental justice issues affecting the local communities. The Green-Duwamish UWFP, informed by routine engagement with local stakeholder groups through the ambassador, will work directly with the Puget Sound Federal Caucus to implement priorities that are jointly supportive of its ongoing efforts to improve ecological conditions across Puget Sound.

Other federal agencies have identified the Green-Duwamish as a watershed of concern and have included it in their management strategies. A cooperative effort by NOAA Fisheries Service, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, the Muckleshoot and Suquamish tribes, and 16 local governments culminated in the Green-Duwamish Ecosystem Restoration Project. This will inform and support the salmon habitat protection and restoration efforts in the Green-Duwamish and Central Puget Sound watershed (<http://www.govlink.org/watersheds/9/>).

King County's flood plan for the Green River struggles to address historical development patterns in the floodplain that present ongoing flood hazards, recreational demands, and ecological challenges. Levees and revetments in the valley have varying levels of capacity and resiliency, and infrastructure and land use decisions are best made in an integrated fashion. The



Nature Conservancy leads an effort entitled "Floodplains by Design" that will be working with agencies involved in flood mitigation, salmon recovery, water quality improvement, and emphasizing floodplain values that people care about. This project will generate greater community support and funding opportunities and will lay the foundation for achieving a triple bottom line: healthier rivers, safer rivers and communities, and greater return on the investment of public resources. The USGS (along with NOAA, FEMA and the Puget Sound Partnership) are the primary partners to The Nature Conservancy, and they will be looking for opportunities to incorporate citizen science into floodplain characterization efforts, and will act as liaison between the project and this UWFP.

In addition, the Green-Duwamish Watershed is the principal component of the Water Resource Inventory Area 9 (WRIA 9), which is part of a major interagency collaboration, called the Watershed Ecosystem Forum for WRIA 9, to implement a watershed-based habitat recovery plan. Goals of the WRIA 9 recovery plan include protecting and restoring salmon through specific achievable projects and programs that can be implemented by 2013. These projects will be directed toward restoring physical, chemical, and biological processes of freshwater, marine, and estuarine habitats; habitat connectivity; and clean water in quantities conducive to salmon recovery.

The Puget Sound Partnership (and its Federal Caucus partners) also works with the South Central Action Area Caucus, a local collaborative group, to bring together local partners to identify priorities for action to recover Puget Sound. This group has a larger geographic area (WRIA 8, WRIA 9, and WRIA 10) and a larger topical scope, including the salmon recovery and stormwater management.

##### 5. Critical planned actions that advance the *Partnership's* basic principles:

As described in Section 3, the UWFP intends to use a "virtual" organization to build on the existing work of groups like those described above by selecting a few priorities where federal coordination could really make a difference.

Our approach, shaped by local stakeholder groups, will reveal and characterize common ground in existing conservation and restoration plans and overlay the environmental justice and social equity gains that would result from those conservation actions. Our goal is a prioritized list of projects or activities that once implemented would improve the ecological, economic and social conditions across the watershed, by doing the following:

- **Promote clean urban waters.**

Specific action: *Synthesize work already underway to better understand how citizen-based stewardship activities can support broader watershed and ecosystem goals for clean water.*

Through an existing project, efforts are already underway to develop a "stewardship footprint" framework that will help establish and meet long-term watershed stewardship



goals and clean water goals of the Green-Duwamish, as well as water quality goals of the broader Puget Sound ecosystem.

- **Reconnect people to their waterways.**

Specific action: *Identify opportunities to improve use of and access to natural areas along the watershed.*

Forterra, EarthCorps, King County Natural Resources and Parks, Washington State Department of Natural Resources Urban and Community Forestry, the City of Seattle, and Seattle Public Utilities are key promoters of citizen-based stewardship activities in the neighborhoods, parks, forests, greenways, and gardens in urban areas throughout Puget Sound. The UWFP will collaborate with these groups, the University of Washington and King County GIS offices, and key local stakeholder groups, to identify specific projects that will advance this goal. This information will support President Obama's America's Great Outdoors Initiative by promoting citizen participation in stewardship and recreational activities—two important ways people connect to their waterways.

- **Use urban water systems as a way to promote economic revitalization and prosperity.**

Specific action: *Study the costs and benefits of local and regional stewardship activities.*

Each partner is working to demonstrate avenues for creating green jobs through watershed stewardship activities or citizen science projects. Establishment of an UWFP will enhance this capacity. For example, over the past two years, the Green Cities Research Alliance has developed a model of providing jobs in citizen science activities (collecting forest inventory and health data, and volunteer motivation and preference information) by engaging partners who hire project leaders and team members. Ultimately, this work will provide insights into the monetary and non-monetary values of ecosystem services provided by urban forest systems in the region.

- **Encourage community improvements through active partnerships.**

Specific action: *Work with existing local stakeholder groups to evaluate citizen-based environmental stewardship activities for best practices and test techniques for expanding existing project work and recruiting partners.*

One proposed expansion of existing work is to use geospatial tools to map the positive environmental effects of citizen-based stewardship activities, to identify gaps in existing stewardship work, and to prioritize and assist organization of future stewardship projects. Another example is to train citizen-stewardship groups to identify and map the wide range of habitats found in the riverine floodplains of Puget Sound. We also plan to elevate the contribution stewardship makes to grassroots community building and social co-benefits, such as social cohesion, empowerment, neighborliness, exercise, and public health.

- **Focus on measuring results.**

Specific action: *Use i-Tree Eco and a forest health assessment tool (Tree-age) on three scales in the county: the City of Seattle, King County park lands, and an urban-to-wildland gradient along the Green-Duwamish River.*

Given the complexity of watershed governance, there are gaps in coordinating the monitoring, tracking, and reporting of the effectiveness of actions to improve ecosystem and human and social health in the watershed. While King County, tribes, and several cities conduct assessment activities in WRIA 9, most stakeholders and actors have only





fragmented perspectives on protection and recovery effectiveness. This will help scale the findings and implications toward actors whose influences vary from region, to sub-basin, to watershed, to neighborhood or reach of the river.

Specific action: *Integrate the ongoing work of the Duwamish Health Impact Assessment.* This effort assesses key health issues affecting people who use the Duwamish Waterway or live nearby and is being led by the University of Washington’s Department of Environmental and Occupational Sciences in partnership with two local non-profits: the Duwamish River Cleanup Coalition’s Technical Advisory Group, and Just Health Action, an organization promoting health equity. The Green-Duwamish UWFP will build on and leverage the learning generated by the multitude of ongoing watershed restoration efforts.

Specific action: *Demonstrate the interconnectedness of ecosystem health, economic prosperity and quality of life in the Green-Duwamish.*

Through an agreement with Earth Economics, a non-profit research firm based in Tacoma, WA, the UWFP ambassador will work with the Watershed Ecosystem Forum to scope an appropriate and targeted ecosystem service evaluation study of the watershed that includes both economic and social indicators. Results from this research will provide a context we can use to highlight the dependency of natural systems on community stewardship. It will also serve as a basis for comparing the relative merits of different restoration approaches. For example, the relative return on investment from improving fish passage or restoring riparian habitats.

**6. What specific communities will be served within the proposed site:**

- American Indian tribes
- Densely populated river and coastal urban communities (such as Seattle, Tacoma, Kent, Auburn, and Federal Way)
- Urban communities and urbanizing areas (such as Georgetown, South Park, and Allentown on the Lower Duwamish River)
- Rural forest and farm communities in the upper valley (Enumclaw and Black Diamond)
- Economically disadvantaged communities
- Environmental justice communities
- Ethnically diverse communities
- Water Resource Inventory Area (WRIA 9) cities
- Salmon recovery community-based organizations
- Environmental Science Center and its visitors

**7. What key environmental justice issues will be addressed:**

The Green-Duwamish watershed traces a very steep urban-to-wildland gradient, and encompasses the most ethnically and economically diverse conditions found in Puget Sound. The Green (Seattle’s only river within its boundaries) and Duwamish Rivers serve as the connecting fabric, socially, culturally, economically, and ecologically of 17 local governments and hundreds of thousands of people—millions if you count the number of people who also work



and recreate in the watershed. The Tukwila School District was identified by the *New York Times* as the most diverse school district in the U.S.; and results of the 2010 census show that adjoining neighborhoods to the north of the watershed are part of the most economically and ethnically diverse zip code in the nation. Sparsely populated rural areas, urban fringe and urbanizing communities, and industrial areas at the core of the City of Seattle are all influenced by activities and water quality in the Green-Duwamish watershed.

Recent GIS mapping efforts confirm that the urban forest canopy and a range of other determinants of equity are unevenly distributed in the watershed, resulting in patterns giving affluent residents greater amenities than lower income residents. Residents of Lower Duwamish River communities of South Park and Georgetown are generally considered by federal, tribal, state, regional, and local agencies to be environmental justice communities with a suite of uneven burdens and commensurately higher mortality and morbidity rates. In addition, western Washington treaty tribes have raised serious concerns about habitat conditions, including water quality, the declining abundance of fish and wildlife resources, and access to those resources.



*The Green-Duwamish UWFP will help reconnect people to their urban waterways by identifying opportunities for citizen-based stewardship (Photo by EarthCorps).*

Throughout the Green-Duwamish watershed, community organizations, local and county governments, tribal governments and communities, and regional non-profit organizations work to address these and other aspects of environmental justice.

While Lower Duwamish River clean-up and source control activities associated with the Superfund site hold promise for reducing disproportionate exposure to toxic materials in river sediments faced by adjacent lower income neighborhoods, a wide array of other burdens like air pollution, noise, low recreational amenities, and lack of access to healthy food or education facilities extend uneven health and social outcomes.

The Green-Duwamish UWFP has begun to established ties with civic and non-governmental organizations such as Community Coalition for Environmental Justice and the Duwamish River Cleanup Coalition to understand their environmental justice concerns. Through its focus on the public values of healthy landscapes, the partnership can help assess how watershed conditions affect public health across this diverse range of communities, and investigate the relationship between urban watershed health and human well-being. To make our communities and urban areas more livable, we need a scientific understanding of how natural resource planning and stewardship can help restore the watersheds that sustain and enhance quality of life for all. UWFP designation in the Green-Duwamish may be timely as a number of the key local groups



working in the watershed are struggling to stay active in the community. We could add vital institutional capacity now and into the future.

The UWFP is working with many of these communities and groups to identify and act on situations where a concerted federal effort could make a difference. In the lower watershed issues such as access to the river, health of residents, and environmental justice have emerged as key concerns. Management of the watershed as a system from its headwaters to saltwater is another key factor. It combines environmental justice issues like healthy salmon and shellfish stocks for tribal residents with social equity issues like private landowner rights or obligations, and the public benefits of major infrastructure challenges like establishment of fish passage at the upriver Howard Hanson Dam or levee management.

It is important to recognize that this is an emerging partnership so relationships and roles are only now being established. The initial emphasis has been on gaining agreement among federal agencies on how the partnership will operate and much work remains to be done with other government entities like tribes, the state, and local governments as well as citizen groups and NGO's. Initial interest has, however, been high and positive. In the first year our ambassador will formalize ties with these groups, as previously described.

**8. What other key federal and nonfederal partners will be included:**

*Partnerships already active:*

- Watershed Ecosystem Forum for WRIA 9
- South Central Action Area Caucus
- Green Cities Research Alliance
- Earth Economics
- Forterra
- Washington State Department of Natural Resources Urban and Community Forestry
- Institute for Culture and Ecology
- Duwamish River Cleanup Coalition
- King County, Department of Natural Resources and Parks
- City of Seattle Parks and Recreation
- University of Washington
- NOAA
- US Fish and Wildlife Service

**The Watershed Ecosystem Forum for WRIA 9 includes 17 local governments:**

- Algona
- Auburn
- Black Diamond
- Burien
- Covington
- Des Moines
- Enumclaw
- Federal Way
- Kent
- King County
- Maple Valley
- Normandy Park
- Renton
- SeaTac
- Seattle
- Tacoma
- Tukwila

*Prospective partners:*

- Muckleshoot Tribe
- Puyallup Tribe
- Suquamish Tribe
- Duwamish Indians
- Puget Sound Partnership



Washington Department of Ecology  
 Washington Department of Fish and Wildlife  
 Puget Sound Sage (Seattle Alliance for Good Jobs and Housing for Everyone)  
 Just Health Action  
 Port of Seattle  
 Seattle Public Utilities  
 City of Tukwila  
 City of Tacoma  
 The Nature Conservancy  
 Middle Green River Coalition

**9. Other key points:**

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