



SUMMARY OF OUR GREEN/DUWAMISH STAKEHOLDER ENGAGEMENT

Attachment 3: Challenges and Opportunities in the Green/Duwamish Watershed

Green Duwamish Watershed Strategy – Listening Phase Findings: Challenges and Opportunities

| | Listening Phase Findings | | Pertinent Plans / Programs |
|---|--|---|---|
| | Challenges | Opportunities | (Uncommon acronyms: FbD - Floodplains by Design; NFWPCAS - National Fish, Wildlife & Plants Climate Adaptation Strategy; SCAP - Strategic Climate Action Plan; SHRP - Salmon Habitat Recovery Plan; SWIF– System Wide Improvement Framework) |
| 1 | <p>Many individuals, community groups, and government agencies are hard at work engaging in restoration and conservation efforts across the watershed. Much of this work is piecemeal, with limited opportunities for coordination and communication among the various efforts.</p> <ul style="list-style-type: none"> - Current restoration and conservation efforts work with present-day conditions, but climate change has the potential to further exacerbate factors of species decline. - Most of previous environmental efforts have focused on salmon, particularly Chinook salmon. While these are significant endeavors, there are other resource management objectives besides habitat conservation, such as improved water quality, climate change adaptation, flood hazard reduction, heat reduction, etc. | <p>Create a watershed-wide biodiversity plan. Fund and support a process for biodiversity analysis and planning. May include:</p> <ul style="list-style-type: none"> - Investigate the possibility of a Puget Sound Partnership division (similar to how watershed and river planning was accomplished in Vancouver, BC) or a Duwamish Coalition to coordinate all efforts within the Green-Duwamish Watershed. Include cultural restoration and acquisition strategy. - Investigate and make clear the compounding impacts of growth with climate change on biodiversity. Share with agencies and the public. - Bring transportation into the conversation about biodiversity. - Address regional aspects of open space/ecological issues beyond salmon recovery, including: aquatic systems performance, terrestrial and avian species, air and water quality, invasive species, native soils conservation, etc. | <ul style="list-style-type: none"> • Green Cities Program (Forterra, Seattle, and Kent, 2004) • King County Open Space Plan: Parks, Trails, and Natural Areas (2010) • South Park Green Space Vision Plan (Seattle Parks Foundation, 2014) • National Fish, Wildlife, & Plants Climate Adaptation Strategy (USFWS, 2012) • Climate Adaptation Plan (USDA, 2014) • Cascade Agenda (Forterra, 2005) • Regional Trails Needs Report (KC, 2012) • SHRP (WRIA 9, 2005) • SWIF (KC Flood Control District, forthcoming) • Floodplains by Design (DOE + TNC + PSP, 2013) • Flood Hazard Management Plan (King County Flood Control District, 2013) • NPDES – TMDL Water Quality Improvement Projects (EPA + DOE) • Duwamish Valley Vision (DRCC, 2009) • Healthy River / Healthy Communities Project (DRCC) • Puget Sound Partnership • King County Biodiversity Report (2008) |
| 2 | <p>There are numerous environmental protection and enhancement efforts throughout the watershed but no clear picture or analytical evaluation of how they all add up. The public needs to know what is important, what is being done, and what requires additional attention in order to make good public decisions. The region's natural resources are an important part of Puget Sound's sense of identity.</p> | <p>Provide the public with a clear picture of the interconnectedness between different ecological systems, geographic areas (air, land, water) and open space enhancement and restoration efforts.</p> <p>This might be done through graphics, open space services analysis, and narrative stories. Explore methods to engage and educate the public about the threats and opportunities within the Green-Duwamish Watershed.</p> <p>Participants mentioned the need for a “road show” to be able to present to communities, businesses, and decision makers to improve understanding of the issue of multiple uncoordinated efforts. This could clarify the connection between the actual health of the region's natural resources, its livability, and its perceived identity, through compelling explanation of interconnectedness.</p> | <ul style="list-style-type: none"> • This is a communications effort that could be associate all of the plans and programs available. • The EPA ROD and SHRP are the two most intensive actions within the watershed that need clarification for the public. Illustrating how other plans work alongside – or counter – to those efforts would be informative. • SWIF and FbD bring together disparate groups – are aimed at coordination, and so could offer good models for how to communicate across the spectrum of interests. • Community planning efforts such as the Duwamish Valley Vision and the South Park Green Space Vision Plan, in order to see what communities value as far as nature amenities in their built environments. • For insight into how environmental assets benefit the economy, Vision 2040 and the PSRC Regional Economic Strategy could be informative. |

Green Duwamish Watershed Strategy – Listening Phase Findings: Challenges and Opportunities

| | Listening Phase Findings | | Pertinent Plans / Programs |
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| 3 | <p>Numerous community groups are initiating restoration activities such as invasive species removal, tree planting, etc. These types of groups are looking for additional support to provide education, technical assistance, and financial incentives for restoration work and ecologically protective land use actions.</p> <p>Furthermore, many of these restoration activities tend to happen in isolated groups. There is not a well-established avenue for shared knowledge among like-minded groups spread across the watershed. One group is starting this effort - the Green/Duwamish River Coalition.</p> | <p>Foster a watershed-wide coalition of local groups promoting and facilitating ecological restoration projects and ecologically responsible land use actions. Such a coalition might pool resources to employ staff that could apply and lobby for funds, provide technical assistance, communicate the groups' efforts, etc. The coalition might provide the start for an impactful organization like Portland Metro Intertwine. The Green/Duwamish River Coalition should be consulted or considered for this role.</p> | <ul style="list-style-type: none"> • SHRP • Puget Sound Partnership |
| 4 | <p>The Green-Duwamish River valley is bounded by relatively steep slopes resulting from glacial and flood erosion. These steep slopes are often forested to form greenbelts and provide habitat and other ecological functions. (For instance there is an almost continuous greenbelt along the valley's western margin from Algonia to West Seattle.) There have been community-based efforts to restore some of the stream corridors running off the uplands and through the greenbelts. Some tributaries, and stream headwaters (e.g.: Soos Creek), however, have not had sufficient attention with regard to conserving and enhancing biodiversity.</p> | <p>Expand and restore greenbelts along valley side slopes, and potentially restore vegetated riparian corridors from residential uplands through industrial areas, would provide substantial environmental benefits such as wildlife corridors, stormwater management, and water quality improvement.</p> <ul style="list-style-type: none"> - Enhance and protect stream corridors. - Compile an inventory of all creeks and streams in the watershed. - Increase connectivity throughout the watershed, particularly among already protected, public lands. This connectivity will allow for greater flow of habitat and species. | <ul style="list-style-type: none"> • King County Regional Trails Needs Report • King County Open Space Pla • Duwamish Valley Vision • South Park Green Space Vision Plan • Regional Trails Needs Report • Cascade Agenda • SHRP • Floodplains by Design |

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| 5 | <p>Stormwater and its effects on aquatic systems are critically important. Upstream management practices have an effect downstream, across jurisdictional boundaries and land uses. Water quality issues (e.g. river temperature and pollution) have a direct impact on biodiversity and can be dictated by stormwater.</p> <p>Stormwater management, especially requirements for on-site treatment and percolation, is a challenge for many businesses in the lower Duwamish, and complying with new regulations can be costly. So far regulating agencies have used stringent “stick” approaches. Green infrastructure and regional approaches might balance this with some “carrots” or at least more flexible options. Business owners also cite perceived arbitrary enforcement and rules that are not streamlined, or easy to follow.</p> <p>In recent history there has been little coordination, much less a unified direction on environmental management (including stormwater), storm surge measures, or use of green infrastructure in the lower Duwamish. Nor is there a clear “vision” for upgrading industrial lands infrastructure or private properties. There is a question as to the best way to encourage industrial uses by providing better infrastructure support while limiting costs, particularly to smaller businesses.</p> | <p>Initiate a watershed-wide stormwater management strategy. Identify and coordinate current efforts. Summarize what is known about stormwater issues and current programs at a watershed-wide scale. Examine the issue comprehensively in terms of geography, management practices (e.g.: green infrastructure.) Focus on watershed wide measures, such as off-site mitigation. Integrate with other objectives including habitat restoration and recreation. Investigate the implications of the Stormwater Action Program combining WRIA’s 8, 9, and 10. Identify benchmarks, metrics and monitoring. Identify implementation measures and organizational requirements.</p> <p>Explore new tools for handling stormwater, including on-site and off-site mitigation techniques, and potential collaborative approaches that are especially appropriate within the watershed. An idea to explore might be a stormwater management credit system in which credits could be transferred to off-site locations. Work with Manufacturing & Industrial Council (MIC) to identify industrial area solutions. Identify ways to bring more clarity and predictability to enforcement. Look to TPL tool for opportunities to incentivize businesses to engage in environmental interventions onsite. Explore opportunities for GSI & LID.</p> <p>Initiate a collaborative effort to address the common issues of stormwater, storm surge protection, flooding, development mitigation requirements, and provision of infrastructure, especially in the Duwamish & Lower Green. Identify opportunities to combine measures to address these multiple challenges. Some are already attempting to form a group to consider this. Ensure consistency with industrial lands policies and include the perspectives of industrial businesses, including the Port of Seattle. Also, the implications of industrial lands investment strategies need to be considered on a highly localized basis.</p> | <ul style="list-style-type: none"> • SCAP (KC) • Green Cities Program • King County Open Space Plan • South Park Green Space Vision Plan for the Duwamish Valley Vision and Healthy River / Healthy Communities. • Climate Action Plan (Seattle, 2013) • King County Regional Trails Needs Report • SHRP • EPA ROD • SWIF • Floodplains by Design • FHM • TMDL • Growing Transit Communities • Regional Economic Strategies |

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| | Challenges | Opportunities | |
| 6 | Periodically parcels become available for sale which communities would like to see go into conservation. Right now there is no clear plan to determine if acquiring those properties are an appropriate investment. | Investigate the potential of a watershed-wide open space plan that prioritizes the types and general location of areas to be acquired for multiple benefits. Example components could include exploring and identifying ways to support ongoing efforts to protect public lands and maintain or create public access. In order to engender public support for these processes, stipulate that existing public lands be conserved, and provide public access to these lands. Such access should be easy to use, and available to multiple types of users. | <ul style="list-style-type: none"> • King County Open Space Plan • South Park Green Space Vision Plan • National Fish, Wildlife, & Plants Climate Adaptation Strategy (USFWS) • Climate Change Adaptation Policy Statement (FEMA) • Vision 2040 • Cascade Agenda • SHRP • Communities of Opportunity |
| 7 | The combined effect of current stormwater regulation (NPDES, local development controls, etc.) is insufficient to reach water quality goals. Additional regulations and/or incentives applicable to existing private land uses are needed. | Investigate models and opportunities to educate and incentivize landowners to take up water quality interventions on their own property. Examine ways of cultivating ownership for outcomes among private landowners. Strive to understand these populations and their needs, what would incentivize them to take action. Provide cost-sharing opportunities. King Conservation District does this work already with farmers; Seattle and King County does this through Rain Wise in Seattle where CSOs are concerned. To make greater progress, more action must be taken not only by King County and Seattle government but also by the county's residents, businesses, local governments and others. | <ul style="list-style-type: none"> • PSCAA • SCAP (KC) • Green Cities Program • FEMA Climate Change Adaptation Policy Statement • SHRP • EPA ROD • TMDL • HR / HC |
| 8 | Many small farmers and property owners do not believe they benefit from King County's transfer of development rights (TDR) program because purchasers want to deal in large quantities of credits (28+ acres). | Explore possibilities of expanding awareness and use of King County TDR Bank and Clearinghouse for bundling TDR credits to form an attractive offering to large developers. | <ul style="list-style-type: none"> • King County Open Space Plan • NFWPCAS • Vision 2040 • Cascade Agenda • SHRP • SWIF • Floodplains by Design • Flood Hazard Management Plan • TMDL • King County TDR Program |

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| 9 | <p>Pollutant Loading Assessment (PLA) goals vary across the watershed and measuring outcomes is difficult. There are varying processes and no commonly used indicators or BMPs.</p> <p>Ecology recognizes the need for common sampling protocols and is working on creating them. A problem is that when the protocols are created, Ecology can recommend that people use them across the watershed, but they cannot compel adherence.</p> | <p>Investigate the feasibility of a common Pollutant Loading Assessment (PLA) model for use across the watershed, such as that used by the Delaware River Basin Commission.</p> | <ul style="list-style-type: none"> • TMDL • SHRP • EPA ROD • Ecology PLA |
| 10 | <p>In the upper watershed, one challenge is the sheer number (or miles) of roads. These forest roads should be maintained or destroyed. Both sides of the argument were heard at the open houses. Maintenance of these roads can help increase access to public space, although removing roads can help restore natural stream and ecosystem networks. Roads contribute sediment to streams and direct water to ditches which creates higher peak flows.</p> | <p>Establish an inventory of forest roads and carefully consider which roads are important to allow for public access to open spaces, and which could better serve the watershed by being removed.</p> <p>Coordinate with the US Forest Service, State DNR, and private landowners to identify which roads could be closed (obliterated, not just gated) to allow restoration of natural processes. The Upper watershed has best opportunity for real restoration, and doing projects in the right sequence is important. Jurisdictions should analyze environmental impact during development or conversion.</p> | <ul style="list-style-type: none"> • King County Open Space Plan • National Fish, Wildlife and Plants Climate Adaptation Strategy • Cascade Agenda • SHRP • EPA ROD • TMDL • State Forest Practices Act Rules for road maintenance, abandonment, maps, and audits • King County Forestry Program • US Forest Service |
| 11 | <p>SWIF is complicated, and it appears as if there is no one group that is taking the lead.</p> <p>Because of intensive development, run-off, levees and flood hazard issues, the lower Green River requires additional attention. For instance, much of the Kent industrial area is in the 100-year flood plain. Considerable work has been done on these flooding issues, but difficult issues remain, especially from Southcenter to the confluence with the Black River. The Army Corps of Engineers is working on levee improvements.</p> <p>There is a tension between flood control levees to protect development, and protection of riparian areas and floodplain areas.</p> | <p>Explore whether SWIF process can facilitate multiple benefits beyond flood protection. Support SWIF effort to maximize opportunities for multiple objectives including habitat, recreation, and agriculture. Support integrated river and flood plain management. Current Corps of Engineers plans could be examined, to identify if there are any circumstances where planting of appropriate vegetation on levees could be encouraged. Investigate the benefits of structural versus natural policies to control flooding.</p> | <ul style="list-style-type: none"> • SCAP (KC) • King County Open Space Plan • SHRP • EPA ROD • SWIF • Floodplains by Design • Flood Hazard Management Plan (KC) • TMDL • State Forest Practices Act Rules |

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| | Challenges | Opportunities | |
| 12 | Vegetated patches and corridors are key habitat and movement routes. Mature trees play an important ecological role. While many municipalities have urban forestry programs, others do not. | Investigate how urban forestry can play a role in the Watershed Strategy. It may be that a watershed-wide or regional monitoring effort would be useful. Or there may be municipalities that cannot afford an urban forestry program on their own but might join with other jurisdictions to establish a multi-city program in which costs for a forester and crew could be shared. | <ul style="list-style-type: none"> • SCAP (KC) • Green Cities Program • King County Open Space Plan • South Park Green Space Vision Plan • NFWPCAS • Climate Action Plan (Seattle) • SHRP • EPA ROD • SWIF • Floodplains by Design • Flood Hazard Management Plan • TMDL • Duwamish Valley Vision (DRCC) • Communities of Opportunity • Equity & Environment Initiative • South Park Green Spaces Vision Plan |
| 13 | Invasive species management is variable across the watershed – varying by jurisdiction and resource availability. | Investigate the potential for a watershed-wide invasive species management plan. | <ul style="list-style-type: none"> • Green Cities Program • King County Open Space Plan • NFWPCAS • Cascade Agenda • Regional Trails Needs Report • SWIF • King County Noxious Weeds Strategy |

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| 14 | Lower Duwamish waterway industry and commerce land uses do not provide enough riparian buffering for healthful ecosystem functionality in the area. It has also been reported that there is very little land for open space, or even vegetation planting, in the lower Duwamish Valley. | Map opportunities for open space in the lower Duwamish, and explore opportunities to pursue innovative multifunctional open space and stormwater management practices. Because of the deficit in open space, the lack of access in local communities, and the other environmental issues and activities in the lower Duwamish, the need for coordination may rise to a level needing regional attention. Evaluate opportunities for including wider restored riparian buffers in commercial development projects in the lower Duwamish area. | <ul style="list-style-type: none"> • SCAP (KC) • Green Cities Program • King County Open Space Plan • South Park Green Space Vision Plan • Regional Trails Needs Report (KC) • SHRP • EPA ROD • SWIF • Floodplains by Design • Flood Hazard Management Plan • TMDL • Duwamish Valley Vision (DRCC) • Communities of Opportunity • Race and Social Justice Initiative (Seattle) • Equity & Environment (Seattle) • Duwamish Valley Healthy Communities Project (DRCC) • WRIA 9 Blueprint |
| 15 | While the Upper Green River corridor is largely in public ownership, and actively stewarded for ecosystem health and biodiversity, there are still some missing pieces along the river. King County, the State, NGOs and their partners are working to acquire these missing links. | Identify ways to support ongoing efforts to acquire missing links in the public property ownership along the Middle and Upper Green River reach. May include strengthening partnerships, building awareness, funding ideas, long-term stewardship tools, etc. | <ul style="list-style-type: none"> • SCAP (KC) • King County Open Space Plan • NFWPCAS • Cascade Agenda • SHRP |
| 16 | <p>The Cristy Creek drainage which includes Bass, Beaver, and Sinkhole Lakes, is an area with unusually high biodiversity and includes a spruce bog. King County and conservation advocates have been working to acquire this drainage and construct a nature trail.</p> <p>The Icy Creek drainage is important for water quality as it delivers very cold and pure water to the river. It also is an important spawning creek.</p> | Identify ways to support ongoing King Co. (et. al.) efforts to acquire property areas with high biodiversity such as the Cristy Creek Drainage and Icy Creek Drainage. | <ul style="list-style-type: none"> • King County Open Space Plan • Outdoor Recreation in Washington • NFWPCAS • Cascade Agenda • Regional Trails Needs Report • SHRP • SWIF • Floodplains by Design • Flood Hazard Management Plan • TMDL |

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| | Challenges | Opportunities | |
| 17 | The Newaukum Creek Drainage produces very cold and clear water that is important for water quality downstream. It also features a mix of natural areas, agricultural lands, and new development. The ecological functions provided by the sub-basin could be better protected and enhanced by protecting stream corridors and improving drainage methods. | Explore a comprehensive approach to protecting and enhancing the ecological functions of the Newaukum Creek sub-basin (part of the Enumclaw Plateau). Such an effort could be a potential model for other sub-basins in Puget Sound. Measures might include: - Compensating farmers for setting back grazing and harvesting from stream corridors. - Exploring agroforestry techniques. - Improving drainage ditch maintenance procedures. - Increase communication with farmers to address regulatory issues. - Identifying alternate drainage methods. | <ul style="list-style-type: none"> • King County Open Space Plan • Outdoor Recreation in Washington • NFWPCAS • Cascade Agenda • Regional Trails Needs Report • SHRP • SWIF • Floodplains by Design • Flood Hazard Management Plan • TMDL |
| 18 | Longfellow Creek should be addressed in a comprehensive manner, to include hydrology issues (Roxhill Bog), fish passage, health of stream (stormwater runoff), and habitat. This is the main and only salmon spawning stream on the Duwamish apart from Hamm Creek. | Conduct an in-depth examination of Longfellow Creek within the greater comprehensive Green-Duwamish Watershed. | <ul style="list-style-type: none"> • King County Open Space Plan • Outdoor Recreation in Washington • NFWPCAS • Cascade Agenda • Regional Trails Needs Report • SHRP • SWIF • Floodplains by Design • Flood Hazard Management Plan • TMDL |
| 19 | The middle and upper reaches of the Green River are a critical biodiversity resource, play an important role in water quality, are a potential recreational asset, include viable agricultural and forestry activities, and are experiencing rapid development. There is a need to address these issues comprehensively. | Explore the concept of a “Mountains to Valley Commission” (with a framework something like the Columbia Gorge Commission) that provides coordinated direction for land use, environmental management, community and economic development, and recreational issues. | <ul style="list-style-type: none"> • King County Open Space Plan • Outdoor Recreation in Washington • NFWPCAS • Cascade Agenda • Regional Trails Needs Report • SHRP • SWIF • Floodplains by Design • Flood Hazard Management Plan • TMDL |

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| | Challenges | Opportunities | |
| 20 | The Green River Gorge between Flaming Geyser and Kanaskat-Palmer State Parks is a beautiful, one-of-a-kind natural resource that is largely protected State lands, but is generally inaccessible. It could be a unique recreation and education attraction if a trail could be established. Citizen groups, King County, and the State have been working on proposals to establish a “Hanging Gardens” State Park and nearly achieved that goal before funding was no longer available. | Work with appropriate groups (e.g.: Green Duwamish Watershed Alliance), King County and the State to identify how to restart the Hanging Gardens State Park initiative. | <ul style="list-style-type: none"> • King County Open Space Plan • Outdoor Recreation in Washington • NFWPCAS • Cascade Agenda • Regional Trails Needs Report • SHRP • SWIF • Floodplains by Design • Flood Hazard Management Plan • TMDL |
| 21 | While the maps of flood prone areas do not show many at-risk areas in the lower Duwamish, storm surge does present a potential risk to a much larger area. King County, USGS and EPA are coordinating a coalition of local business owners, the Port of Seattle, etc. to address this issue collaboratively. | Contact people working on storm surge issues and identify opportunities for open space measures to be part of the solution. It may be that natural areas with flood storage capacity might help in this regard. “Bayous” in Fort Lauderdale, FL offer an example. Copenhagen, DK is also installing “climate-proof parks.” | <ul style="list-style-type: none"> • SCAP (KC) • King County Open Space Plan • South Park Green Space Vision Plan • Climate Action Plan (Seattle) • Duwamish Valley Vision (DRCC) • Vision 2040 (PSRC) • Regional Economic Strategy (PSRC) |
| 22 | There are several priority actions that could be taken to reduce greenhouse gases in the watershed, including reducing vehicle miles traveled, conserving wetlands, generating low-carbon heating and electricity, conserving and planting forests, supporting local agriculture, using urban forests for cooling, conserving soil carbon, the provision of better transit, discouraging idling vehicles, installing green roofs on big box buildings, and promoting alternative modes of transportation. | Incorporate priority Greenhouse Gas Reduction actions into the Green-Duwamish Watershed Strategy. Similarly, encourage the inclusion of these priority actions as specific recommendations within city-wide climate change action plans. Providing concrete recommendations may promote more individual action toward reducing greenhouse gas emissions, and thus mitigating climate change. | <ul style="list-style-type: none"> • SCAP (KC) • Climate Action Plan (Seattle) • Puget Sound Clean Air Agency Strategic Plan • Puget Sound Clean Air Agency Highly Impacted Communities |

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| | Challenges | Opportunities | |
| 23 | The over-arching farmland conservation challenge is in answer the question of how to prevent development of farmland when the land is worth as little as \$40k/acre if developed and only \$12k/acre as farmland. Purchase of development rights or paying for development “credits” (e.g.: stormwater credits) is currently the most effective means of compensating farmers for the services they provide in addition to food production. But to justify this expenditure, it is necessary to document and monetize the benefits different forms of agriculture provide in different situations. | Develop tools to evaluate the open space benefits of agricultural land, and working forest lands in the Green Duwamish Watershed. Investigate the feasibility of creating agricultural incentives to farmers and stop development of farm land to increase agricultural production in the watershed. The need for this information, as noted by the Farmland Trust, provides impetus for the ROSS open space services analysis. Coordinate with King Conservation District (KCD). | <ul style="list-style-type: none"> • PSCAA Strategic Plan • King County Open Space Plan • NFWPCAS • Vision 2040 • Cascade Agenda • SHRP • TMDL |
| 24 | The research in Phase 1 did not cover the forest practices industry, which is a key economic component. | Encourage more forestry industry representation and forest practice manager participation in the Watershed Strategy to assist in identifying issues and opportunities in that economic sector. | <ul style="list-style-type: none"> • Green Cities Program • NFWPCAS • Cascade Agenda • PSRC Regional Economic Strategy |
| 25 | Wider stream corridor and wetland buffers and other environmental regulations take away productive land from farmers. King Conservation District facilitates much of this kind of work. | Find a way to compensate farmers for the loss of farmland due to environmental regulations and reduce economic impacts to farmers. This might be done as part of a model effort within the Newaukum Creek sub-basin. | <ul style="list-style-type: none"> • SHRP • EPA ROD • SWIF • Floodplains by Design • Flood Hazard Management Plan • TMDL |
| 26 | New “agroforestry” techniques for planting “creek friendly” harvestable crops (or plants which contribute to harvestable crops) near streams are emerging. There might be some application for such practices in the Green River Watershed. | Explore possible application of agroforestry in the watershed. | <ul style="list-style-type: none"> • Green Cities Program • King County Open Space Plan • South Park Green Space Vision Plan • Cascade Agenda • Duwamish Valley Vision (DRCC) • King County Jobs Initiative • PSRC Regional Economic Strategy |
| 27 | Timber harvest practices may not be directly aligned with need for air quality improvements. Trees help clean air – make connections between existing capacity of forests and current and future needs. | Investigate current timber harvest practices. Facilitate multi-stakeholder cooperation concerning the diversification of forest assets in the watershed. Potential groups to bring to the table include the Forest Service as well as cities and their urban forestry staff, and private landowners. Educating private landowners on how to ecological thin their land, for instance, could provide them with an economic incentive to participate, and produce an environmental benefit. | <ul style="list-style-type: none"> • PSCAA Strategic Plan • King County Open Space Plan • NFWPCAS • Vision 2040 • Cascade Agenda • SHRP • TMDL |

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| | Challenges | Opportunities | |
| 28 | <p>Measures to address social equity must be based on local values. A regional trail may not be the local community's priority. Often marginalized communities do not have the wherewithal to actively lobby for open space and other public resources. Much of this research and engagement has already been conducted within the watershed. Oftentimes park and open space use is narrowly understood - there is a profound diversity of open space use that needs to be taken into consideration during planning and design efforts. Inequities must be remedied upstream of conditions on the ground – this means focusing on communities rather than individuals.</p> | <p>Addressing local needs in regional planning may be done best through policy and program measures. The Watershed Strategy might include county-wide policy recommendations for more active local involvement or EIR-type analysis in parks and open space planning. The Watershed Strategy team could investigate watershed-wide policy and program recommendations to ensure that decisions related to open space enhancements are made equitably.</p> <p>Highlight the work already done with respect to community outreach and engagement. Make use of research and findings from previous efforts. Identify opportunities for prevention of equity concerns, rather than remedies once they occur.</p> | <ul style="list-style-type: none"> • Green Cities Program • King County Open Space Plan • Outdoor Recreation in Washington • South Park Green Space Vision Plan • State Action Plan to Eliminate Health Disparities • Duwamish Valley Vision (DRCC) • Communities of Opportunity • Equity & Environment Initiative (Seattle) • Duwamish Valley Healthy Communities Project (DRCC) |
| 29 | <p>There is a disconnection between efforts to enhance air/land/water quality "for all" and broader social/economic regional issues that will determine who "all" is. If some people cannot earn a decent living wage, afford housing, or have meaningful access to public transportation, then they may not be able to remain or live in Seattle and other areas close to natural attributes of the watershed. Ecosystem enhancements could become societal benefits that disproportionately serve economically privileged populations.</p> <p>The maintenance and access to existing park facilities in the City of Kent, for example, is deteriorating, especially within vulnerable communities.</p> | <p>Investigate methods to ensure that open spaces are spread equitably among the watershed. The watershed initiative will be strengthened by active efforts to coordinate the watershed initiative with other city, county or regional initiatives for equitable enhancements. The watershed strategy use the County Equity Impact Review tool in early scoping and throughout all later strategy phases.</p> <p>Investigate funding sources for cities trying to maintain open spaces. Facilitate meetings between cities, counties, the State, and the public to brainstorm methods to protect open spaces and improve access for all stakeholders.</p> | <ul style="list-style-type: none"> • Green Cities Program • King County Open Space Plan • Outdoor Recreation in Washington • South Park Green Space Vision Plan • State Action Plan to Eliminate Health Disparities • Duwamish Valley Vision (DRCC) • Communities of Opportunity • Equity & Environment Initiative (Seattle) • Duwamish Valley Healthy Communities Project (DRCC) |
| 30 | <p>There is a lack of cohesive community initiative to protect and enhance environmental conditions within some subwatersheds, with the Middle Green subwatershed offering a compelling example.</p> | <p>Identify opportunities for community outreach and coalition building to support awareness and activism for the Green-Duwamish Watershed and to keep this topic at the forefront of civic leaders. Identify how conditions in the upper watershed impact communities lower in the watershed. Facilitate communication of these impacts to and across communities within the watershed.</p> | <ul style="list-style-type: none"> • Green Cities Program • South Park Green Space Vision Plan • Duwamish Valley Vision (DRCC) • Duwamish Valley Healthy Communities Project (DRCC) |

Green Duwamish Watershed Strategy – Listening Phase Findings: Challenges and Opportunities

| | Listening Phase Findings | | Pertinent Plans / Programs (Uncommon acronyms: FbD - Floodplains by Design; NFWPCAS - National Fish, Wildlife & Plants Climate Adaptation Strategy; SCAP - Strategic Climate Action Plan; SHRP - Salmon Habitat Recovery Plan; SWIF– System Wide Improvement Framework) |
|----|---|--|--|
| | Challenges | Opportunities | |
| 31 | Many small farmers feel that permitting agencies unfairly target them over larger property owners. | Further explore farmers’ perceptions of permitting agencies’ regulatory and enforcement actions, and work with farmers and agencies to identify a process to address complaints. | <ul style="list-style-type: none"> • SHRP • EPA ROD • SWIF • Floodplains by Design • Flood Hazard Management Plan • TMDL |
| 32 | The demand for county, state and federal parks, open spaces, and recreation facilities appears to outstrip its supply. But while there is anecdotal evidence that there is a need for more parks and recreational opportunities, there is little quantitative information to support that claim. A means of measuring demand relative to carrying capacity of different recreational facilities is warranted. | Evaluate the supply and demand for parks and recreation opportunities, including cultural appropriateness of resources. Consulting with State and Federal agencies to find out if they have this data might be a first step. Convene department representatives from different jurisdictions to identify challenges and opportunities. Conduct geographic supply and demand analysis. Identify measures to address shortfalls. | <ul style="list-style-type: none"> • Green Cities Program • King County Open Space Plan • Outdoor Recreation in Washington • South Park Green Space Vision Plan • Vision 2040 • Regional Trails Needs Report • Duwamish Valley Vision (DRCC) • Communities of Opportunity • Equity & Environment Initiative • Duwamish Valley Healthy Communities Project (DRCC) • PSRC Regional Economic Strategy |
| 33 | Learning stewardship principles will benefit regional youth that seek prosperity while also facing climate change and other environmental challenges. | Train youth in restoration, community leadership, and other community and environmental stewardship professions. | <ul style="list-style-type: none"> • Green Cities Program • South Park Green Space Vision Plan • SHRP • EPA ROD • Duwamish Valley Vision (DRCC) • Communities of Opportunity • Equity & Environment Initiative (Seattle) • Duwamish Valley Health Communities Project (DRCC) • King County Jobs Initiative • Job Readiness Training (Seattle) • Youth & Family Job Readiness Program (El Centro) • PSRC Regional Economic Strategy • Core Plus (MIC) • Washington Conservation Corps |

Green Duwamish Watershed Strategy – Listening Phase Findings: Challenges and Opportunities

| | Listening Phase Findings | | Pertinent Plans / Programs |
|----|--|---|--|
| | Challenges | Opportunities | (Uncommon acronyms: FbD - Floodplains by Design; NFWPCAS - National Fish, Wildlife & Plants Climate Adaptation Strategy; SCAP - Strategic Climate Action Plan; SHRP - Salmon Habitat Recovery Plan; SWIF– System Wide Improvement Framework) |
| 34 | Diesel emissions are a major air quality issue in the watershed, especially in the lower Duwamish. Diesel retrofit programs such as Puget Sound Clean Air Agency's "Diesel Solutions" are making strides to reduce emissions. Open space with trees can affect airflows, pushing pollutants into upper air layers. | <p>Continue to explore land use planning and resource management measures that would contribute to air quality improvements, and therefore, improvements in human health. Identify models for transportation planning that have shown success in improving air quality.</p> <p>Further, investigate opportunities to conduct comprehensive air quality monitoring and research the work already being performed.</p> | <ul style="list-style-type: none"> • PSCAA Strategic Plan • SCAP (KC) • South Park Green Space Vision Plan • Vision 2040 • Climate Action Plan (Seattle) • Regional Trails Needs Report • State Action Plan to Eliminate Health Disparities • Duwamish Valley Vision (DRCC) • Growing Transit Communities • Communities of Opportunity • Equity & Environment Initiative (Seattle) • Duwamish Valley Health Communities Project (DRCC) |

Green Duwamish Watershed Strategy – Listening Phase Findings: Challenges and Opportunities

| | Listening Phase Findings | | Pertinent Plans / Programs (Uncommon acronyms: FbD - Floodplains by Design; NFWPCAS - National Fish, Wildlife & Plants Climate Adaptation Strategy; SCAP - Strategic Climate Action Plan; SHRP - Salmon Habitat Recovery Plan; SWIF– System Wide Improvement Framework) |
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| | Challenges | Opportunities | |
| 35 | <p>Multiple regional and local trails remain unconnected and unsafe for pedestrians and cyclists seeking to go from one to the next. Examples include:</p> <ul style="list-style-type: none"> - The Green River Trail, Interurban Trail and Alki Trail form an interconnected system that is a wonderful regional resource. Connections to the Mountains to Sound Greenway, Pierce County Foothills Trail, Seattle Waterfront Trail, Cedar River Trail and the East Lake Washington Trail (at Renton) are all still difficult for cyclists and difficult connections to implement. - The Green River Trail is largely an off-road connected system but there are a few “missing links” in the lower Duwamish which diminish its desirability for non-expert riders. - The connections between the Elliott Bay Trail, Duwamish Trail, Green River Trail and Interurban Trail form impressive north-south spines for recreation and travel in the Green/Duwamish. Missing links should be completed to provide better, safer off-street experiences; and east-west trail linkages to other open space/park destinations could be created (Horsehead Bend Natural Area to Mill Creek Earthworks Park, for example). - King and Pierce Counties have identified a potential connection between the Cedar River Trail and the Foothills trail that would connect to regionally significant systems. - Preserving and enhancing recreational facilities and land in downtown Kent and Auburn is important for human health. - The West Duwamish Trail is missing a link in South Park. | <p>Support the implementation of planned regional and local trail connections and articulate their value as part of evaluating project proposals under the watershed strategy. A primary obstacle is making safe connections to the Cedar River and East Lake Washington trails through the area near the former confluence of the Green and Black Rivers and into Renton.</p> <p>Work with Seattle Parks and Recreation and SDOT to identify measures necessary to construct the Green River Trails missing links in the lower Duwamish.</p> <p>Work with King County to identify measures necessary to complete the trail connection between the Cedar River Trail and the Pierce County Foothills Trail. The new trail connection would be located near an area of lower opportunity so this element would address equity objectives, especially if the trail connects to communities to the east.</p> <p>Explore the capacity to finish trail connections, plant more vegetation and trees, and create riparian setbacks to enhance open spaces. Investigate, in particular, best management practices for watershed-wide setback and runoff requirements in order to help establish clear setback limits and runoff standards for new buildings. Coordinate with existing building owners in order to establish possible methods to process runoff onsite.</p> <p>Finish West Duwamish Trail missing link in South Park.</p> | <ul style="list-style-type: none"> • King County Open Space Plan • Outdoor Recreation in Washington • Regional Trails Needs Report • Growing Transit Communities • Vision 2040 • Communities of Opportunity • Equity & Environment Initiative • Duwamish Valley Healthy Communities Project (DRCC) |

Green Duwamish Watershed Strategy – Listening Phase Findings: Challenges and Opportunities

| | Listening Phase Findings | | Pertinent Plans / Programs |
|----|---|--|---|
| | Challenges | Opportunities | (Uncommon acronyms: FbD - Floodplains by Design; NFWPCAS - National Fish, Wildlife & Plants Climate Adaptation Strategy; SCAP - Strategic Climate Action Plan; SHRP - Salmon Habitat Recovery Plan; SWIF– System Wide Improvement Framework) |
| 36 | The watershed already enjoys an abundance of trails and parks that are not intuitive to find or access. Residents and visitors could make better use of existing assets if they knew where they were and how to access them. Not enough publicly available information about walking routes along trails. For example, many parks exist on the east side of the Duwamish River, but access is limited or not well known. Safety within and between these open spaces and trails could be enhanced with the help of lights and landscaping in overgrown areas. | Provide more and better connections to bike trails that are easy to find by local residents and regional visitors. Make local connecting trails safer, with better wayfinding. Identify locations that could be aided by the inclusion of lights or safety improvements. Incorporate local municipal pedestrian bike plans. Create detailed topographical maps of new trails, for example those in the West Duwamish Greenbelt. Build on Feet First wayfinding maps. Put them in local pickup locations. Name trails, identify length of section / walking distance, slope, and degree of difficulty. | <ul style="list-style-type: none"> • PSCAA Strategic Plan • SCAP • King County Open Space Plan • Outdoor Recreation in Washington • South Park Green Space Vision Plan • Climate Action Plan (Seattle) • Regional Trails Needs Report • State Action Plan to Eliminate Health Disparities • Duwamish Valley Vision (DRCC) • Growing Transit Communities • Vision 2040 • Communities of Opportunity • Equity & Environment Initiative • Duwamish Valley Healthy Communities Project (DRCC) |
| 37 | Increasing walkability within the watershed is a priority health concern. Installing sidewalks and ensuring safe school routes are priority actions that can be taken to address health issues at the community scale. Maintaining and enhancing pedestrian access to public health clinics, as well as mental health facilities, is of specific value. | Evaluate opportunities to enhance walkability within the watershed. Coordinate with public health officials to ensure pedestrian access to public health facilities. Incorporate local non-motorized transportation plans. | <ul style="list-style-type: none"> • PSCAA Strategic Plan • SCAP • King County Open Space Plan • Outdoor Recreation in Washington • South Park Green Space Vision Plan • Climate Action Plan (Seattle) • Regional Trails Needs Report • State Action Plan to Eliminate Health Disparities • Duwamish Valley Vision (DRCC) • Growing Transit Communities • Vision 2040 • Communities of Opportunity • Equity & Environment Initiative • Duwamish Valley Healthy Communities Project (DRCC) |
| 38 | Subsistence fishing populations continue to fish in contaminated areas within the watershed. They may either continue to do so throughout cleanup and restoration process, posing further health risks, or may find themselves cut off from these food sources. | Explore models for identifying and mitigating adverse health impacts on subsistence fishing populations. Highlight the efforts already underway at the county and elsewhere. | <ul style="list-style-type: none"> • South Park Green Space Vision Plan • SHRP • EPA ROD • TMDL • State Action Plan to Eliminate Health Disparities • Duwamish Valley Vision (DRCC) • Communities of Opportunity • Race and Social Justice Initiative (KC) • Equity & Environment Initiative (Seattle) • Duwamish Valley Healthy Communities Project (DRC) |

Green Duwamish Watershed Strategy – Listening Phase Findings: Challenges and Opportunities

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| | Challenges | Opportunities | |
| 39 | Purchase of properties for conservation is logistically burdensome and time-consuming – no clear path exists. | Examine existing acquisition programs to determine if there are ways to expedite transactions for conservation. For example, utilities often have surplus parcels that they would like to see go into conservation. Each transaction is costly and time consuming. A more efficient process could be developed to facilitate those wishing to sell property for conservation purposes– public and private. | <ul style="list-style-type: none"> • King County Open Space Plan • Cascade Agenda |