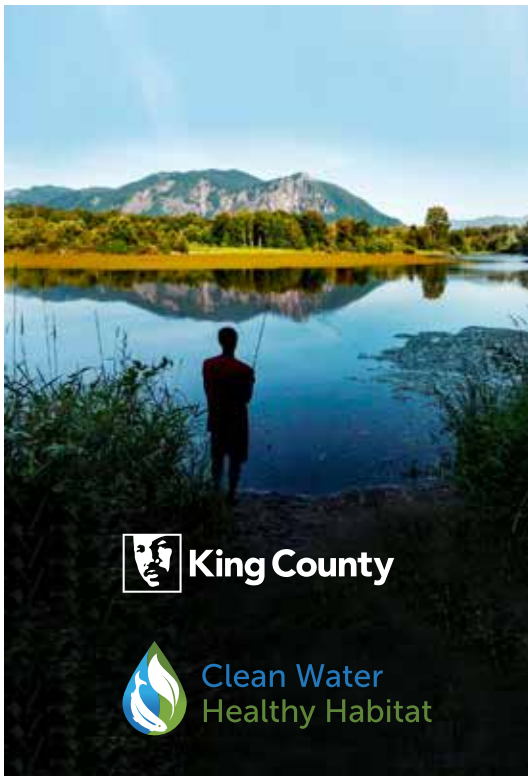
King County

CLEAN WATER HEALTHY HABITAT Strategic Plan

2020–2025



King County

Clean Water
Healthy Habitat

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FROM KING COUNTY EXECUTIVE DOW CONSTANTINE

I am inspired by the outstanding work our employees and partners do each day to protect the water quality and habitat that is critical to the health and well-being of people, of salmon, of orca – of all living things that call King County home.

Our professionals treat more than 66 billion gallons of wastewater and stormwater each year, restore salmon-bearing streams and rivers to their natural states, and reduce the amount of toxics that pollute wetlands, lakes, and Puget Sound.

Yet the impacts of climate change and rapid population growth are contributing to alarming trends. Native salmon runs continue to decline. Southern resident orcas are on the brink of extinction. The racial inequities in health outcomes that already existed are now even greater.

The compounding challenges we face today require a new approach, one that starts with clearly defined goals, capitalizes on the latest advancements in science and technology, and unifies efforts throughout Central Puget Sound. That is my commitment with Clean Water Healthy Habitat, the initiative I launched in 2019 to produce better results sooner for people, fish, and wildlife.

Like most local governments, we've traditionally gauged our success by whether we achieve mere regulatory compliance, regardless of the actual results we produce. While that is an important indicator, the hard truth is that we could fully comply with all regulations yet fail to produce the clean water and healthy habitat that sustains life in our region.

We must also have the courage to change our own practices. Instead of measuring only the performance of individual programs, we will measure how our combined work advances six specific goal areas. We will provide our employees with more opportunities to collaborate across divisions and with BIPOC community leaders, encouraging creativity and innovation rather than emphasizing only risk mitigation. And just as we do throughout the entire King County enterprise, with each action and each investment we will help dismantle systemic racism and contribute to a more just, equitable future for all.

This strategic plan will be our compass as we deliver on the promise of Clean Water Healthy Habitat, guiding our actions and investments for a generation.

Much will change over the next 30 years, including administrations. New challenges and new opportunities will arise, but our region's steadfast commitment to clean water and healthy habitat will not waver. Since time immemorial, the original people of this special place have appreciated and nurtured the connection between humans and the natural environment.

This is how our generation honors that lasting commitment.

Dow Constantine

Dow Constantine, King County Executive

EXECUTIVE SUMMARY

Purpose

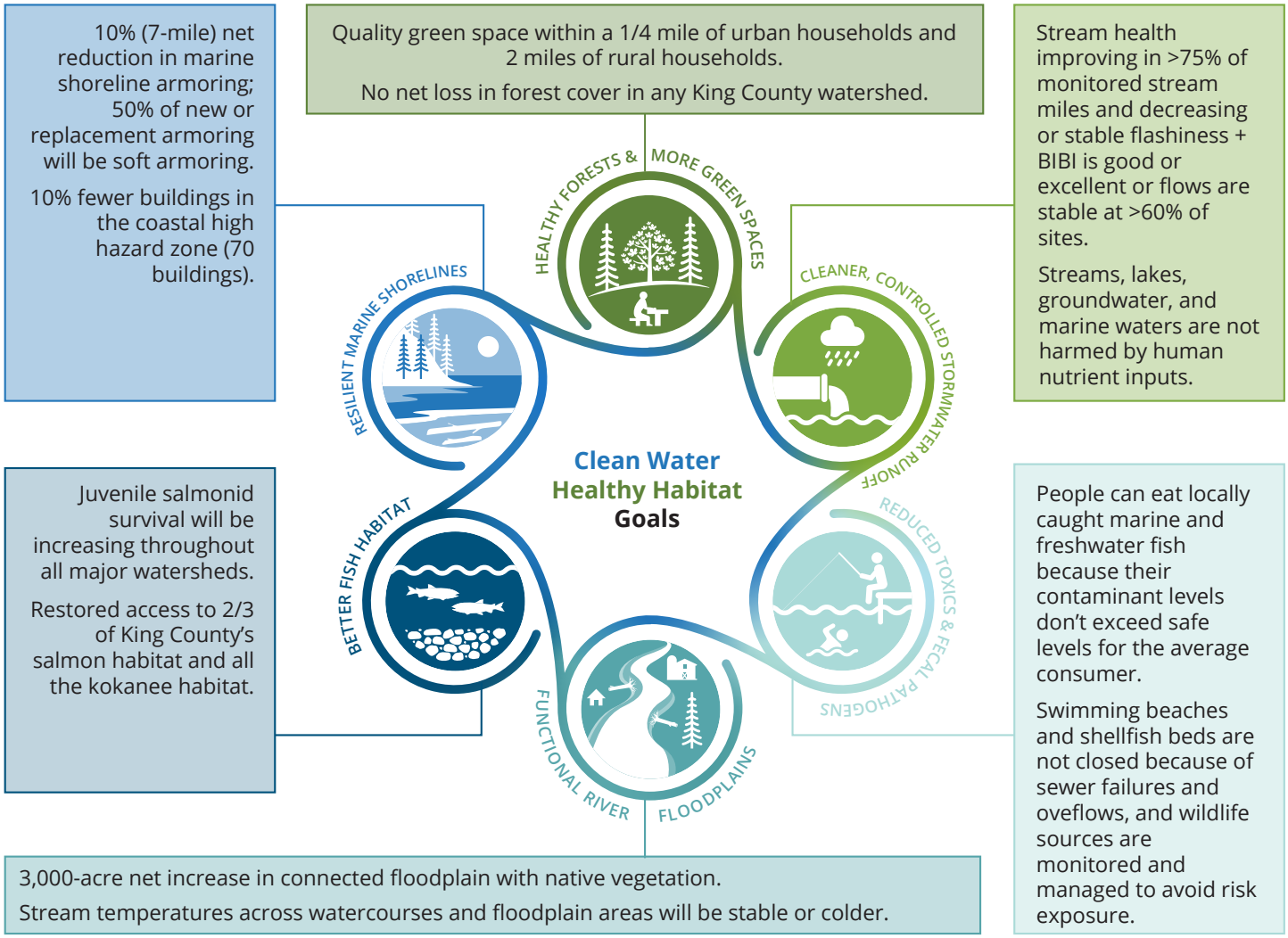
King County is committed to protecting and restoring clean water and healthy habitat in order to preserve and enhance the health and well-being of 2.25 million residents, fulfill tribal treaty rights, eliminate inequities, and recover threatened salmon and orca.

The purpose of the Clean Water Healthy Habitat Strategic Plan (strategic plan) is to align the County's work around shared goals and empower employees to deliver faster, better results in their work with residents, businesses, tribes, customers, partners, other governments, and nonprofit organizations.

In 2019, Executive Dow Constantine created the Clean Water Healthy Habitat Initiative with a vision to protect and restore the water and land that sustains all of us within a generation. The Executive challenged King County leaders and employees across the enterprise to:

- Develop measurable 30-year goals that represent environmental success and benefit all people, including, and especially, marginalized communities.
- Develop strategies that guide County work to achieve better, faster results; incorporate equity practices; and yield higher returns on public investments.

Goals The strategic plan centers on six 30-year goals that are connected to 12 measures to assess King County's progress.



In addition, each goal has 30-year outcomes described in three parts, like braided strands:

- The best environmental outcomes believed to be possible in 30 years.
- Benefits to humans from clean water and healthy habitat, when and where they need them.
- Elimination of racial inequities and an increase in equitable environmental outcomes and benefits.

Healthy Forests and More Green Spaces:

- Forest cover and green spaces are protected, increasing, widespread, equitably distributed, healthy, and connected in ways that sustain habitat, stream functions, carbon storage, clean air, cool waters and air temperatures, and natural streamflow.
- Human health is supported, and cultural values and practices are ensured.
- Inequities in people's access to quality green space are eliminated by 2050.

Cleaner, Controlled Stormwater Runoff:

- Stormwater has less contaminants, pathogens, or nutrients; and water levels and stream flows are healthy for fish and aquatic life.
- Waters consistently provide swimming, fishing, and shellfishing opportunities and drinking water is clean.
- All lives, homes, and properties are protected from stormwater-related flooding.

Reduced Toxics and Fecal Pathogens:

- Toxic chemicals and fecal pathogens consistently decline and the health of salmon and resident orca is improving.
- King County is responsive to fecal pathogen contamination so that waters are safely managed and open for swimming and recreation for all people in King County.
- People can enjoy fish, crab, and other shellfish that are safer to eat, more plentiful, and sustainable.

Functional River Floodplains:

- Floodplains are reconnected and revegetated.
- Reductions in flood risk to people and structures, while supporting agriculture and open space.
- People have equitable access to flood programs and projects and King County provides targeted support to land and capital for farmers who are Black, Indigenous, and people of color (BIPOC).

Better Fish Habitat:

- Native wild fish populations are thriving and self-sustaining, with ample healthy habitat.
- People can enjoy locally caught fish.
- Tribes have abundant salmon to provide for their economic and cultural prosperity.

Resilient Marine Shorelines:

- Beach and marine shoreline habitat processes are maintained and fewer structures are vulnerable to sea level rise.
- People aren't in harm's way, functions provided by vital infrastructure are sustained, and residents' drinking water is clean.
- Treaty rights can be meaningfully exercised related to fish and shellfish.

Strategies

The strategic plan presents 13 strategies to realize the vision of the Clean Water Healthy Habitat Initiative. They address barriers preventing better outcomes. They are aligned and coordinated with the 2020 Strategic Climate Action Plan (SCAP) and Equity and Social Justice (ESJ) Strategic Plan. Strategies build on functional plans implementing the work and inform land and water management in communities across the County. Strategies focus on "upstream" changes to policies, practices, and systems that functional plans need for better and faster environmental outcomes. Strategies are framed by Clean Water Healthy Habitat principles directed by the Executive:

Equitable Investments and Community Engagement strategies create guidance for consistent data gathering to ensure community priorities inform the services provided and that investments go where they are most needed. Strategies will be consistent and coordinated with the ESJ Strategic Plan. The intent is to address systemic racial discrimination that burdens BIPOC communities with degraded environments, contributing to inequities in health, well-being, and economic prosperity.

- **Strategy 1.** Engage community partners to align delivery of County environmental services with community priorities and development of data that highlight current environmental inequities resulting from racial discrimination.
- **Strategy 2.** Establish an equitable Department of Natural Resources and Parks (DNRP)-wide community partnership vision, standards, and protocols.
- **Strategy 3.** Continue to promote more equitable hiring and contracting.

Integration strategies leverage funding and staff resources, orient toward shared outcomes while delivering program goals, identify synergies, promote a better run government, and communicate what we are doing and why.

- **Strategy 4.** Integrate capital planning and monitoring to maximize multi-benefits.
- **Strategy 5.** Integrate natural asset management.
- **Strategy 6.** Shift the workplace culture to incentivize integration.
- **Strategy 7.** Create integrated data tools.

Standardization and Systems Approach strategies promote work programs at watershed- and system-scales, across lines of business, to achieve shared outcomes. Standardized goals will help programs find ways to support multiple Clean Water Healthy Habitat outcomes, even if that work was previously beyond the scope.

- **Strategy 8.** Add multi-benefit criteria to King County grants and incentive programs.
- **Strategy 9.** Update the Green Building Sustainable Infrastructure Scorecard.

Innovation strategies focus on employees bringing forward new ideas to improve outcomes of planned investments and on developing new funding streams invested in the highest environmental returns. Success depends on problem solving, advancements in technology, data analytics and visualization, market mechanics, and novel partnerships.

- **Strategy 10.** Promote employee-generated innovation.
- **Strategy 11.** Pursue innovative funding mechanisms.

Outcome-driven decision-making strategies call for identifying the best outcomes that can be achieved and then designing ways to get there. Internal and external regulations and policies guide how the County invests public dollars, does long-term planning, manages land use, and implements projects. This strategy directs us to challenge laws, regulations, and policies prohibiting the County from achieving the best environmental results.

- **Strategy 12.** Develop regulatory alternatives for improved environmental outcomes.
- **Strategy 13.** Develop and implement an interdepartmental work plan and policy framework between the Department of Natural Resources and Parks and the Department of Local Services.

Implementation

Every five years, the County will assess what barriers were removed to create better environmental outcomes for King County. In 2025, targets will be evaluated, and strategies will be adjusted or updated. The sum of the functional plans' success will be indicated by progress toward 30-year goals and measures, which may be adjusted at that time. Implementation of individual actions and the five-year update will be done in coordination and alignment with the 2025 SCAP.

Clean Water Healthy Habitat is a promise to deliver better, faster results that yield a higher return on public investments. Success depends on employees and King County's environmental partners embracing this integrated framework. King County is committed to achieving the goals with urgency. The County will provide environmental leadership supported by science, with priorities co-created by communities to eliminate inequities from systemic racism. Through Clean Water Healthy Habitat, the County will continue to deliver on the promise of making King County a welcoming community where every person can thrive.

INTRODUCTION

King County has long been a leader in environmental work driven by science and responsive to communities' needs. The Clean Water Healthy Habitat Strategic Plan stems from the County's core obligation to protect and restore clean water and healthy habitat through regional land use decisions, transportation operations, utility management, pollution prevention and cleanup, and restoration and salmon recovery programs. Through this work, the County is strongly committed to improving and protecting the health and well-being of its 2.25 million residents, fulfilling tribal treaty rights, promoting fairness and opportunity and eliminating inequities, and recovering the iconic species that call this region home.

Some recent highlights of the County's work include:

The **Land Conservation Initiative** will preserve 65,000 acres of forests, farmlands, shorelines, and trails within 30 years, before the opportunity is lost to population growth and development. The initiative reduces the financial burden to acquire new open space in communities where investments have been lacking and that have been deprived of the health, quality of life, economic, and environmental benefits associated with nearby green spaces.

The **Fish Passage and Restoration Program** lays out the strategy to accelerate restoration of fish passage at existing barriers owned or operated and maintained by King County, demonstrating the County's commitment to ecosystem recovery and tribal treaty rights.

Two plans focused on clean water are underway. The Clean Water Plan will guide the King County Wastewater Treatment Division's future and address broader water quality concerns expressed by communities in the face of a growing population and a climate crisis. This includes developing an approach for maintaining the 50-year-old system of wastewater pipes, pumps, and treatment facilities; coordinating water quality investments to get the best outcomes for human health, habitat, and wildlife;

and ensuring the benefits of water quality investments are targeted and distributed equitably. The Stormwater Investment Plan, led by Stormwater Services, is undertaking a collaborative approach to reimagine how King County and its partners manage stormwater runoff in the region. This effort will address policy barriers and include new projects, collaboration, research, and funding concepts. The plan will incorporate new, more equitable and innovative ways of thinking that bring multi-benefit outcomes to residents.

The **30-Year Forest Plan** establishes priorities and goals related to rural and urban forests of King County. A range of partners and stakeholders, including cities, nonprofits, and community members contributed to the priorities: climate, forest health, urban forest canopy, salmon habitat, sustainable timber, water quality and quantity, and equity strategies. The plan includes priority-related goals and strategies to guide the Department of Natural Resources and Parks (DNRP) and the many partners who helped create this shared vision.

The **Fish, Farm, Flood Initiative** is advancing and integrating priority actions for fish, farming, and flood interests in the Snoqualmie Valley, while recognizing the tradeoffs involved. An advisory body of partner agencies, tribes, agriculture, and community members is developing and implementing a work plan based on hard-won trust, understanding, and mutual support. The initiative is driving capital projects and grants, clarifying regulations, and supporting leading-edge science to improve and develop a model for how King County works in floodplains.

The **Strategic Climate Action Plan** (SCAP) is a five-year blueprint for County action to confront climate change, integrating climate change into all areas of County operations and its work in the community. The climate preparedness section of the SCAP intends to support and implement policies and actions that reduce climate change vulnerabilities and increase the resilience of communities disproportionately impacted by climate change, natural systems, and the built environment.

In all, more than 30 functional environmental programs and plans span DNRP, the Department of Local Services (DLS), Public Health—Seattle & King County (Public Health), and the King County Executive Office. The success of these efforts depends on close coordination and collaboration with one another as well as other local governments, the state and federal government, Indian tribes, nonprofits, Black, Indigenous, and people of color (BIPOC) communities, and the private sector.

The purpose of this strategic plan is to, over the next five years, align King County's work around shared goals and empower our employees to work with customers, partners, other governments, and tribes to implement strategies to deliver faster, better results. The strategic plan establishes a shared vision of a healthy environment providing equitable benefits to all people of the County. The strategic plan will be implemented with the 2020 SCAP and needs flexibility to address the rapid social, economic, public health, and environmental change. Success depends on employees adapting to change and co-creating programs to improve outcomes for the communities we serve, especially communities that have been historically marginalized.

OVERALL GOALS

- Equity and Social Justice Plan
- Strategic Climate Action Plan
- King County Comprehensive Plan

Clean Water Healthy Habitat

Healthy Forests and More Green Spaces

Cleaner, Controlled Stormwater Runoff

Reduced Toxics and Fecal Pathogens

Functioning River Floodplains

Better Fish Habitat

Resilient Marine Shorelines

FUNCTIONAL PLANS

Flood Hazard Management Plan	Salmon Recovery Plans	Land Conservation Initiative	Clean Water Plan	Long Term Control Plan	Local Hazardous Waste Plan
Solid Waste Comprehensive Plan	30-Year Forest Plan	Fish Passage and Restoration	Stormwater Investment Plan	Water Quality Benefits Evaluation	Pollution Identification and Control
Strategic Plan for Road Services	Environmental Health Services Strategic Plan	Hazard Mitigation Plan	Parks Open Space Plan	Fish, Farm, Flood	Healthy Lands Project

ONGOING PROGRAMS

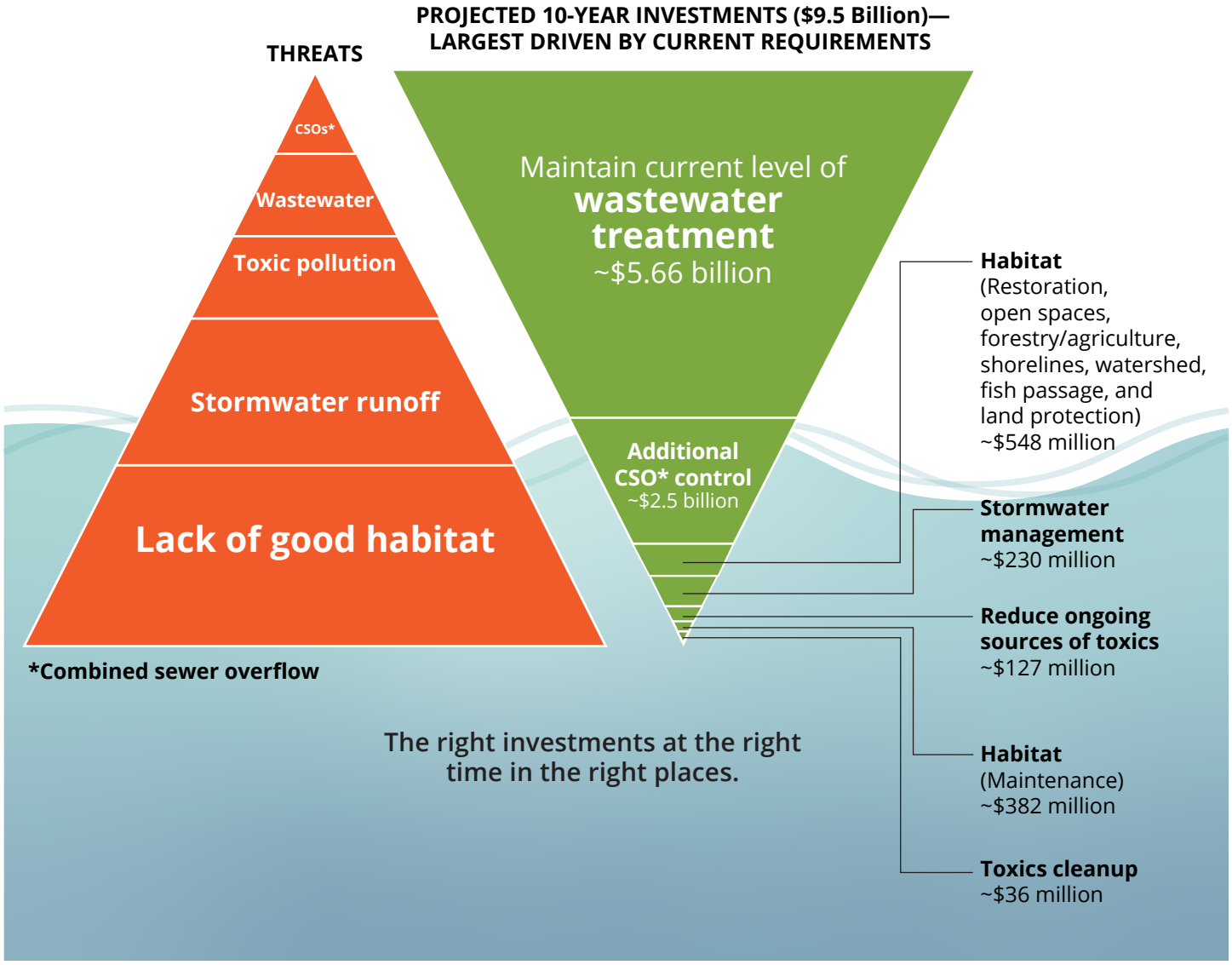
- **Department of Local Services** *Roads, Permitting*
- **Office of the Executive**
- **Department of Natural Resources and Parks** *Water and Land Resources, Wastewater Treatment, Parks and Recreation, Solid Waste*
- **Public Health--Seattle & King County** *Environmental Health*

BACKGROUND

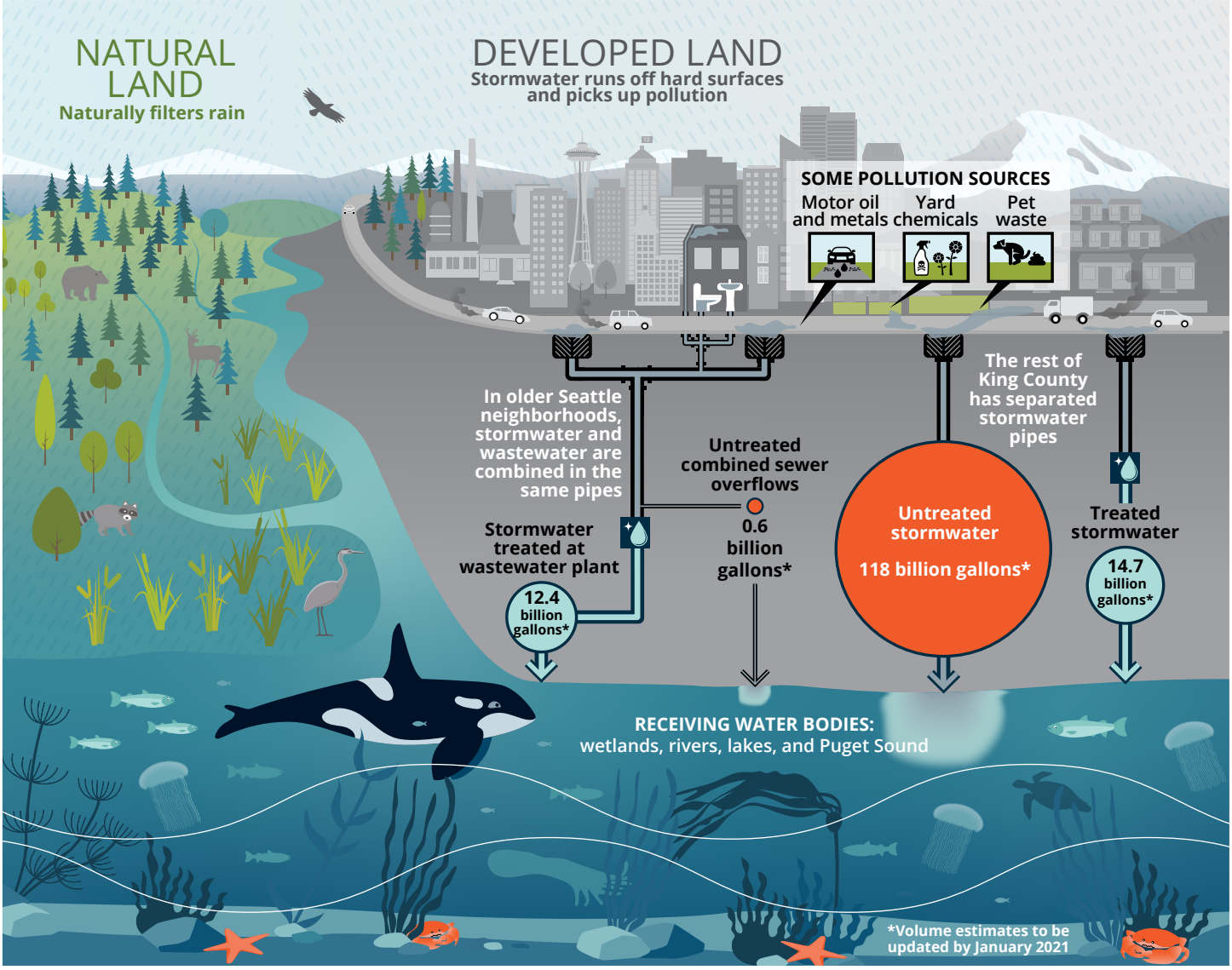
Despite innovative and effective programs and responsible land use planning, habitat loss, stormwater pollution, and toxic contamination still contribute to critically endangered orca and declining salmon runs, threatening our shared natural ecological and a cultural heritage and tribes' ability to exercise treaty rights. King County waters and habitats are under further threat from population growth and a climate crisis. Acting now and with urgency is important as climate change compounds the challenges and pressure mounts to make progress without increasing costs to the public. A critical piece is missing.

King County needs an inclusive vision of success and an integrated architecture for environmental work. Program goals are driven by different regulations, funds, measures, and schedules. We need to comprehensively review our work to focus on the best outcomes that could be achieved with public investment and examine which communities experience environmental inequities resulting from systemic and institutional racism that warrant additional focus. Finally, environmental success is often measured by regulatory compliance instead of the actual outcomes that people, fish, and wildlife experience. King County has achieved a high level of compliance with regulations, yet threats remain for orca and salmon. This strategic plan will look closer look at how King County spends public dollars for the best environmental returns, measured by improved water quality and habitat outcomes.

Conceptual Threats to Puget Sound Chinook and Orca

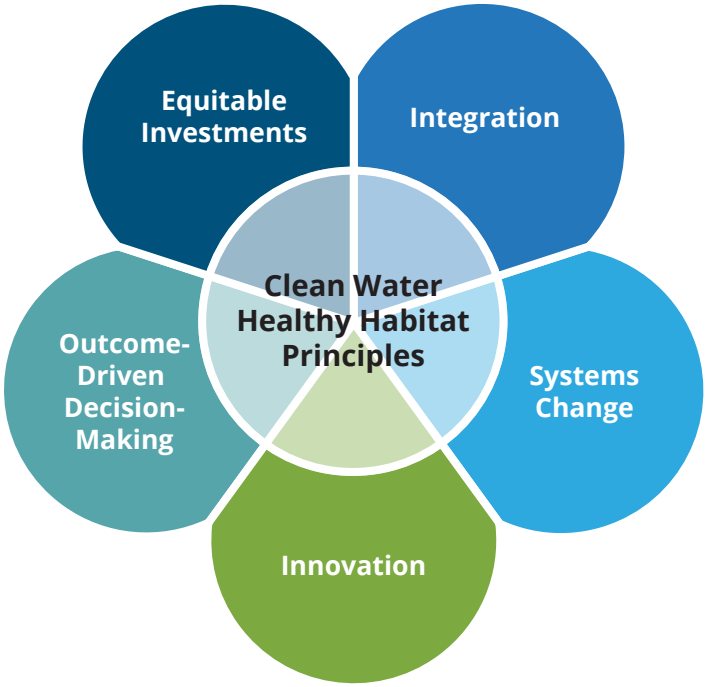


The bottom line is that King County must focus investments on actions that bring the most cost-effective gains for our environment now. The need to directly link water quality and habitat investments with the conceptual understanding of threats to iconic Puget Sound species became further underscored when King County staff dug into a specific issue, and one that has long been considered a primary threat to Puget Sound salmon and Southern Resident Orca: non-point source, or uncontrolled, stormwater runoff.[1] In reviewing the volumes of stormwater that are treated and untreated throughout the County, it is clear there are issues considered to be primary threats that receive little or no investment.



It is no surprise that we have found ourselves in a situation where investments may not line up with the most effective outcomes. Investments to date have been largely driven by regulatory requirements and science that are siloed and don't necessarily link together to achieve the desired priorities and outcomes. This strategic plan considers options for how we invest in approaches, including regulations, and make the most effective and efficient use of public dollars. For example, there are opportunities to adjust regulatory mechanisms by focusing on approaches that integrate land and water management to leverage investments and have better outcomes.

In 2019, King County Executive Dow Constantine created the Clean Water Healthy Habitat Initiative to address the need for a shared vision of a healthy environment that provided equitable benefits to all people of King County. The Executive challenged County leaders and employees to develop a 30-year shared set of measurable goals that represent environmental success and benefit all people, including historically marginalized communities in King County. The challenge included the development of clear strategies that will guide ongoing King County work to achieve better, faster results that incorporate equity practices and yield a higher return for public investments.



> ***"People don't get all the connections. They say the environment is over here, the civil rights group is over there, the women's group is over there and the other groups are here. Actually, all of them is one group, and the issues we fight become null and void if we have no clean water to drink, no clean air to breathe and nothing to eat."***
>
> – Cora Tucker, 1987

VISION:
Protect and restore the water and land that sustains us all within a generation

Principles

The initiative kicked off with an Executive Order that further laid out principles that provide a conceptual road map for how to direct future environmental work:

Equitable investments. Strategies will be consistent and coordinated with the Equity and Social Justice Strategic Plan, understanding that historically underserved communities disproportionally bear the burden of pollution and degraded habitat, as evidenced by data gathered by King County and validated by engagement with these communities. There are communities within King County that will need prioritized investment to meet historic inequities.

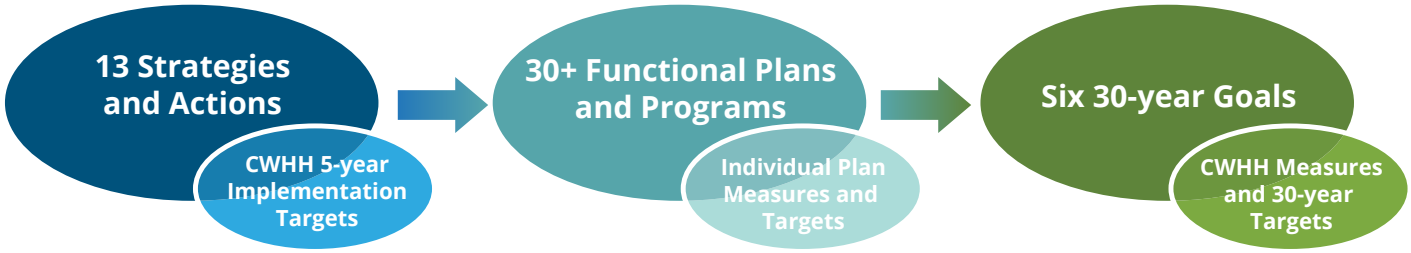
Integration. Departments and divisions across the County will integrate across programs and projects to leverage investments and share lessons learned in order to achieve greater environmental, multi-benefit, and equitable outcomes.

Systems change. Strategies will encourage the development of work programs at the watershed- and system-scale, as opposed to lines of business, to better link ongoing County work in the same system that is currently managed in isolation and encourage an orientation toward shared outcomes.

Innovation. Strategies will focus on ways for employees to bring new ideas forward that improve the outcomes of planned investments and develop new funding streams that can be invested in the highest environmental returns. Emphasis is also placed on learning from one another to ensure there is process improvement and applying an equity framework over time, and reducing focus on work that is outdated, inefficient, or not being used for decision-making.

Outcome-driven decision-making. As part of the Clean Water Healthy Habitat Strategic Plan development and implementation, the County will examine and challenge laws, regulations, and barriers that prohibit achievement of the best environmental results in the near term and long term.

Strategies in this strategic plan build on the functional plans that directly implement the work. Strategy implementation will be measured every five years against targets focused on what the organization did to remove barriers to create better outcomes in the environment for the people of King County. The sum of the functional plans' success will be measured by the 30-year goals and measures, which concentrate on environmental conditions and the services that a healthy environment provides universally to people.



30-Year Goals for Clean Water Healthy Habitat

The Clean Water, Health Habitat Strategic Plan centers around six 30-year goals that define successful outcomes. Each goal is connected to, and overlaps with, the other goals because the problems they address are interrelated. To measure progress, the six goals are connected to 12 provisional measures, to be improved upon over time and evaluated in a larger context established by comprehensive environmental monitoring.

10% (7-mile) net reduction in marine shoreline armoring; 50% of new or replacement armoring will be soft armoring.

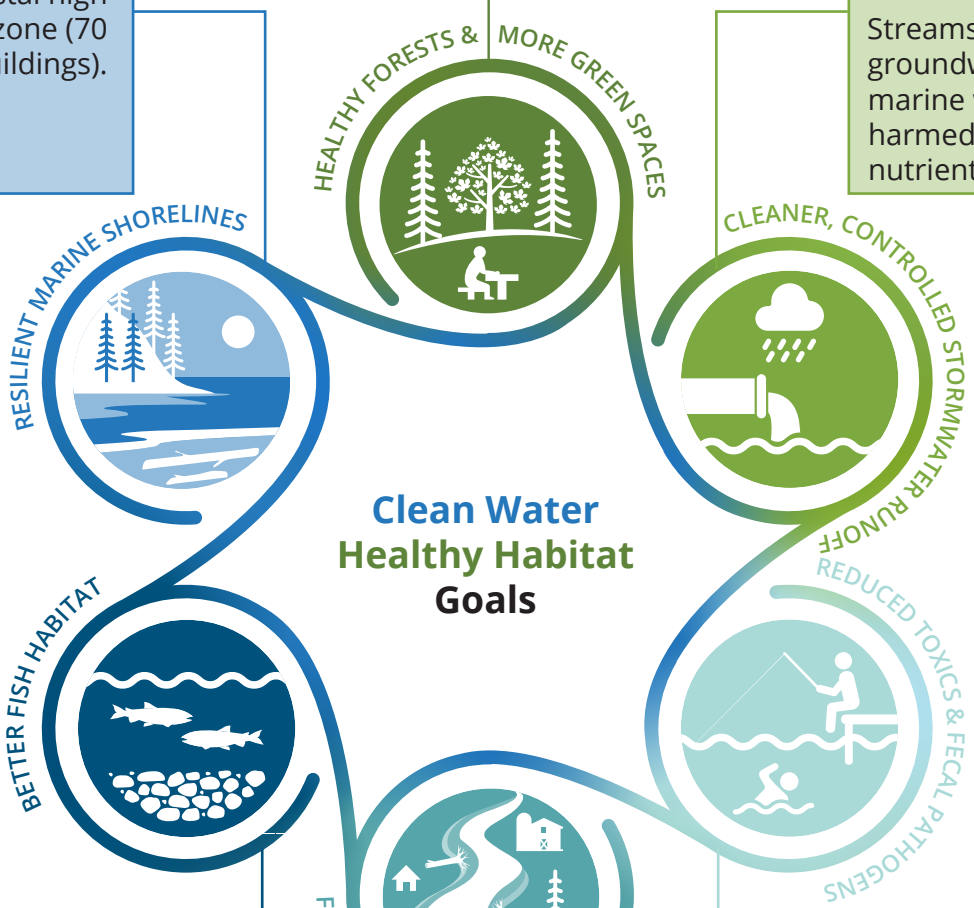
10% fewer buildings in the coastal high hazard zone (70 buildings).

Quality green space within a 1/4 mile of urban households and 2 miles of rural households.

No net loss in forest cover in any King County watershed.

Stream health improving in >75% of monitored stream miles and decreasing or stable flashiness + BIBI is good or excellent or flows are stable at >60% of sites.

Streams, lakes, groundwater, and marine waters are not harmed by human nutrient inputs.



Juvenile salmonid survival will be increasing throughout all major watersheds.

Restored access to 2/3 of King County's salmon habitat and all the kokanee habitat.

3,000-acre net increase in connected floodplain with native vegetation.

Stream temperatures across watercourses and floodplain areas will be stable or colder.

People can eat locally caught marine and freshwater fish because their contaminant levels don't exceed safe levels for the average consumer.

Swimming beaches and shellfish beds are not closed because of sewer failures and oveflows, and wildlife sources are monitored and managed to avoid risk exposure.

People are at the center of the Clean Water Healthy Habitat goals. Human well-being is inseparable from the health of the environment. Healthy environments provide critically important provisioning, regulating, and cultural services to people. Systemic racism has caused racial inequities in environmental benefits and outcomes for Black, Indigenous, and people of color (BIPOC). Accordingly, each Clean Water Healthy Habitat goal consists of three parts, like braided "strands."

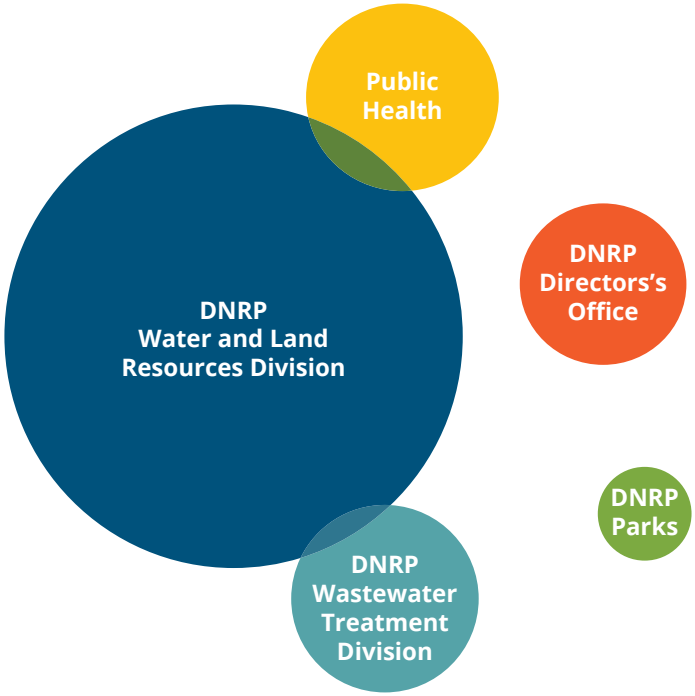
These strands compose a single holistic goal that is strong, durable, and useful.

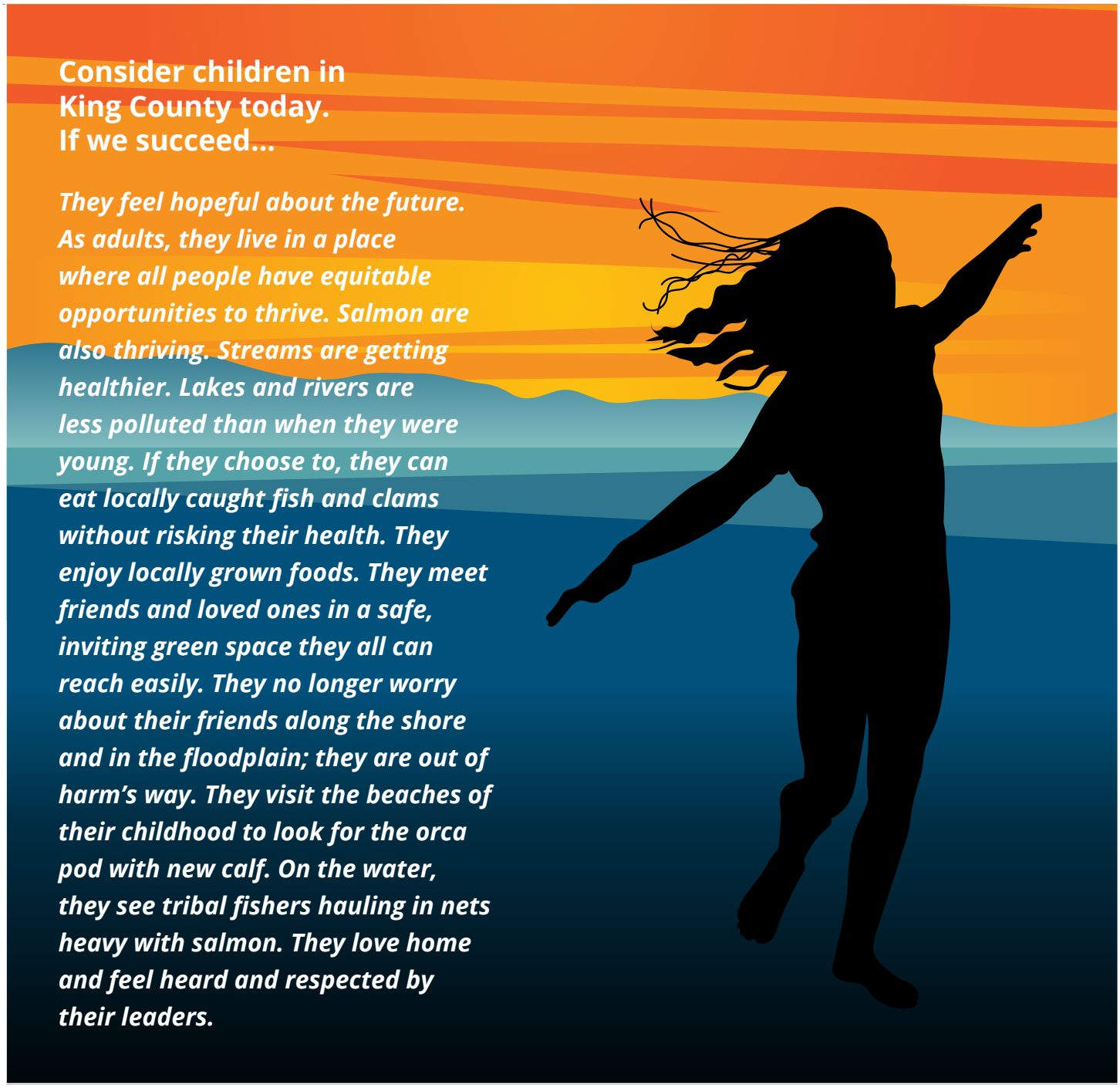
- Achieve the best environmental outcomes believed to be possible in 30 years.
- Deliver benefits[2] from clean water and healthy habitat that people need, when and where they need them.
- Target work to eliminate racial inequities and achieve universal environmental outcomes and benefits.

In this way, the strategic plan establishes universal environmental goals that matter to people and promotes targeted action to achieve them. King County will need to develop strategies, consistent with the principle of equitable investments, that target inequities in BIPOC communities and certain geographies to reach equitable outcomes and achieve universal goals. With every action, every investment, and every plan, we must work to bring about equity.

Achieving these goals will be challenging. Many long-standing barriers such as "silos" prevent people from collaborating. The Clean Water Healthy Habitat strategies are intended to guide our work toward shared outcomes.

The goals were developed with the Clean Water Healthy Habitat leadership team and subject expert goal teams. Draft goals were informed by over 40 expert interviews. Goal teams defined critical environmental problems, described the best environmental outcomes believed to be possible in 30 years, how people of King County benefit, and inequities by race and/or place in how benefits are distributed. Goals were designed to reflect community values and priorities identified in the King County Equity and Social Justice Strategic Plan and public engagement efforts for the Clean Water Plan, the 2020 Strategic Climate Action Plan (SCAP), and Land Conservation Initiative (LCI). They identified suitable measures and set ambitious targets, starting with Puget Sound Partnership's Vital Signs indicators.





Consider children in King County today. If we succeed...

They feel hopeful about the future. As adults, they live in a place where all people have equitable opportunities to thrive. Salmon are also thriving. Streams are getting healthier. Lakes and rivers are less polluted than when they were young. If they choose to, they can eat locally caught fish and clams without risking their health. They enjoy locally grown foods. They meet friends and loved ones in a safe, inviting green space they all can reach easily. They no longer worry about their friends along the shore and in the floodplain; they are out of harm's way. They visit the beaches of their childhood to look for the orca pod with new calf. On the water, they see tribal fishers hauling in nets heavy with salmon. They love home and feel heard and respected by their leaders.

The six goals are explained on the next page, starting with the environmental problems to be addressed by each goal, followed by a summary of what needs to change within 30 years ("Reaching the goal means...") and two useful measures of progress against ambitious 30-year outcome-based targets. These 30-year goals will be improved upon over time and must be evaluated within the context of comprehensive monitoring ("If we succeed, in 30 years..."). The framework is flexible, by design. It is recommended that the 30-year goals and measures be revisited every five years, in coordination with the five-year SCAP update, to ensure the most critical problems are prioritized and measures reflect new knowledge, changes in revenue, and community priorities.

Healthy Forests and More Green Spaces

Rural and urban forests continue to be fragmented and replaced by other land uses, particularly in urban and suburban areas.[3] Some forests are vulnerable to disease, insects, and weeds, and face increasing drought. These factors impact forest health and reduce their ability to support wildlife corridors and supply Clean Water Healthy Habitat, and carbon storage. Protecting healthy forests and soils that support them is a fundamental step toward healthy ecosystems.

King County has less forest cover and fewer green spaces than are needed, and there are inequalities in who has access to quality green spaces. Many people don't live within ready access to a public park, green space, or trail. People in these places often also experience the lowest incomes and the poorest health. This is a problem because green spaces and contact with nature benefit people and communities and strengthen community connections and social cohesion. Ready access to these spaces supports improved air quality and cooler temperatures in urban heat islands, as well as other public health priorities such as reducing obesity, cardiovascular disease, depression, and anxiety.[4]

Reaching the 30-year goal of Healthy Forests and More Green Spaces means...

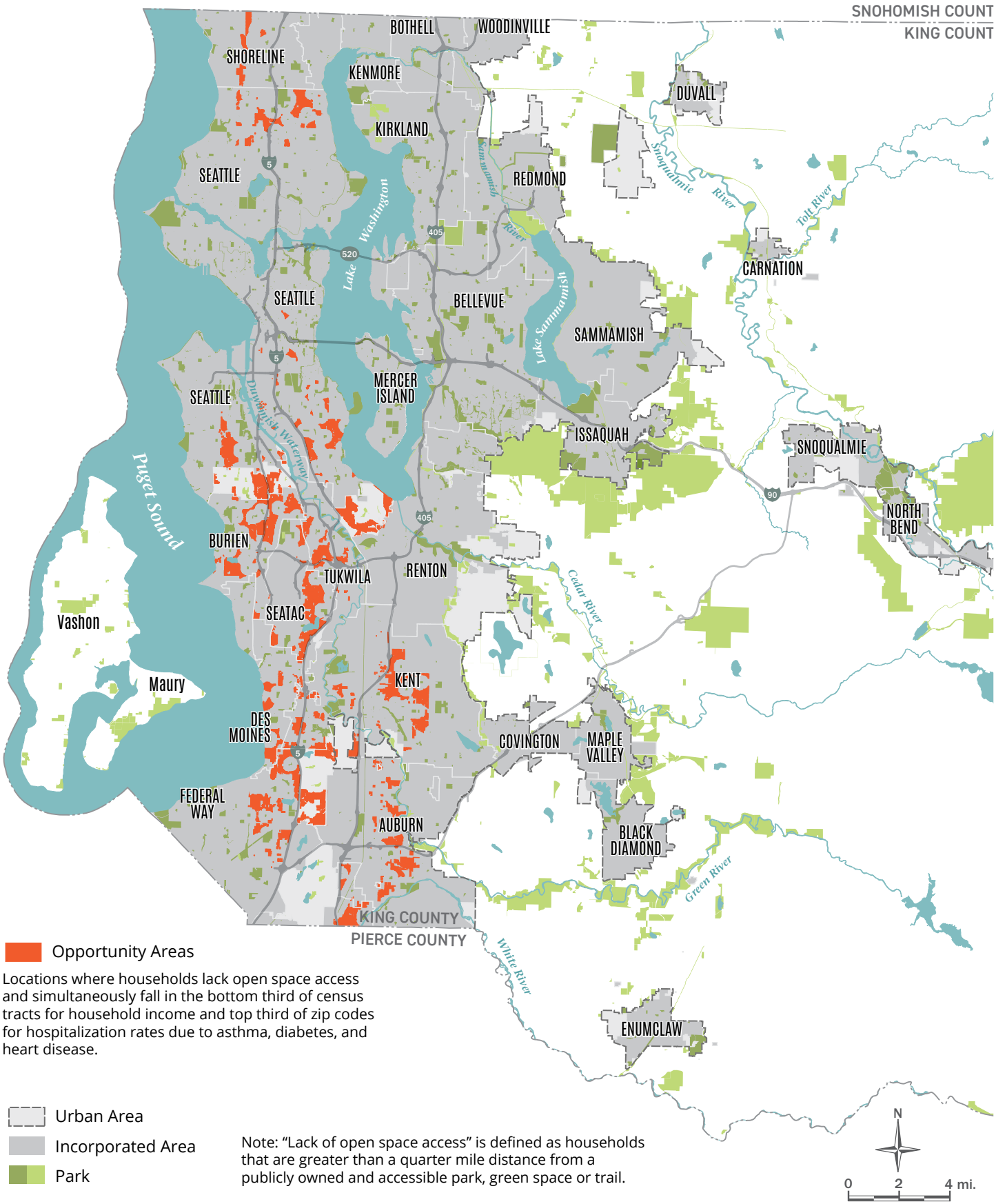
- Forest cover and green spaces are protected, increasing, widespread, equitably distributed, healthy, and connected in ways that sustain habitat, stream functions, carbon storage, clean air, cool waters and air temperatures, and natural streamflow.
- All people can readily stay cooler on hot days, breathe cleaner air, improve their health and well-being outside, find community and scenic beauty, and celebrate traditional cultural values and practices.
- Inequities in people's access to quality green space are eliminated by 2050 so everyone has a safe, inviting, and culturally relevant place to be active and gather outside. Investments in pursuit of this goal are paired with strategies and policies[5] to prevent displacing low-income residents.[6]

If we succeed, in 30 years...

There will be quality green space[7] within one-quarter mile of urban households and 2 miles of rural households.[8] King County will be on its way to reaching this goal if lands are acquired and neighborhoods (such as unincorporated urban areas of North Highline and Skyway) are being "greened" in a manner consistent with priorities identified in relevant functional plans (e.g., LCI,[9] SCAP, King County Open Space Plan).[10]

There will have been no net loss in forest cover in any King County watershed, including private forests and in the 30,000 acres under King County's management. Evidence of progress will be based on changes in forest cover in the upper, middle, and lower watershed areas.[11] King County will be on its way to reaching this goal if forest management is consistent with priorities identified in relevant functional plans (e.g., 30-Year Forest Plan, LCI, SCAP, King County Open Space Plan). The 30-Year Forest Plan includes strategies for maintaining and increasing forest cover and forest health across different landowner types, including private landowners.

Open Space Inequities in King County



Cleaner, Controlled Stormwater Runoff

Most of our region was developed before we had standards and strategies for managing runoff. The result: a backlog of improvements needed to upgrade outdated infrastructure and add new infrastructure where none exists so the flow and water quality impacts of stormwater runoff from older, developed land can be mitigated.

As development continues, and stormwater runoff increases, pollutants and unhealthy flows present increasing risks to people and property—and to critical habitats for fish and other aquatic life.[12] Stormwater runoff often causes higher peak stream flows during storms, which increases stream erosion, sedimentation, habitat damage, and property flooding. Vulnerability to stormwater flooding likely varies by race and/or place, but we currently lack information to guide targeted action.

Stormwater runoff carries nutrients to water bodies and contributes to nutrient-related problems. Nutrients (nitrogen and phosphorus) are essential for life, but excess nutrients in our waters can cause a range of problems. In groundwater, high levels of nitrates can directly harm human health. In surface waters, nutrients feed algal blooms that can cause lower water clarity and oxygen levels, bad odor and taste, and the loss of desirable species. Some algal blooms can also produce toxins that harm people, pets, and wildlife.

Reaching the 30-year goal of Cleaner, Controlled Stormwater Runoff means...

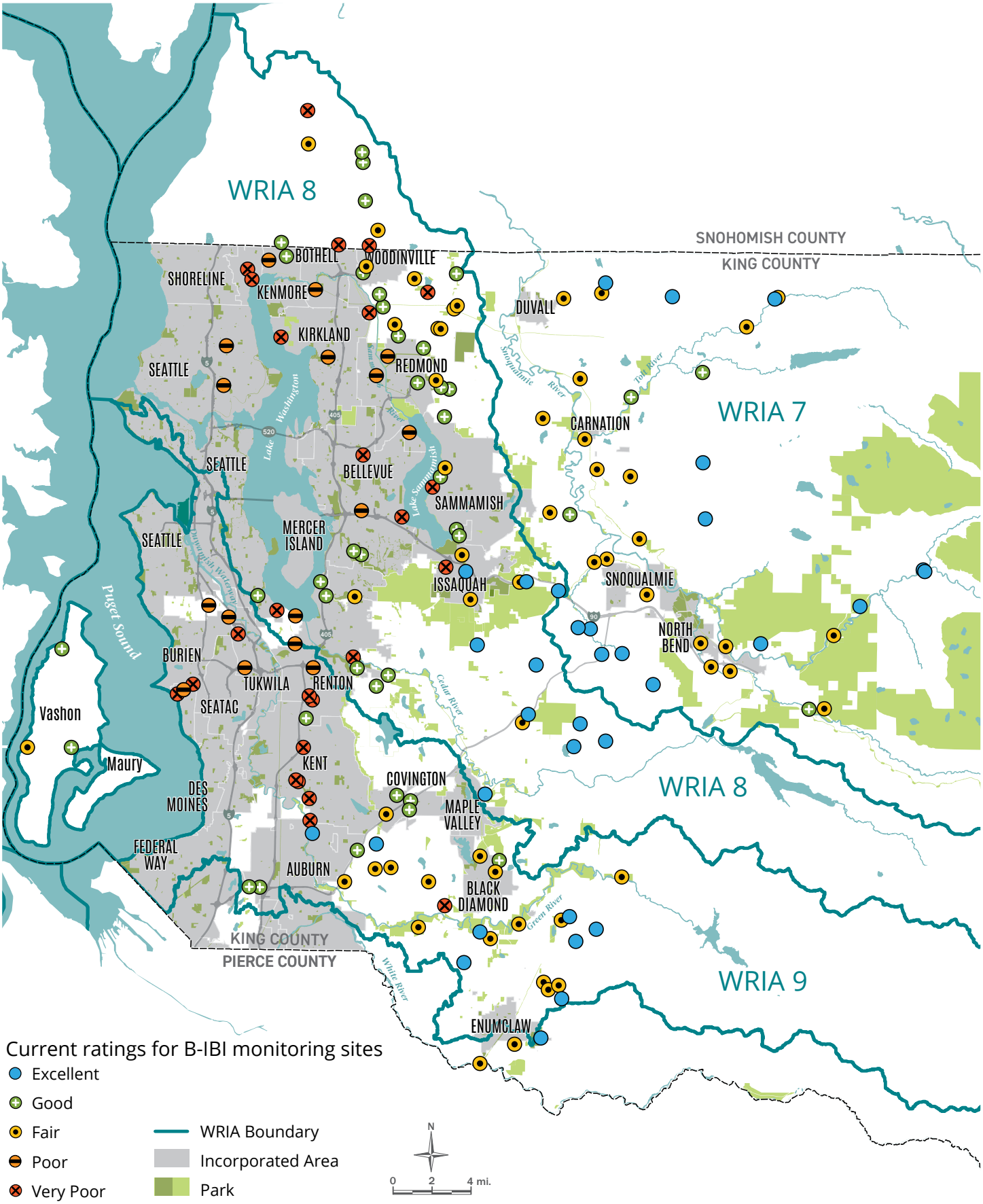
- When stormwater runoff enters water bodies and groundwater, it is without excessive contaminants, pathogens, or nutrients. Water levels and stream flows are healthy for fish and aquatic life.
- Waters that provide swimming, fishing, and shellfishing opportunities and/or drinking water are clean, healthy, and accessible.
- All lives, homes, and properties are protected from stormwater-related flooding and other damages. King County has taken targeted action to ensure water bodies that are in or important to predominantly BIPOC communities reach these goals promptly and thoroughly.

If we succeed, in 30 years...

Stream health is improving in more than 75 percent of monitored stream miles based on increasing B-IBI[13] scores and decreasing or stable flashiness, and over 60 percent of stream sites have “good” or “excellent” B-IBI scores or meet standards for stable flows. Evidence of progress will come from King County and partners via the Puget Sound Stream Benthos and streamflow measurements by King County, the U.S. Geological Service, and Snohomish County.

Our waters will not be harmed by human nutrient inputs.[14] All water bodies will have stable or decreasing trends in phosphorus and nitrogen concentrations.[15] Groundwater will meet drinking-water nitrate standards, and streams,[16] lakes,[17] and marine areas[18] that naturally have high nutrients will not be further impacted by human nutrient inputs. Evidence of progress will come from King County or Washington State monitoring programs that track nitrogen and phosphorus in rivers and streams, chlorophyll in lakes,[19] nitrates in groundwater, and dissolved oxygen in marine waters.[20]

King County Freshwater Benthic Macroninvertebrate Monitoring Sites



Reduced Toxics and Fecal Pathogens

This goal addresses the problem of toxic chemicals and fecal pathogens that pollute King County's aquatic food webs, closing swimming beaches and shellfish beds, harming fish and orca, and disproportionately impacting vulnerable fishing communities.

King County fishers often include people from low-income areas of King County who also have limited English proficiency and are BIPOC, immigrants, and/or tribal members. Washington State Department of Health advisories tell people they should not eat shellfish from local beaches or fish from local water bodies because they contain unsafe toxics and/or fecal pathogens, but many people continue to fish for sustenance and for cultural reasons.[21] Even as sediments are cleaned up and combined sewer overflows (CSOs) are controlled, fish consumption advisories are likely to remain in place for the Duwamish River, Elliott Bay, and some other water bodies because of ongoing local inputs and contamination entering from other areas. Closure of commercial shellfish beds in King County because of fecal pathogens further affects tribal communities that rely on shellfish harvesting for commercial, ceremonial, and subsistence purposes.[22]

In addition to affecting shellfish harvesting, waters contaminated with fecal pathogens from multiple routes, including CSOs, stormwater, and waterfowl, can make swimmers sick, keeping King County residents from enjoying local waters. Inequities also exist in the distribution of King County swimming beaches monitored for public health risk. The existing distribution of toxic contaminants and fecal pathogen monitoring sites, especially for swimming beaches, leaves large gaps in communities of color, areas with lower incomes and limited English proficiency, and immigrant and tribal communities, leading to inequitable assessment of public health risks. Toxics in fish and beach fecal pathogen monitoring on small lakes are rarely included except through special grants or contracts, thereby excluding unincorporated areas and cities that cannot afford monitoring resources.

Reaching the 30-year goal of Reduced Toxics and Fecal Pathogens means...

- Toxic chemicals and fecal pathogens in waters, sediments, and aquatic food webs are declining and the health of salmon, other fish, and resident orca is improving.
- King County is aware and capable of responding to fecal pathogen contamination from CSOs, pets, wildlife, failing septic and sewer systems, stormwater, and other sources, so that waters are safely managed and open for swimming and recreation for all people in King County.
- People can enjoy fish, crab, and other shellfish that are safer to eat, more plentiful, and sustainable.

If we succeed, in 30 years...

People can eat locally caught marine and freshwater fish and crab because their contaminants don't exceed safe levels. Evidence of progress will come from contaminant concentrations in English sole and smallmouth bass as compared to the Washington State Department of Health's human health consumption screening values for the general population. It is important to acknowledge the challenge of meeting human health consumption screening values for high-consuming populations in urban water bodies; these will also be tracked to show progress in tissue reductions compared to screening values. Data will come from the long-term King County monitoring program, Puget Sound Partnership Vital Signs Project, and local Superfund sites. King County will be on track to meet this goal if PCBs in these fish are declining. Reducing toxic exposures in the aquatic food web will make fish safer to eat for people, and will improve the health (i.e., growth, survival, and reproduction) of salmon, orca, and other wildlife that reside in King County waters.

Swimming beaches and shellfish beds are not closed due to avoidable fecal pathogen sources (e.g., sewer failures and overflows), and difficult-to-manage fecal pathogen sources (e.g., wildlife) are monitored and managed to avoid risk exposure. Evidence of progress will come from improved shellfish

bed classifications made by the Washington State Department of Health. Shellfish bed status can be used as a measure of fecal contamination in King County surface waters because improvements in shellfish bed status can be representative of regional improvements in the management of fecal contamination. Although a decrease in fecal contamination at a shellfish bed may not equate to a decrease in fecal contamination for a swimming beach in another water body, the impact of regional actions to manage fecal sources (e.g., CSO control, stormwater treatment, pet waste management) could be measured through tracking shellfish bed status. However, fecal contamination management will not be focused solely on shellfish beds.

King County will be on track to succeed if an increased number of swimming beaches are monitored, focusing on historically marginalized areas of the County, and the program is communicative and responsive to concerns. Swimming beach closures were considered as a measure, but the number of closures will be influenced by *where* and *how many* beaches are monitored. Beach closures often occur because of infrequent and ephemeral fecal contamination that is difficult to manage (e.g., waterfowl). Therefore, the goal is for a King County swimming beach program to identify when there is a concern at swimming beaches and to respond effectively to reduce public health risks and mitigate the source(s) of fecal contamination.

Functional River Floodplains

This goal addresses the problem of protecting and restoring the natural functions of floodplains to store flood waters, protect water quality, sustain habitat, and provide fertile soil for agriculture as our population grows. Historic development, agriculture, current land uses, and flood control efforts have contributed to the loss of functional and connected floodplain areas and vegetation. Functioning floodplains provide critical salmon habitat and are essential for salmon recovery and realizing tribal treaty rights to harvest salmon. Increasing summer water temperatures in streams and rivers are further stressing salmon populations, and heavy rainfall events are projected to become more intense with climate change, increasing the risk of flooding.

Functional floodplains provide many benefits to the people of King County in the form of water quality improvement, flood storage, habitat, employment, and local food production. The Lower Green River floodplain continues to be a vital employment center in King County, and the public has made significant investments to protect agricultural lands in the Snoqualmie, Sammamish, and Lower and Middle Green River valleys. The County recognizes that historic development and land uses in the floodplain have harmed and reduced habitat essential to support salmon populations, and that restoration of floodplain salmon habitat is essential for tribes to meaningfully exercise their treaty rights guaranteed by the United States.

A breakdown in these benefits affects King County residents inequitably. Salmon and traditional resources from floodplains are essential for local harvest opportunities, which sustain cultural, spiritual, and food resources for Indigenous people and native communities. Floodplains support an agricultural economy that provides business and employment opportunities for thousands of County residents, including historically underserved communities of color, while sustaining production of healthy local food that is in increasingly high demand by residents, especially with climate change. Long-standing and persistent inequities in income, health outcomes, access to safe housing, and exposure to pollution for BIPOC communities in King County lead to disparities in vulnerability to flood risks, water pollution, and access to resources, programs, and decision-making processes to reduce these risks.

Historically, efforts to reduce flood risk and manage floodplain land uses have often pitted interests against each other, creating a false choice between risk reduction and habitat, and conflicts over scarce land resources. Today, we seek integrated floodplain management approaches that reduce risks to communities, critical infrastructure, and agriculture while supporting and restoring floodplain functions and benefits. We will build on successful models for multi-benefit floodplain restoration, such as Floodplains-by-Design projects across the state, and the Fish, Farm, Flood Initiative in the Snoqualmie valley. Bringing a wide range of interests and voices to the table early to define desired outcomes, identify shared interests, and co-develop solutions are keys to success. Difficult compromises will still be required, but the integrated planning approach can provide a framework for these vital decisions. This integrated approach will embody our equity practices and principles to identify impacts and benefits and will engage with and support communities to co-create solutions.

Reaching the 30-year goal of Functional River Floodplains means...

- Floodplains are reconnected and revegetated in ways and places that produce significant gains in habitat and water quality, and;
- Reductions in flood risk to people and structures, while supporting agriculture and open space.
- Equitable access to programs and projects that reduce flood risk and allow post-flood recovery, and targeted support and priority access to land and capital for local food producers from BIPOC communities.

If we succeed, in 30 years...

There will be a 3,000-acre net increase in connected floodplain with native vegetation.[23] This quantity represents completing two or three large floodplain restoration projects each year for 30 years, which is an ambitious target. Evidence of progress will likely come from periodic floodplain assessments produced by the Puget Sound Partnership Vital Signs Revision Project, though corrections and improvements are needed. King County will be on track for success if the area of connected floodplain with native vegetation is increasing over time.

Stream temperatures across watercourses and floodplain areas will be stable or colder than at present, in spite of projected climate change.[24] Keeping these waters cool with riparian vegetation and protecting cold water inflows prevent excessive warming in mainstem rivers. Evidence of progress will come from measurements of water temperature in floodplain streams and rivers. The statistic to be used is the seven-day rolling average of the daily maximum temperature in widespread use across the region, as well as thermal diversity supporting cooler water across the landscape. Data for this measure will come from King County, the U.S. Geological Survey, Snohomish County, and the Puget Sound Partnership Vital Signs Project.

Better Fish Habitat

This goal addresses the decline of native wild salmon and steelhead populations[25] because the physical river systems and supporting ecological processes needed to sustain them and their freshwater[26] habitats are damaged or blocked by more than one thousand passage barriers in King County, alone.[27] The heavily modified attributes of lower watershed habitats are, in many cases, profound stressors to these populations. This problem inequitably impacts King County residents.

According to the Treaty Indian Tribes of Western Washington, *"Salmon recovery begins and ends with habitat."* [28] Reversing fish declines through better fish habitat are urgently needed for Indian tribes to fully exercise their sovereignty and associated rights guaranteed by treaties with the United States.[29] Court decisions in recent decades have repeatedly affirmed treaty rights for Western Washington tribes, particularly in relation to the tribal right to fish, the entitlement to half of the harvestable number of salmon, the establishment of tribes as co-managers of the salmon resource, and the duty to protect salmon habitat.[30]

Fewer salmon and other native fish reduce food available for orca and severely limit fishing opportunities throughout the region and the County. This includes fishing that provides income, recreation, and subsistence for BIPOC and low-income residents, immigrants, and other socioeconomically disadvantaged communities.

Reaching the 30-year goal of Better Fish Habitat means...

- Native, wild fish populations are thriving, widespread, and self-sustaining, with ample healthy habitat in streams, lakes, and bays.
- People can enjoy locally caught fish in abundance to provide spiritual, cultural, subsistence, economic, and recreational value.
- Tribes have abundant salmon to provide for their personal, economic, cultural, and spiritual prosperity.

If we succeed, in 30 years...

Juvenile salmonid survival will be increasing throughout all major watersheds. Evidence of progress will come from estimates of juvenile freshwater survival rates in the main King County rivers, except the White River.[31] This measure will integrate the trends reported by each Water Resource Inventory Area (WRIA) and the Lake Sammamish Kokanee Work Group. Each WRIA will use the metric they deem to be most appropriate for monitoring juvenile survival trends; this will be an intentional subset of all the available data to limit the scope to supportable inferences for each WRIA. In some cases, the most appropriate metric and methodology for this monitoring may require further development beyond the scope of current efforts.

There will be restored access to two-thirds of King County's salmon habitat and all of the King County kokanee habitat.[32] Evidence of progress will be the length of anadromous fish habitat access restored by the King County Fish Passage Restoration Program.

Resilient Marine Shorelines

This goal addresses pervasive environmental damage to marine shorelines by armoring them in response to coastal flooding and erosion; 83 percent of the marine shoreline in mainland King County and 48 percent of the coastline for Vashon-Maury islands are armored.[33] Armored shoreline refers to any artificial method (e.g., rip-rap, seawalls, or bulkheads) of reducing shoreline erosion. Coastal flooding and erosion impact public and private infrastructure and put coastal residents and businesses at risk. Shoreline armoring installed to protect property from natural processes[34] will be worsened by forecasted sea level rise.[35] Recent studies suggest that a sea level rise of 2 feet would create variable impacts and increase flood elevations between 0.5 and 6 feet depending on site-specific oceanographic conditions.[36] Sea level rise will affect communities throughout King County, including communities that have been historically underserved. Dealing with these changes will require significant resources, whether that means moving out of harm's way, adapting, or taking a defensive approach. King County will work to increase resilience in affected communities and engage communities so that they have a meaningful say in their futures. Defensive responses to rising waters that lead to further or ongoing habitat damage could impact tribal treaty rights and food and economic resources.

Reaching the 30-year goal of Resilient Marine Shorelines means...

- Water is clean and beach and marine shoreline habitats can grow and migrate[37] by accumulating sediments from eroding bluffs and fewer structures are in harm's way, even as sea levels rise.
- People along marine shorelines can live and work out of harm's way, functions provided by vital infrastructure are sustained, and residents' drinking water is fresh and clean.
- Ensure treaty rights can be meaningfully exercised on fish and shellfish that depend on healthy marine shorelines.

If we succeed, in 30 years...

There will be a 10 percent (7-mile) net reduction in armoring; 50 percent of new or replacement armoring will be soft armoring.[38] Evidence of progress will come from data on the net amount of coastline armoring as indicated by ongoing monitoring in WRIA 9 and by the Science and Technical Support Section in the Water and Land Resources Division. Evidence of a change in replacement armoring will come from monitoring noted above and from permit departments of marine shoreline jurisdictions.

There will be 10 percent fewer buildings in the coastal high hazard zone,[39] a reduction of approximately 70 buildings. Evidence of progress will come from the number of buildings[40] entirely or partially in the coastal high hazard area. These estimates will come from the King County Water and Land Resources Division based on a GIS assessment.

STRATEGIES

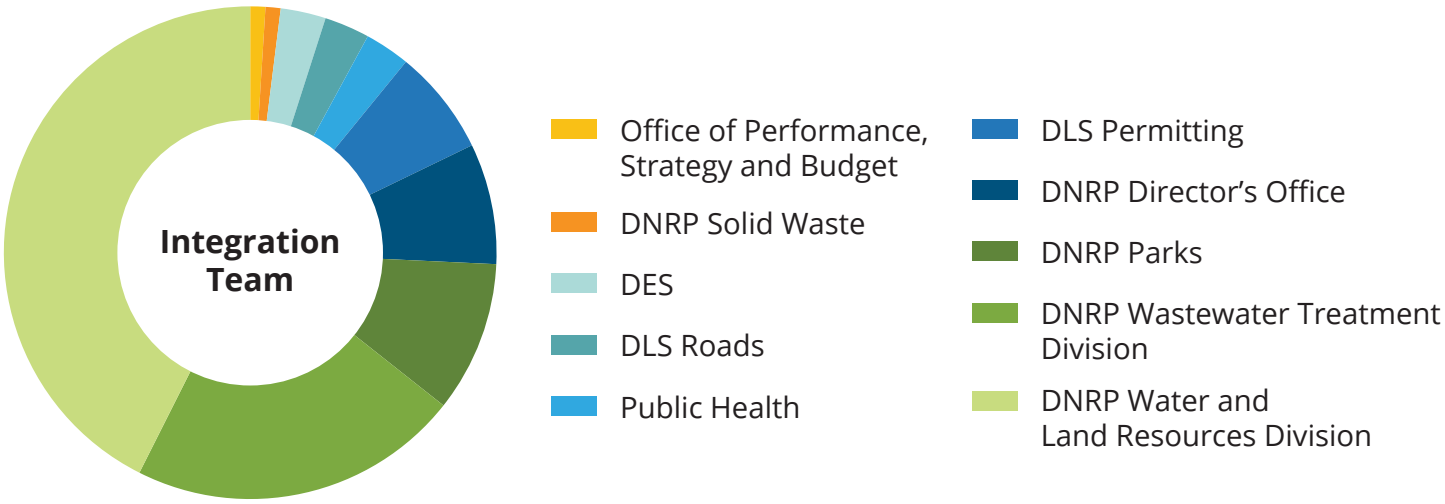
The vision for the Clean Water Healthy Habitat Initiative is to protect and restore the water and land that sustain all of us within a generation. This section presents 13 strategies to realize this vision. Consistent with the directives in the 2019 Clean Water Healthy Habitat Executive Order, the strategies will:

- require higher levels of integration across existing King County work programs;
- focus on coordinating work in similar geographies;
- seek to be consistent and coordinated with the 2020 Strategic Climate Action Plan (SCAP) and Equity and Social Justice Strategic Plan;
- pursue the 30-year goals in this strategic plan, even if it means challenging existing laws and regulations or scientific assumptions; and
- identify new funding sources, if necessary.

The strategies reflect an identification of barriers that prevent the delivery of better water quality or habitat outcomes. These barriers included:

- Capacity and workload;
- A culture that doesn't tolerate risk;
- Siloing of issues;
- Insufficient and constrained funding;
- Inconsistent or insufficient engagement with communities;
- Data gaps and a lack of prioritization;
- Regulations that don't deliver the best outcomes; and
- Information technology/data management inconsistencies.

Working with a central integration team that spanned the Department of Natural Resources and Parks (DNRP), Department of Local Services (DLS), Public Health—Seattle & King County (Public Health), the Department of Executive Services (DES), and the King County Executive Office, strategies were identified to address specific barriers to current work. As the lead environmental agency for King County, DNRP is designated as lead for most of the strategies. However, the strategies were designed to be broad enough to be able to be applied to a variety of work programs across the enterprise.



The strategies focus on "upstream" changes needed for existing functional plans—plans that are used to inform management of water and land resources in communities across King County—to have even better outcomes. Upstream issues control how the functional plans are implemented and include policies, practices, and systems that drive those plans and activities that need to be addressed to help King County achieve the greatest impact.

The following subsections organize strategies by themes and are consistent with the Clean Water Healthy Habitat principles outlined in the Introduction section of this strategic plan:

- Equitable Investments and Community Engagement
- Integration
- Standardization and Systems Approach
- Innovation
- Outcome-Driven Decision-Making

The strategies are organized by principle to highlight those that are most related and can support one another. For each strategy, we describe:

Opportunity statements: An explanation of how we can improve current work for better outcomes and connections across programs and the need for the strategy.

Strategy: Shorthand version of the key elements of the strategy.

Actions: What specific activities do we need to implement in the next five years to advance the strategy? What steps will we take, with whom, when, and with what resources?

Five-year targets: Targets focused on outputs of our actions. How are things progressing? Are we following the logic of the strategy? Do we need to adapt?

Lead(s) responsible for implementation, implementation support, and associated programs and partners. Who do we expect to lead the implementation of the activities, who will support the implementation, what partners will we depend on, and whose work program is expected to be impacted?

Finally, there are many strategies and actions that are launching in late 2020 and have adequate funding for the next two years, have specific leads identified, and are in the relevant employees' work plans. However, there are strategies in the following subsections that have not had resourcing needs identified and secured. As the Clean Water Healthy Habitat strategies move into implementation, involved managers and leadership will need to prioritize resources or secure additional resources through supplemental and future budget requests.

Equitable Investments and Community Engagement

Acronyms and Abbreviations for Agencies, Initiatives, and Programs

CIP	capital improvement program
CRM	Customer Relationship Management
CPMWG	Capital Project Management Working Group
CWHH	Clean Water Healthy Habitat
DES	Department of Executive Services
DLS	Department of Local Services
DNRP	Department of Natural Resources and Parks
FFF	Fish, Farm, Flood Initiative
KCIT	King County Information Technology
LCI	Land Conservation Initiative
Parks	King County Parks
Permitting	Department of Local Services, Permitting Division
Public Health	Public Health—Seattle & King County
Roads	Roads Services Division
RMFS	River and Floodplain Management Section
RRSS	Rural and Regional Services Section
SCAP	Strategic Climate Action Plan
SWD	Solid Waste Division
WaterWorks	WaterWorks Grant Program
WLRD	Water and Land Resources Division
WTD	Wastewater Treatment Division

The Clean Water Healthy Habitat Strategic Plan is consistent and coordinated with the Equity and Social Justice Strategic Plan, understanding that systemic racial discrimination is responsible for burdening Black, Indigenous, and people of color (BIPOC) communities with pollution and degraded habitat, leading to inequitable outcomes in their health, well-being, and economic prosperity. The following strategies are designed to provide guidance to decrease duplication, coordinate efforts, and ensure consistent data gathering, inclusiveness, shared language and vision, and staffing by those who are skilled at community outreach and engagements.

Strategy 1

Engage community partners to align delivery of County environmental services with community priorities and development of data that highlight current environmental inequities resulting from racial discrimination.

Opportunity statement:

The Clean Water Healthy Habitat (CWHH) goals were developed using mostly internal experts' understanding of the ecosystem and environmental values and priorities identified in previous community engagement efforts (Land Conservation Initiative [LCI], SCAP, and the Clean Water Plan). However, over the course of goal development, it became clear that there are still data and information gaps on racial inequities in environmental conditions and outcomes resulting from systemic racism. Further engagement of communities in the long-term vision for success and a full partnership in the development of solutions will ensure collaborative partnerships. This engagement must acknowledge, because of systemic racism, that any solutions must center authority in leaders committed to antiracist policies. Voices and know-how from community leaders and residents are essential to get to solutions that work and that are sustainable. Otherwise, there is a risk that existing systems perpetuate racial inequities in how the benefits of clean water and healthy habitat have accrued to people.

ACTIONS	5-YEAR TARGETS
1. Engage communities across King County to review six goal areas and modify the vision of success to meet community needs. Work within existing engagement processes (e.g., the Clean Water Plan, Open Space Plan, LCI, SCAP, etc.) to reduce redundancies.	• Updated CWHH goals centering authority and decision-making in communities and leaders committed to enacting antiracist policies. • Established data and maps for inequities related to CWHH goals, exploring connections between environmental conditions and Public Health "Community Health Indicators" by health reporting areas by watershed boundaries
2. Assess racial inequities in environmental conditions and outcomes (consistent, where possible, with the King County determinants of equity) to inform more equitable investments and ensure people universally benefit from clean water and healthy habitat. Explore the intersection of community health indicators, health resource areas, and environmental conditions.	

Lead: DNRP/Director's Office

Implementation support: DNRP, DLS, Public Health, Office of Equity and Social Justice

Strategy 2

Establish an equitable DNRP-wide community partnership vision, standards, and protocols.

Opportunity statement:

Recent efforts such as the SCAP and Open Space Equity Cabinet have emphasized developing deeper and more collaborative partnerships with funding for community-based organizations led by and in service of BIPOC professionals or leaders. As the department collaborates with communities disproportionally impacted by systemic racism, further policy guidance to reduce disparate and uncoordinated efforts by multiple parts of the same agency and to minimize potential adverse effects on partners and BIPOC communities is needed.

County policy provides guidance for staff on engaging the community in DNRP's projects and practices. The range of activity within the department includes strategic communication (web, social media, etc.), public involvement associated with projects or services, community advisory boards, grant-making, and myriad community partnerships with a growing and more diverse population.

Each division carries out community engagement activity using its own business processes to track the results of its activity. Project staff meet across the divisions on projects and to share information with community-based partners and the public.

ACTIONS	5-YEAR TARGETS
1. Convene internal/external stakeholders and identify the ways that DNRP divisions and programs are connecting with community partners.	• Department engagement protocols developed • Department-based tool needs identified, and tool creation scoped • DNRP shares tools and assists other departments to amplify impact
2. Identify how King County community engagement practices are being implemented across the four DNRP divisions and aligned with County departments to reach ESJ strategic goals.	
3. Develop standard protocols across the department for the coordination of community outreach, tracking, and reporting on activity, outcome, and impact.	
4. Identify current universal needs of department-based tool, based on the needs of how best to form lasting, meaningful community partnerships.	

Lead: DNRP/Director's Office

Implementation support: DNRP, DLS, Public Health

Strategy 3

Continue to promote more equitable hiring and contracting.

Opportunity statement:

Since the inception of equity and social justice (ESJ) work at King County, the County has been working to increase the diversity of its workforce to reflect the overall demographics of the county. Agencies need to continue to recruit, train, retain, and promote BIPOC people into critical positions and ensure departments reflect the diversity of the community.

In contracting, DES has been working to ensure the contracting approach promotes diversity and supports the growth and development of businesses owned by BIPOC individuals. Most recently, an innovative plan checklist was added to the contracting process to maximize the opportunities provided to minority- and women-owned business enterprises.

The Clean Water Healthy Habitat Initiative provides another opportunity to highlight the importance of delivering business and income opportunities to help repair racial inequities in wealth and opportunity caused by systemic racism and maintained by inequitable distribution of decision-making authority and power.

Integration is one of the key principles of the Clean Water Healthy Habitat Initiative. Integration in this context means the intentional identification of related County services and subsequent collaboration related to data needs, outreach, analyses, analytical tools, development of multi-objective priorities, and projects. By promoting integration across the programs that impact water and land, King County is able to leverage funding and staff resources, orient toward shared outcomes while also delivering on program goals, identify opportunities to find synergies in work, promote a better run government, and communicate the full story about what we are doing and why it matters.

ACTIONS	5-YEAR TARGETS
1. Workforce Development (Public Works Projects) – Support workforce development through the County's Master Community Workforce Agreement, Apprenticeship, and Priority Hire Programs, to improve access to employment and training programs for individuals who need access to paid training and family wage jobs.	• 15% overall apprenticeship rate • 21% overall Priority Hire rate • 21% overall utilization of certified small, minority-, and women-owned businesses • 100% use by County contractors for all formally advertised public works • >50% of all certified King County Small Contractors and Suppliers. (Review outcomes to determine if the technical assistance provided is resulting in increased participation by these small businesses on County projects.)
2. Economic Development (Consulting, Construction, and Goods and Services) – Use requirements, incentives, plans, and alternative procurement delivery methods to increase the overall utilization of certified small, minority-, and woman-owned businesses in County contracts for goods and services, technical services, consulting, and construction services.	
3. Enabling Technology – Use the Diversity Compliance Management System, a cloud-based solution for contractor payment reporting, labor compliance monitoring, workforce reporting, and ESJ justice utilization goals to measure economic and workforce development results.	
4. Technical and Business Development Assistance – Provide education and guidance to small business owners to support starting and growing businesses, including business planning, operations, marketing, access to capital, employee recruitment, and specialty training (e.g., e-commerce).	

Lead: DES

Implementation support: DNRP, DLS, Public Health

Integration

Strategy 4

Integrate capital planning and monitoring to maximize multi-benefits.

Opportunity statement:

There is opportunity to more closely integrate capital improvement programs (CIPs) across departments and divisions for improved, multi-benefit capital delivery that will result in better habitat and water quality outcomes consistent with the Clean Water Healthy Habitat goals. Orienting programs toward six shared Clean Water Healthy Habitat goals will be more effective and efficient if the work of the capital programs is more integrated. Improvements in effectiveness and efficiency should lead to better, faster results that yield a higher return on public investments.

Currently, CIPs are standardized and coordinated through the Capital Project Management Working Group (CPMWG) and each program's project management manual. Different departments/divisions rely on different types of information and processes. There is inconsistent adherence to CPMWG, and the continuous improvement efforts exist in silos for specific projects or, at best, within individual CIPs. This strategic plan promotes integration of the capital programs by establishing a shared responsibility to deliver on the six Clean Water Healthy Habitat goals

ACTIONS	5-YEAR TARGETS
1. Develop a spatial data platform for better coordination between programs working within watersheds over the entire project life cycle. A shared platform will raise the visibility of capital information, programs, plans and projects, maintenance, and stewardship across work programs.	• Countywide resource for information sharing and cross coordination of capital projects in the early planning and preliminary design phases to promote multi-benefit CIP delivery across all capital programs • Clear and specific guidelines and best practices document on how CIP teams should incorporate CWHH goals into early planning • Key performance measures and a system to monitor the implementation and outcomes from integration of CWHH goals into early planning • A reporting structure and frequency that would allow for regular review and input from subject matter experts and decision-makers on the progress of implementation • raining resource for CIP teams on these guidelines and best practices as well as the monitoring and reporting
2. Revise the project management manuals to orient toward shared goals for cost-effective and reliable budgeting, planning, and delivery of multi-objective projects and more standardization of terms, training, concepts, and decision-making processes.	
3. Formalize a continuous design improvement process that allows for sharing innovations, preserving knowledge, and collaboratively testing critical assumptions that affect risk, cost, and performance.	

Lead: CPMWG Leads, WLRD

Associated capital programs and implementation support: CPMWG members: Water and Land Resources Division (Stormwater Services, River and Floodplain Management Section [RFMS], Rural and Regional Services Section [RRSS]), Wastewater Treatment Division (WTD), Parks Division, Solid Waste Division (SWD), Road Services Division, Metro Transit Department, Facilities Management Division, King County International Airport, and the Office of Performance Strategy and Budget

Strategy 5

Integrate natural asset management.

Opportunity statement:

King County is in the process of defining and identifying our "natural assets." In the meantime, natural assets are considered to be the stock of natural resources or ecosystems that we rely upon, manage, or that could be managed by King County that provide one or more ecosystem services benefiting people and contributing to ecological integrity of terrestrial and aquatic ecosystems. Natural assets can range in scale from features (e.g., a mature evergreen tree) to sites (e.g., the Green River Natural Area) to ecosystems (e.g., the Snoqualmie Forest).[41]

Natural assets may be constructed (e.g., restoration projects or green stormwater infrastructure projects), but should mimic the functions, processes, and conditions of a natural feature of similar type and scale found in a healthy ecosystem.

Natural assets are currently not addressed in any of the 20-plus independent infrastructure asset management systems used across the County. Natural assets are currently managed across many different departments and divisions, each with unique and specific program goals. There is no overall system in place to inform the "state" of assets comprehensively. If it existed, such a system could reliably inform maintenance, the balance of performance with life cycle costs, and help achieve a target "level of service" for water quality and habitat at a level of risk that is acceptable to stakeholders, neighbors, and regulators.

ACTIONS	5-YEARTARGETS
1. Work with acquisition, restoration, and land managers to describe levels of service, risk tolerance for each natural capital project, expectations associated with designs, and work to identify ongoing natural asset maintenance funding source to extend and sustain the benefits provided by the project.	• Definition of natural assets for King County • Framework that links asset type to expected services provided • Inventory of King County's natural assets
2. Develop framework for natural assets and the services that they provide.	
3. Inventory natural assets based on public ownership. (Future analysis might include identification of the natural asset system, which could be comprised of both public and private assets.)	
4. Standardize planning and implementation of site maintenance (linked to the natural asset management strategy), effectiveness monitoring, and long-term stewardship to improve capacity and reliability and reduce waste while providing desired levels of service.	
5. Once inventory is complete, engage leadership to explore strategies for developing or adding on to asset management systems with natural asset information using the lessons learned from traditional infrastructure asset management systems (e.g., WTD). Concepts should include defining levels of service, identifying thresholds and goals for the portfolio's level of service, risk management, and identifying funding sources and amounts necessary to achieve the goal.	
6. Pursue third-party certifications to provide expectations for how assets should be maintained over time to achieve highest levels of service.	

Lead: Rural and Regional Services (WLRD)
Implementation support: DNRP/all, DLS
Associated programs: All programs that manage assets considered to be "natural"

Strategy 6

Shift the workplace culture to incentivize integration.

Opportunity statement:

Many current issues span multiple work programs across King County divisions and departments. The following issues could serve as the basis for more integration of those work programs:

- River and floodplain management
- Fish passage
- Open space management
- Drainage
- Bacterial source pollution
- Landslide response, reporting, and risk reduction
- Sea level rise
- Biodiversity (e.g., species and habitat work beyond salmon)
- Lake aquatic plant management
- Beach safety alerts

To integrate across work programs, more structure and networks are needed, including mechanisms to enable collaboration between programs and projects that have either funding limitations or restrictions on how funding can be used. Integration can also often be hampered by differing degrees of data integration (e.g., processes, platforms/systems, structure). Silos can result from the legal constraints on the use of different revenue sources. More management guidance may afford opportunities for collaboration.

ACTIONS	5-YEAR TARGETS
1. Develop and resource integration networks and teams with roles assigned, and communication defined, to research, analyze, and make recommendations on specific issues.	• Dedicated or a mix of funding sources identified for integrated work • Geographic networks established • Requirements for annual work plans and budgets include integration expectations
2. Leverage ongoing work in discrete geographies and/or communities.	
3. Work with managers to define the percentage of time (and budget) employees define annual work plans that will include work integration.	
4. To support integrated work programs, identify how existing funds can be leveraged and explore the potential for new funding sources.	

Lead: DNRP
Implementation support: DLS
Associated programs: All

Strategy 7

Create integrated data tools.

Opportunity Statement:

DNRP's data systems need to be updated to improve program visibility and consistent information use and increase opportunities to collaborate on planning, activity tracking, engagement, monitoring, and lessons learned. The current systems are resulting in duplication of effort and reduced cost-effectiveness. Although programs may not fully integrate their lines of business, there is need for a critical review of what should be visible and shared across programs on a common platform. This will reduce the independent data management and monitoring approaches across programs.

This strategic plan establishes 30-year goals and measures that define equitable environmental success for King County. Per the 2019 Executive Order, agencies should be "...responsible for both service delivery by their individual agencies and joint delivery of Clean Water Healthy Habitat outcomes in collaboration with other County agencies." Standardization of these goals across King County systems will help programs consider how they can support Clean Water Healthy Habitat outcomes, even if it was previously outside of their work program or mission.

ACTIONS	5-YEAR TARGETS
1. Develop platform capabilities to support integrated planning and multi-benefit opportunities, including information on existing conditions and future priorities, and current and future monitoring technologies.	• Unifying GIS Database for WLRD (WLRD Geodatabase) • Data Catalog, including ArcGIS Enterprise Portal and KCIT software selection • Cityworks Asset Management System • King County Hydrography Layers • Fish Passage Inventory • Capital Tracking Improvements • CRM (Customer Relationship Management) – Parcel Tracking System • Water Quality Benefits Evaluation results
2. Ensure that the platform allows for activity tracking that shows who the County has outreached to, when, and what followed.	
3. Ensure that platforms are adaptable to sustain ongoing operations of data teams and support integrated monitoring and standardized data management.	
4. Adaptively manage Water Quality Benefits Evaluation Tool.	

Lead: Stormwater Services (WLRD DNRP) and WLRD Data Team
Implementation support: DLS
Associated programs: Capital –RRSS, RFMS, Parks, SWD, Roads, Permitting, WTD

Standardization and Systems Approach

Strategy 8

Add multi-benefit criteria to King County grants and incentive programs.

Opportunity statement:

Although a number of DNRP's grants include "provides multi-benefits" as criteria, there are no standards for scoring multi-benefit projects. There is opportunity to better connect grants across stormwater, land conservation, and habitat restoration to help private landowners, King County municipalities, and other partners increase the clean water and healthy habitat benefits their properties can provide.

ACTIONS	5-YEAR TARGETS
1. Assess current grants and incentives criteria for whether or not they explicitly advance the six CWHH goals, including environmental outcomes, benefits to people, and racial inequities in outcomes. Adjust criteria where possible; focus on the goals more than associated measures, which are expected to evolve over time.	• Updated criteria and scoring standards • Technical assistance and spatial platform • Publication/ platform for sharing stories from grant recipients • Metrics established • Outreach/cross-promotion on website tied to CWHH goals
2. Develop materials (e.g., technical assistance guide) and networks across grant and incentive programs to support information sharing, identification of opportunities, and improved technical assistance to applicants. Review grant eligibility criteria to identify opportunities for bundling multiple grants and other non-grant County funding into single projects (i.e., verify match eligibility).	
3. Develop spatial platform that allows stakeholders to easily identify priority areas in the County by incentive program and/or grant opportunity (e.g., RainWise priority basins).multiple grants and other non-grant County funding into single projects (i.e., verify match eligibility).	

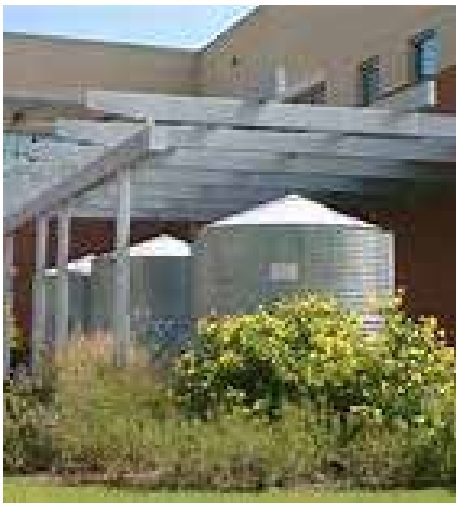
Lead: DNRP grant program managers

Implementation support: None

Associated grant/incentive programs: RainWise, WaterWorks, Parks levy grants, Conservation Futures Program, Green Stormwater Infrastructure Incentive Program

Strategy 9

Update the Green Building Sustainable Infrastructure Scorecard.



Opportunity statement:

Since 2009, when King County created the Green Building Sustainable Infrastructure Scorecard, best management practices have improved. The scorecard needs to be updated to incorporate best practices and align with Clean Water Healthy Habitat 30-year goals. The Green Building Sustainable Infrastructure Scorecard is expected to be updated in 2021 to align with the updated SCAP, so it is timely to also include CWHH goals.

To be successful, the Clean Water Healthy Habitat Initiative depends on innovative problem solving and advancements in technology, data analytics and visualization, market mechanics, and novel partnerships to solve our most pressing environmental challenges. We also want to practice continuous improvement; in other words, to check and adjust model.

ACTIONS	5-YEAR TARGETS
1. Review scorecard credits for relevance to Clean Water, Healthy Habitat and redesign criteria to include CWHH goals in the update process that also consider ESJ, SCAP, resiliency, and adaptation.	• 2021 – Review and develop scorecard credits and guidance language • Mid-2022 – Roll out new credits and provide training • 2023 – New credits will be online and used by projects
2. Consider how the natural asset management and environmental market strategies complement the scorecard.	
3. Provide support and training at CPMWG and review support tools (PRISM, guidance, checklists).	
4. Work with the office of Performance, Strategy and Budget to ensure that they deliver the new criteria to planners and budget staff across the enterprise.	

Lead: DNRP/SWD
Implementation support: DNRP/all, DLS
Associated programs: CPMWG, Green Building Team

Innovation

Strategy 10

Promote employee-generated innovation.

Opportunity statement:

There is opportunity to greatly increase support for employees to elevate their innovative ideas. By increasing opportunities for continuous improvement, we avoid entrenchment of status quo, and more effectively respond to complex challenges (climate, COVID-19, etc.). Supporting innovation empowers staff, supports diversity, improves employee engagement and morale, and is likely to increase efficiency and integration.

ACTIONS	5-YEAR TARGETS
1. Develop an employee-led "Innovation Panel" with a standard review process and rotating participation among employees.	• Trial Innovation Panel pilot and a process created to test and refine innovation review • Employee recognition for participation • Database and training developed
2. Evolve the "Bright Ideas" program with lessons learned to a department-wide database that creates a transparent record of innovative ideas from employees and supports the Innovation Panel.	
3. Support innovations by managers charged with protecting County investments, staff safety, and project due diligence when ideas are backed by the Innovation Panel through the Lean maturity model, work plan development, technology support, and trainings.	
4. Provide incentives for work groups that are developing and forwarding innovative ideas (reward employees and their supervisors).	

Lead: DNRP Director's Office
Implementation support: None
Associated programs: All

Strategy 11

Pursue innovative funding mechanisms.

Opportunity statement:

With concerns about the ever-increasing cost of living at the forefront in King County, we cannot continue to rely as much on utility rates for new policies and programs. The County, alongside city and nonprofit partners, has an opportunity to develop new policies and programs that could bring about substantial new or reprioritized funding streams. In addition, developing new mechanisms, such as markets, will address the concern that regulatory frameworks often constrain water quality or habitat benefits by mandating uniform approaches that can be more expensive and less beneficial than off-site work.

Regulations and policy—both internal and external—guide how we invest public dollars, do long-term planning, manage land use, and implement projects. The Clean Water Healthy Habitat Initiative intends for King County to use science and technical analysis to identify changes in natural resource management capable of delivering the best outcomes. The intent of this strategy is to examine and challenge internal and external laws, regulations, policies, and barriers that prohibit the County from achieving the best environmental results in the near and long term.

ACTIONS	5-YEAR TARGETS
1. Explore adjustments to existing governmental funding sources, including convening a strategy group to address long-term funding for Conservation Futures Tax, per recommendations by LCI Advisory Committee and Open Space Equity Cabinet. Solutions could include a state legislative action, voter initiative, or other alternatives.	• Strategy for Conservation Futures Tax implemented • Transfer of Development Rights policies reshaped • Private landowner feasibility completed for Carbon Credit program • Stormwater In-Lieu Fee program developed • Recycled water market explored • Connections between environmental markets established • Mitigation programmatic approach for fish passage projects with co-manager support
2. Expand and improve environmental markets, including: • Consider adding more Transfer of Development Rights incentives for salmon habitat. • Work with the Carbon Credit program to explore the feasibility of certifying private forest owners. • Explore the feasibility of a Stormwater In-Lieu Fee program. • Explore opportunities to use recycled water to recharge aquifers, enhance wetlands, or augment stream flow through generation of credits for permit-exempt wells. • Identify options to blend King County market programs on the same parcels for maximum environmental gain.	
3. Explore access to new financing techniques through private–public partnerships, environmental impact bonds that deploy private capital, and other novel approaches.	

Lead: DNRP market programs leads and the LCI team

Implementation support: All that could have a need to mitigate for capital project impacts

Existing programs and markets: Forest Carbon Program, Transfer of Development Rights, Fish Passage Restoration Program

Potential programs and markets: Stormwater In-Lieu Fee, stormwater flow credit, Recycled Water Program

Outcome-Driven Decision-Making: Regulations and Policy

Strategy 12

Develop regulatory alternatives for improved environmental outcomes.

Opportunity statement:

Regulations often establish a standard to address a condition in the same way at every location, which can lead to a limited water quality or habitat benefit. They can force in-place work, a specific technology, or a one-size-fits-all approach, resulting in more expensive solutions for less benefit than other solutions, such as off-site work, could offer. Additionally, some regulatory frameworks are outdated and do not consider climate or equity impacts and are not the most durable and efficient solutions.

Many regulations presume that best management practices are delivering the best outcomes, but actual outcomes are not evaluated. Few incentives in the current regulatory framework promote innovation or prioritize the most important problems or most impactful actions. Moreover, regulations only apply to actions that follow the rule development and may not address problems or sources pre-dating or outside of the rules. Through this strategy, there is opportunity to assess the best outcomes believed possible followed by an assessment of how best to achieve those outcomes, working closely with partners and regulators.

ACTIONS	5-YEAR TARGETS
1. Explore point source and non-point source nutrient reduction alternatives such as offsets or trading in King County and Puget Sound-wide in marine and fresh water.	• Mitigation programmatic approach for fish passage projects with co-manager support • Nutrient regulation flexibility • Approved Clean Water Plan • Renegotiated Consent Decree • Implementation of test case using stakeholder-approved Fish, Farm, Flood (FFF) variable width buffer recommendations in the Snoqualmie Agricultural Production District
2. Explore suites of programs and projects regardless of political jurisdiction through the Clean Water Plan and Stormwater Investment Plan processes that could offer better water quality outcomes than those currently being achieved.	
3. Develop alternatives that would allow jurisdictions with combined sewer overflows to implement an integrated water quality improvement plan to achieve equivalent or better water quality outcomes.	
4. To deliver the greatest habitat gains in the shortest amount of time while fulfilling responsibilities to tribal nations, work with co-managers and partners to develop a process that allows jurisdictions to redirect funds from high cost, low habitat value fish passage barrier remedies to high-priority, high habitat gain barrier remedies.	
5. Review findings of the FFF Regulatory and Buffer Task Force for synergistic local and state actions that could improve or protect water quality and habitat while also supporting food security and production goals.	

Lead: The Executive Office and DNRP

Implementation support: The Executive Office

Associated programs: Clean Water Plan team, Combined Sewer Overflow Program, Water Quality Benefits Evaluation tool, Stormwater Services, Fish Passage Restoration Program, FFF

Strategy 13

Develop and implement a DNRP/DLS interdepartmental work plan and policy framework.

Opportunity statement:

This strategy creates a framework for improved interdepartmental coordination, collaboration, and efficiency between DNRP and DLS to achieve better clean water and healthy habitat outcomes.

DNRP and the DLS Road Services Division coordinate regularly across capital planning and project delivery for stormwater, fish passage, restoration, and other programs. Coordination is critical to align prioritization and funding of projects and programs. This strategy will better integrate work across both departments.

The DLS Permitting and Road Services divisions and several DNRP divisions work together on behalf of a variety of environmental outcomes, including delivery of DNRP capital projects; identification of best available science to inform County action; ensuring that environmental protection is factored into the King County Comprehensive Plan land use policies and subsequent land use decisions; and protection of open spaces, including agriculture and forestry. Currently, interdepartmental coordination takes place on an as-needed basis and there is no formal interdepartmental structure or process in place to hold programs accountable for achieving desired outcomes. Anticipated DNRP/DLS interdepartmental coordination within the next five years includes at least the following actions:

- Amend King County code to support unincorporated King County road projects addressing frequently flooded roads, while improving habitat;
- Amend code to improve agricultural drainage while protecting fish habitat;
- Create efficient permitting pathways for habitat, multi-benefit, and public safety projects;
- Improve compliance with shoreline protections;
- Evaluate alternatives for DNRP to demonstrate compliance with regulations for discrete activities such as habitat, flood, and shoreline regulations;
- Identify categories of restoration and multi-benefit flood-risk reduction actions that provide for efficient DNRP/DLS outcomes;
- Investigate alternative permitting pathways that provide for joint DNRP/DLS permitting responsibilities for restoration projects;
- Amend King County code to align green stormwater infrastructure permits and landscaping requirements; and
- Improve coordination and oversight of stormwater site plans.

ACTIONS	5-YEAR TARGETS
1. Create a DNRP/DLS interdepartmental team to generate an annual DNRP/DLS interdepartmental work plan, to be approved at the department leadership level, with explicit staffing, timelines, roles, and expectations, to address the following: • Clarify the intended approach and dedicated resources (e.g., task force) for integrated capital and programmatic work. • Identify, advance, and achieve shared legislative priorities—policy, regulatory or code changes—in the interdepartmental work plan, as informed by County leadership, interdepartmental work programs, and the work of the Agency Review Team. • Implement the Agency Review Team and accompanying standard processes to expedite the permitting phases of DNRP/DLS capital projects.	• Annual work plans identified, sufficiently resourced, and completed • Shared capital and programmatic goals developed and completed • Shared legislative agenda developed and completed

Lead: DNRP/DLS **Implementation support:** TBD

IMPLEMENTATION

Beginning in 2021, everyone from the County Executive to managers to frontline employees will begin implementing the Clean Water Healthy Habitat strategies. Given the upstream nature of the strategies, implementation will be varied across the enterprise. Employees from the Department of Natural Resources and Parks will continue to monitor the progress of strategies toward the five-year implementation targets. Accountability will be tracked through implementation plans, key programs' annual work plans, and an annual review of progress. At the end of the first five-year period (2025), the targets will be evaluated, and strategies will be adjusted or updated based on lessons learned.

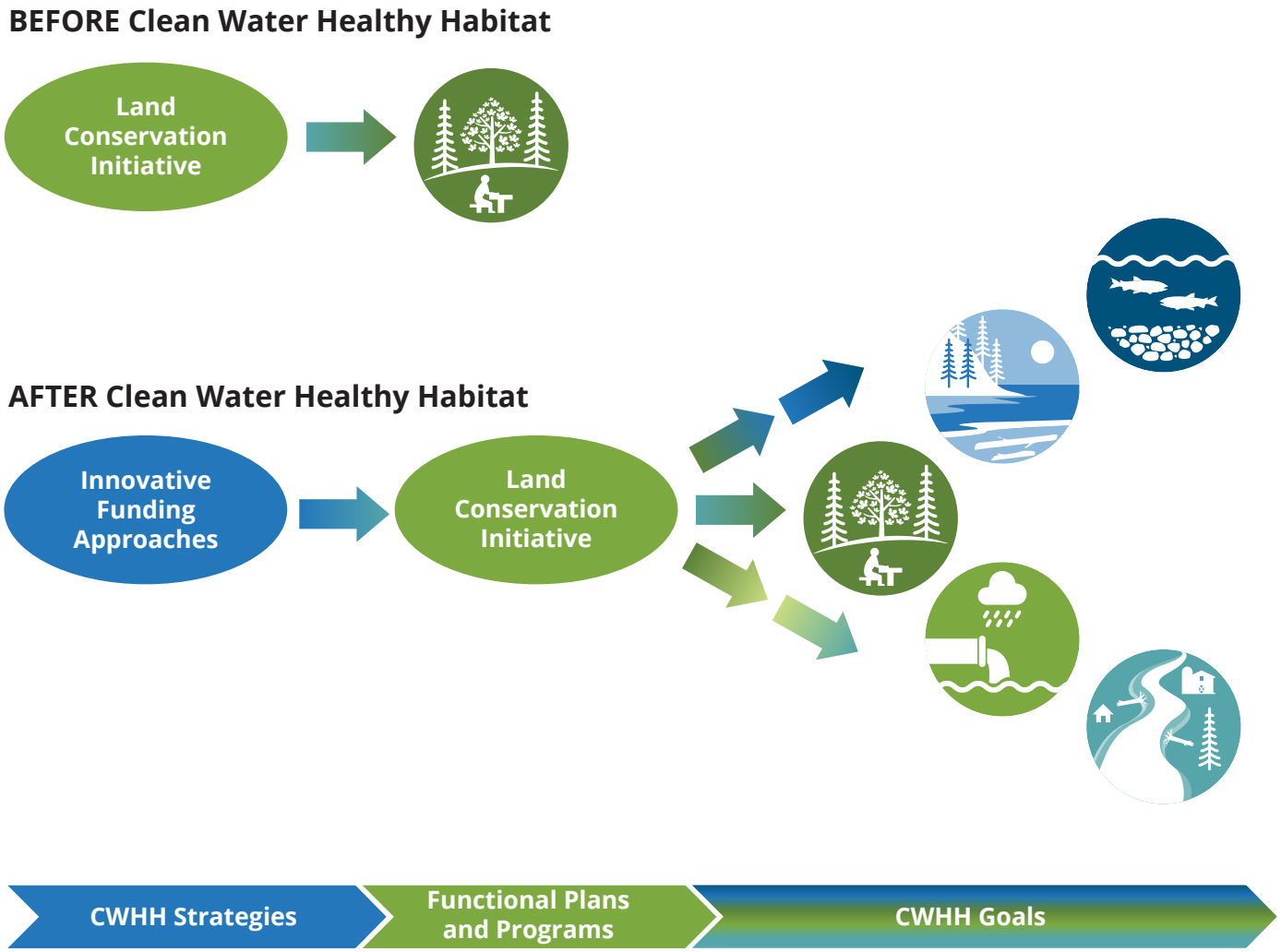
The implementation of individual actions and the five-year update will be done in coordination with the 2025 Strategic Climate Action Plan to continue to strengthen alignment across climate preparedness and building resilient communities. There will be a deliberate effort to reduce duplication because there are many synergies and actions across the two plans that focus on the same programs. The status of measures will also be updated every five years, working with functional plans that are expected to contribute to progress.

✓ Direct Nexus

✓ Opportunity for Multi-benefit

Functional Plans						
Clean Water Plan	✓	✓	✓	✓	✓	
Long Term Control Plan		✓	✓	✓		
Sediment Management Plan (WTD)				✓		
Salmon Recovery Plans	✓	✓	✓	✓	✓	✓
Surface Water Investment Strategy		✓	✓		✓	✓
Solid Waste Comprehensive Plan		✓		✓		
Fish Passage Restoration Program		✓			✓	
Flood Hazard Management Plan	✓		✓		✓	✓
King County Comprehensive Plan	✓		✓		✓	✓
30-Year Forest Health Plan	✓	✓	✓		✓	✓
Local Hazardous Waste Plan		✓		✓		
Parks Open Space Plan		✓	✓	✓	✓	✓
Pollution Identification and Control		✓		✓		
Land Conservation Initiative	✓	✓	✓		✓	✓
Strategic Climate Action Plan	✓	✓	✓		✓	✓
Hazard Mitigation Plan	✓		✓			✓

King County already has plans and programs The matrix on the previous page shows the current understanding of where plans and programs across the enterprise that address water quality and habitat are expected to support progress toward each of the six goals of the Clean Water Healthy Habitat Strategic Plan. The ability to deliver on multiple goals and the progress toward attaining those goals will be assessed over time. Where there has been little progress, assumptions will be reconsidered and updates will be made.



As shown in the graphic above, the success of the strategic plan will also depend on those leading plans and programs to deliberately expand the focus of their current work. Where possible, plans and programs should attempt to reach beyond the traditional services delivered to find multi-benefit opportunities. The shared sense of responsibility to widen the focus to accelerate and improve upon multiple goal areas will ensure a successful path forward.

Oversight

The Clean Water Healthy Habitat Leadership Team will continue to meet through 2025 with added support from the Department of Local Services and the King County Executive Office. The leadership team will be responsible for assessing progress and approving changes in direction with ongoing strategies as well as identifying and securing resources needed for effective implementation.

Funding

Insufficient funding is a chronic constraint on environmental work. The County has to be mindful of affordability issues while also identifying actions that are the highest priorities for investment. As strategies are implemented, there are likely to be unforeseen costs. These needs will be identified and addressed, either by shifting funding to the greatest need, developing creative funding solutions, or leveraging and optimizing existing resources where possible.

Partner Engagement

The commitment of the first five years of the Clean Water Healthy Habitat Strategic Plan is twofold: to be dedicated to better outcomes through addressing urgent needs and demonstrating that a large government with siloed work can become more integrated. As the principles, goals, and strategies are applied throughout the enterprise, we will turn our attention to external partners. Because of the systems-nature of environmental work, success is only possible with close, ongoing collaboration. By working with regulatory agencies, tribes, local governments, communities, and nonprofit partners to leverage investments toward the best and most equitable outcomes, it will be possible to achieve success across jurisdictions and, increasingly, across the Puget Sound region.

CONCLUSION

The Clean Water Healthy Habitat Initiative constitutes a promise to deliver better, faster results that yield a higher return on public investments. This strategic plan will guide work over the next five years according to five principles in the Executive Order: equitable investments, integration, systems change, innovation, and outcome-driven decision-making. The people of King County should be engaged to help refine—and, over time, even revise and revamp—the goals affecting their lives and uniting us all. And, as this strategic plan is implemented, the people of King County have a right to equitable benefits from our pursuit of shared, universal goals. Targeted action is needed to identify and eliminate racial inequities in how these universal benefits accrue to people. Our success depends on all employees embracing a new way of doing business.

Through the Clean Water Healthy Habitat Initiative, a legion of public servants—the employees of King County—are empowered to deliver to residents the promises made by the initiative. This strategic plan is a call to action for those public servants to help advance the Clean Water Healthy Habitat initiative with their work programs. They are empowered to collaborate and share bright, new ideas with others, and to have decision-makers respond to those ideas in a creative process. By sharing information and spreading good ideas, new opportunities will be revealed, helping others in their work, accelerating progress, and generating cost savings. Employees are also empowered to explore new funding sources because shared goals are hard to reach through efficiencies alone. Lastly, and most importantly, in some cases employees are empowered to challenge regulations when they act as barriers instead of bridges to shared goals. The needs are urgent, and we are totally committed to achieving the goals without delay.

As the Clean Water Healthy Habitat Initiative is implemented, adjusted, and improved upon over time, King County will solidify its role as a leader in environmental work, supported by evidence, targeted to undermine inequities created by systemic racism, and led by priorities co-created with communities. The collective effort will address the County's core obligation to protect and restore clean water and healthy habitat through regional land use decisions, transportation operations, utility management, and pollution prevention and cleanup. As King County pivots to new ways of achieving better outcomes, we will work with partners to move toward regional success. If successful, we will achieve a lasting legacy in the form of improved water quality and green spaces to protect the health and well-being of the County's 2.25 million residents, tribal treaty rights, and the iconic species that call this region home.

Notes

[1] Also known as ecosystem services, these are services derived from clean water and healthy habitat that produces good outcomes for people

[2] Forest cover has held steady in rural parts of King County over recent decades, while forest cover in cities declined from 23 to 18 percent from 1992–2016 (a loss of more than 10,000 acres). Forest cover in urban unincorporated areas saw a greater decline, from 37 to 29 percent on average (a loss of approximately 2,000 acres). Although rural forest cover is steady, the health or condition of those forests is lacking, preventing future losses in cover while accommodating a projected increase of nearly 800,000 new households in the Puget Sound region by 2050. Additional pressure on rural forests and unincorporated areas may result from shifts in housing patterns driven by remote workers, whose numbers have abruptly increased in response to the COVID-19 pandemic.

[3] Frumkin, H., G. Bratman, S.J. Breslow, B. Cochran, P. Kahn Jr., J. Lawler, P. Levin, P. Tandon, U. Varanasi, K. Wolf, and S. Wood. 2017. Nature contact and human health: A research agenda. Environmental Health Perspectives.

[4] Other plans including the Land Conservation Initiative, Open Space Equity Cabinet Reports, and SCAP share the goal of preventing displacement and gentrification, though specifics have yet to be worked out.

[5] A. Dale and L.L. Newman. Sustainable development for some: Green urban development and affordability. Local Environment. Vol. 14, No. 7, August 2009, 669–681; A. Rigolona and J. Németh. "We're not in the business of housing:" Environmental gentrification and the nonprofitization of green infrastructure projects. Cities: The International Journal of Urban Policy and Planning. 2018.03.016

[6] Quality green space is defined as land that: (1) is open, safe, and inviting to the public; (2) remains mostly vegetated to provide opportunities for nature contact; (3) is restored and maintained to contribute to public and environmental health; and (4) includes culturally relevant, developed infrastructure that encourages community use without compromising the environmental values of the land.

[7] King County, through the Land Conservation Initiative, selected the distance indicators used as a measurable proxy for this walkability indicator. One-quarter mile was used as a proxy for a 10-minute walk in areas within the King County Urban Growth Boundary. For portions of the County outside of the Urban Growth Boundary, a two-mile radius was used as a proxy for a 10-minute drive.

[8] The County refined mapping of priority open space equity areas through in-depth and independent community engagement and outreach work.

[9] Together, the SCAP and Land Conservation Initiative aim to invest at least $160 million in opportunity area acquisitions over the next 30 years.

[10] The 30-Year Forest Plan will address issues related to forest condition and outlines seven priorities: climate, forest health, urban forest canopy, human health, salmon habitat, water quality and quantity, and sustainable timber industry.

[11] Currently, more than 50 percent of stream site B-IBI scores are "good" or "excellent." Across all sites monitoring annually, more than 50 percent of stream miles are improving (upward trend in B-IBI) and approximately 25 percent are degrading. Streamflow flashiness (RBI) is getting better (i.e., declining) at 40 percent of the flow measurement stations and getting worse (i.e., increasing) at 38 percent of stations.

[12] Benthic Index of Biotic Integrity. Biological condition of stream sites and their surrounding habitat based on the diversity and relative abundance of the benthic (bottom dwelling) macroinvertebrates. Ten measures of biological condition are scored and summarized as the B-IBI, which ranges from a score of 0, indicating a very poor stream condition, to 100, indicating excellent condition.

[13] Some of King County's water bodies, especially Puget Sound, also receive nutrients from human sources outside of King County. Those external nutrient sources are beyond the scope of the Clean Water Healthy Habitat Initiative.

[14] Forty-two percent of streams in King County have elevated and/or increasing nutrient concentrations; of these, 38 percent are improving (i.e., have decreasing nutrient concentrations). This target focuses on high nutrient levels because they are known to be problematic; low nutrient levels are not a known environmental problem and so are not the focus of this target.

[15] Currently, no groundwater monitoring stations or drinking-water systems have elevated nitrate concentrations.

[16] One-third of small lakes in the county have concerns due to high and/or increasing chlorophyll concentrations; 30% of small lakes have improving (decreasing) trends in chlorophyll. Lakes Washington and Sammamish have improved substantially since wastewater discharges were removed from these lakes in the 1960s, and nutrients have generally stabilized since at least the 1980s.

[17] King County's marine water quality monitoring data indicate that dissolved oxygen conditions in areas of the Central Basin of the sound are generally healthy and stable without detectable increasing or decreasing trends over time.

[18] Thirty-seven small lakes are monitored through the volunteer Lake Stewardship program. They include a range of urban to rural watersheds, but are not a representative subset of lakes in the County. Some of the lakes with high chlorophyll concentration may be due to natural factors; this is an important data gap.

[19] The issue here is how nutrients, under certain conditions, contribute to low dissolved oxygen and nuisance or toxic algae blooms. In fresh waters of King County, reliable evidence suggests nutrients have negative impacts responsive to nutrient controls. In Puget Sound, however, a large portion of nutrients enter with ocean waters, so long-term changes in water circulation drive dissolved oxygen levels. Human impacts are believed to be small by comparison.

[20] Currently, Washington State Department of Health has fish consumption advisories limiting the amount of meals of certain fish and Dungeness crab that can safely be eaten because of PCBs or, in the case of rockfish, because of mercury. These advisories include King County waters such as Elliott Bay, the Central Basin of Puget Sound, Duwamish River, Lake Washington, and Green Lake. The advisories differ per water body, but all have some limitation on consumption for health risks due to PCBs or mercury.

[21] As of August 26, 2020, 71.4 percent of classified shellfish beds in King County are open. Trends may be evaluated using Washington State Department of Health data. King County has two major efforts that are meant to maintain and upgrade shellfish beds: Poverty Bay Shellfish Protection District and the Vashon-Maury Pollution Identification and Correction Project. As of 2020, the Vashon-Maury project is thought to have improved water quality by correcting failing septics. Subsequently, 493 acres of shellfish harvesting areas have reopened.

[22] Floodplain function is assessed using connectivity to floods, land cover, and land use for the rivers of Puget Sound. In many cases, connectivity also means the river channel can migrate and adjust over time. Areas that have natural land cover and unrestricted river flow are expected to be the most functional and provide the most ecosystem services. Floodplain areas with non-natural land cover and restricted river flow due to constraints (e.g., roads, railroads, levees) will have impaired or loss of floodplain function.

[23] Trend analysis will be challenging because of missing data and data of questionable quality at times due to the difficulty of collecting continuous data over a wide network.

[24] Juvenile salmonid survival across King County is mixed. Here we focus on Chinook and kokanee, which have been at dangerously low abundances for several decades. Juvenile Chinook survival in the Snoqualmie River over the past eight to 10 years is not known, but the number of juvenile Chinook outmigrating from the Snoqualmie River from 2017–2019 was at least double that of each of the previous 10 years. In the Green-Duwamish River watershed, there are no discernible trends in juvenile Chinook survival. Juvenile Chinook survival (as measured by egg-to-migrant survival, including tiny fry and medium-sized parr) out of the Middle Green River has averaged 6.76 percent over the last 10 years; however, fry-type migrants experience very low survival after leaving the Middle Green River and are significantly underrepresented in adult spawners. Young kokanee salmon in the Lake Sammamish watershed in both the stream and lake environments is highly variable between years. While the long-term survival trend in streams is generally stable, the long-term survival trend in Lake Sammamish is likely downward. In the Lake Washington/Cedar/Lake Sammamish Watershed, average juvenile Chinook egg-to-migrant survival in both the Cedar River and Bear Creek surpassed 2025 salmon population goals over the last 10 years. However, in a 20-year study, juvenile parr migrating from the Cedar River and Bear Creek show severely low and worsening survival rates through Lake Washington and the Lake Washington Ship Canal. Young kokanee salmon in the Lake Sammamish watershed in both the stream and lake environments is highly variable between years. While the long-term survival trend in streams is generally stable, the long-term survival trend in Lake Sammamish is likely downward.

[25] Nearshore habitat is also critical for Chinook salmon, especially in the Green-Duwamish River, and accordingly this habitat is addressed in the Resilient Marine Shorelines goal.

[26] There are an estimated 1,000 fish passage barriers that King County owns or operates. Of these, 200 to 400 existing barriers likely would need to be remedied to restore access to two-thirds of the stream habitat that they block salmon from reaching. Since 2000, King County has remedied 175 County barriers. The pace of fish passage restoration by the County was highest in 2002–2005 when the County had an annual average of 17 fish passage restoration projects. Since 2010, the County has remedied an average of five barriers annually. In 2019, the County initiated the Fish Passage Restoration Program with the goal of significantly accelerating the rate and habitat benefits of restoring fish passage at County barriers. The program goal aligns with the Clean Water Healthy Habitat goal of restoring access to salmon habitat by 2050, and will be achieved by increasing the investment and pace of barrier removals that provide the best habitat outcomes.

[27] Treaty Rights at Risk, A Report from the Treaty Indian Tribes in Western Washington, July 14, 2011.

[28] https://nwifc.org/member-tribes/treaties/

[29] For the treaty right to have meaning, there must be fish to harvest (https://nwifc.org/w/wp-content/uploads/downloads/2014/10/understanding-treaty-rights-final.pdf)

[30] The goal of better fish habitat encompasses White River Spring Chinook as they are a valuable component of the Puget Sound Fall Chinook recovery effort. They are not included in the survival targets because the County's ability to affect this population is mostly limited to Boise Creek, which is not believed to be a critical source of mortality limiting the population.

[31] Based on relationships for other barrier inventories, King County should be able to achieve this by remedy of less than half of the County barrier inventory (a caveat is that accounting for non-County barriers makes defining this trickier). The scope of the Fish Passage Restoration Program is focused on salmon, which aligns with Washington State's obligations under the culvert case and a general emphasis on anadromous species. Non-anadromous fish are undoubtedly important, but areas outside of anadromy are not in the current scope.

[32] Approximately 70 miles of King County's 104-mile coastline is armored.

[33] Evidence from 2018 indicates there has been a net increase in armoring.

[34] In 2019, a GIS assessment identified 689 structures (primarily buildings) at least partially within the high hazard zone. These structures intersected 627 parcels, 518 with on-site sewage systems and 40 with a sewer connection. Fifty-five were vacant, and 14 were parks or tracts owned by Washington State or others.

[35] Available from King County Rivers and Floodplain Management Section. Ask for the 2011 Vashon-Maury Sea Level Rise map.

[36] Section 11 of the 2015 Puget Sound State of Knowledge report summarized research to date on climate change and eelgrass in Puget Sound; eelgrass is not expected to be at risk where beaches have room to migrate, though trends in eelgrass are difficult to measure.

[37] In unincorporated King County, most new armoring is being done with emergency practices, possibly to save time and reduce costs, or is done without permits.

[38] Assumptions: less structures infer less risk of loss for coastal residents and businesses; new development will follow existing code to minimize risks for coastal residents and businesses.

[40] As defined by FEMA NFIP.

[41] Draft definition that draws heavily on materials developed by the David Suzuki Foundation.

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Abby Hook, Clean Water Healthy Habitat Lead, DNRP/Director's Office

Josh Latterell, Clean Water Healthy Habitat Goals, DNRP/Water and Lands Division

Leadership Team

Christie True, DNRP/Director's Office

Mo McBroom, DNRP/Director's Office

Lorraine Patterson, DNRP/Director's Office

Art Hendricks, DNRP/Director's Office

Warren Jimenez, DNRP/Parks and Recreation Division

Mark Isaacson, DNRP/Wastewater Treatment Division

Josh Baldi, DNRP/Water and Land Resources Division

Megan Smith, DNRP/Water and Land Resources Division

Michael Murphy, DNRP/Water and Land Resources Division

Strategy Development

Heather Ramsay Ahndan, DNRP/Water and Land Resources Division and Parks and Recreation Division

Lara Whitely-Binder, DNRP/Director's Office

Jim Bolger, DNRP/Wastewater Treatment Division

Sarah Brandt, DNRP/Parks and Recreation Division

John Brosnan, DNRP/Water and Land Resources Division

Nori Catabay, DNRP/Solid Waste Division

Kirsten Chapman, DNRP/Parks and Recreation Division

Kathleen Farley Wolf, DNRP/Water and Land Resources Division

Katherine Fischer, DNRP/Wastewater Treatment Division

Carly Greyell, DNRP/Water and Land Resources Division

Sandy Hanks, Department of Executive Services

Julie Horowitz, Public Health—Seattle & King County/Environmental Health Division

Meagan Jackson, Public Health—Seattle & King County/Environmental Health Division

Christine Jensen, DLS/Permitting Division

Janne Kaje, DNRP/Water and Land Resources Division

Heidi Kandathil, DNRP/Parks and Recreation Division

Jacque Klug, DNRP/Wastewater Treatment Division

Tiffany Knapp, DNRP/Wastewater Treatment Division

Jennifer Knauer, DLS/Roads Division

Beth leDoux, DNRP/Water and Land Resources Division

Evan Lewis, DNRP/Water and Land Resources Division

Faon O'Connor, DNRP/Wastewater Treatment Division

Frank Overton, DNRP/Parks and Recreation Division

Erika Peterson, DNRP/Wastewater Treatment Division

Becka Johnson Poppe, Performance, Strategy and Budget Office

Lorin Reinhelt, DNRP/Water and Land Resources Division

Blair Scott, DNRP/Water and Land Resources Division

Rebecca Singer, DNRP/Wastewater Treatment Division

Heidi Sowell, DNRP/Wastewater Treatment Division

Steve Tolzman, DNRP/Wastewater Treatment Division

Susan Kaufman Una, DNRP/Wastewater Treatment Division

Julie West, Public Health—Seattle & King County/Environmental Health Division

Goals and Measures Development

Heather Ramsay Ahndan, DNRP/Water and Land Resources Division

Lara Whitely Binder, King County Climate Action Team

Debra Bouchard, DNRP/Water and Land Resources Division

James Bower, DNRP/Water and Land Resources Division

Sarah Brandt, DNRP/Parks and Recreation Division

Steven J. Burke, DNRP/Water and Land Resources Division

Jeff Burkey, DNRP/Water and Land Resources Division

Tim Clark, DNRP/Water and Land Resources Division

Jenée Colton, DNRP/Water and Land Resources Division

Kyle Comanor, DNRP/Water and Land Resources Division

Curt Crawford, DNRP/Water and Land Resources Division

Curtis DeGasperi, DNRP/Water and Land Resources Division

Eric Ferguson, DNRP/Water and Land Resources Division

Kollin Higgins, DNRP/Water and Land Resources

Joe Hovenkotter, DNRP/Water and Land Resources Division

Todd Hunsdorfer, DNRP/Water and Land Resources Division

Richard Jack, DNRP/Water and Land Resources Division

Josh Kubo, DNRP/Water and Land Resources Division

Jeff Lafer, DNRP/Wastewater Treatment Division

Jennifer Lanksbury, DNRP/Water and Land Resources Division

Beth LeDoux, DNRP/Water and Land Resources Division

Sinang Lee, Public Health/Environmental Health Services Division

Evan Lewis, DNRP/Water and Land Resources Division

Kyla Leyendekker, Public Health/Environmental Health Services Division

Richard Martin, DNRP/Water and Land Resources Division

Daniel Nidzgorski, DNRP/Water and Land Resources Division

Shaun O'Neil, DNRP/Wastewater Treatment Division

Rory O'Rourke, Public Health/Environmental Health Services Division

Elissa Ostergaard, DNRP/Water and Land Resources Division

Greg Rabourn, DNRP/Water and Land Resources Division

Blair Scott, DNRP/Water and Land Resources Division

Stephanie Shelton, DNRP/Water and Land Resources Division

Jim Simmonds, DNRP/Water and Land Resources Division

Jamie Stroble, King County Climate Action Team

Shirlee Tan, Public Health/Environmental Health Services Division

Monica Walker, DNRP/Water and Land Resources Division

Debra Williston, DNRP/Wastewater Treatment Division

Kathleen Farley Wolf, DNRP/Water and Land Resources Division

Production Team

Abby Hook, Writing, DNRP/Director's Office

Josh Latterell, Writing, DNRP/Water and Lands Division

Kathy White, Editing, DNRP/Wastewater Treatment Division

Megann Devine, Design and Illustration, KCIT/Design and Civic Engagement

Photos provided by:

Paul Adler, Ned Ahrens, Eli Brownell, Megann Devine, Chris Ewing, Perry Falcone, Michael Friel, Kelly Keenan, Josh Kubo, Josh Latterell, Chad Lewis, Rose Lina, Elizabeth Louden, James Neely, Triten Pamphlet-Gardner, Jean Power, Greg Rabourn, Kim Stark, Megan Smith, Marie Tweedy, Doug Williams

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Please call 206-263-3722 or TTY: 711.