



Seattle
Public
Utilities

CLIMATE ACTION



In 2020, wildfires in Oregon and California created hazardous smog and blotted out the Seattle skyline from Gas Works Park. Climate change makes wildfires more likely.



SPU & Climate Change



Climate change is having a profound effect on the world around us—impacting ecosystems, communities, and people’s health. That includes the Puget Sound Region. While natural variability has always been, and will always be, an influence, climate change is a major factor in our local environment.

We are living through unprecedented weather-related events: extreme heat, atmospheric river-induced rainstorms, wildfires, and wildfire smoke. Globally, climate protests and strikes by Indigenous communities and youth have drawn more attention to the crisis. The science and the lived experience are clear: urgent action is needed.

Seattle Public Utilities (SPU) provides essential services. Those services, and our customers, are impacted by and contribute to climate change. As climate change presents challenges to managing Seattle’s water and waste services, we are taking action to minimize impacts to and foster resilience for current customers and future generations:

We are prioritizing frontline communities and climate **justice** to help address racial, environmental, and health inequities that climate change may worsen.

We are **mitigating** carbon pollution from our operations and laying the groundwork for a circular economy to reduce citywide emissions through *One Water* and *Zero Waste* approaches.

We are **adapting** to new extremes in the water cycle, such as wetter winters and drier summers, through climate-informed planning and investment in drinking water, stormwater and wastewater systems, operations, and ecosystem services.

SPU is focusing on community resiliency when it comes to climate action. We believe government and communities, along with climate scientists, coalitions, and other city departments, can and must act collectively and innovatively so that our communities and future generations of Seattleites can thrive.



Extreme rainstorms in Seattle increased by 30% between 2003 and 2018. Extreme rain events are increasing the need for climate-resilient drainage and wastewater infrastructure.



Unpredictable snowpack in Cedar River Watershed, February 2015 (left) vs. March 2021 (right). Once an unusual event, snow droughts will become more common due to climate change and will impact water supply management.



Sea levels in Seattle have risen six inches since 1900. Rising sea levels are threatening coastal areas throughout Seattle, including Alki Beach (above).

Climate Impacts from the Mountains to the Sound

As we move through the 21st century, we expect warming to be two to ten times more substantial compared with the 20th century.

By 2100, most Puget Sound watersheds, snow dominant today, are expected to be rain dominant. The change in precipitation type will affect our regional ecosystem—from the hydrology of the rivers to the habitat for salmon. It will also impact flood risks and water supply management strategies for Seattle communities.

Warming that leads to more acidic oceans could be harmful to Puget Sound's shellfish and marine life, and rising sea levels could further increase flood risks for our coastal communities. The effects of climate change can be particularly intense for our unhoused neighbors, outdoor workers, children, seniors, pregnant people, low-income households, people with breathing or heart issues, and vulnerable species, like salmon and orcas.

Reducing Our Carbon Footprint

Increasing amounts of greenhouse gas (GHG) emissions in the atmosphere are driving climate change. By reducing its own emissions and encouraging citywide waste prevention and diversion, SPU can reduce the city's carbon footprint:

GHG EMISSIONS SOURCE

SPU OPERATIONS

Our facilities, fleets, solid waste trucks, employee travel and commutes, construction projects

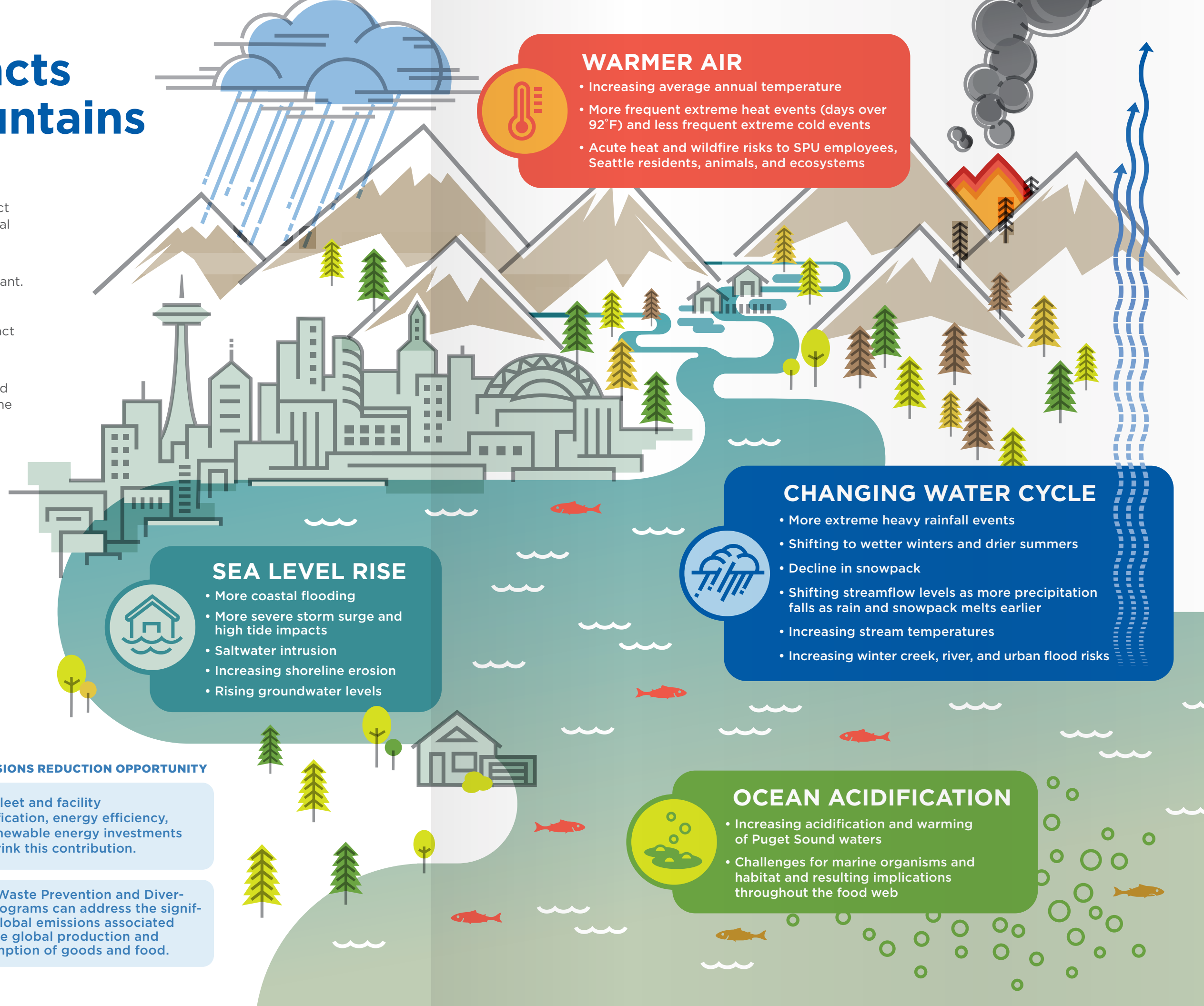
GHG EMISSIONS REDUCTION OPPORTUNITY

SPU's fleet and facility electrification, energy efficiency, and renewable energy investments can shrink this contribution.

CITYWIDE

Product consumption and waste generated by Seattle residents and businesses

SPU's Waste Prevention and Diversion Programs can address the significant global emissions associated with the global production and consumption of goods and food.



WARMER AIR

- Increasing average annual temperature
- More frequent extreme heat events (days over 92°F) and less frequent extreme cold events
- Acute heat and wildfire risks to SPU employees, Seattle residents, animals, and ecosystems

CHANGING WATER CYCLE

- More extreme heavy rainfall events
- Shifting to wetter winters and drier summers
- Decline in snowpack
- Shifting streamflow levels as more precipitation falls as rain and snowpack melts earlier
- Increasing stream temperatures
- Increasing winter creek, river, and urban flood risks

SEA LEVEL RISE

- More coastal flooding
- More severe storm surge and high tide impacts
- Saltwater intrusion
- Increasing shoreline erosion
- Rising groundwater levels

OCEAN ACIDIFICATION

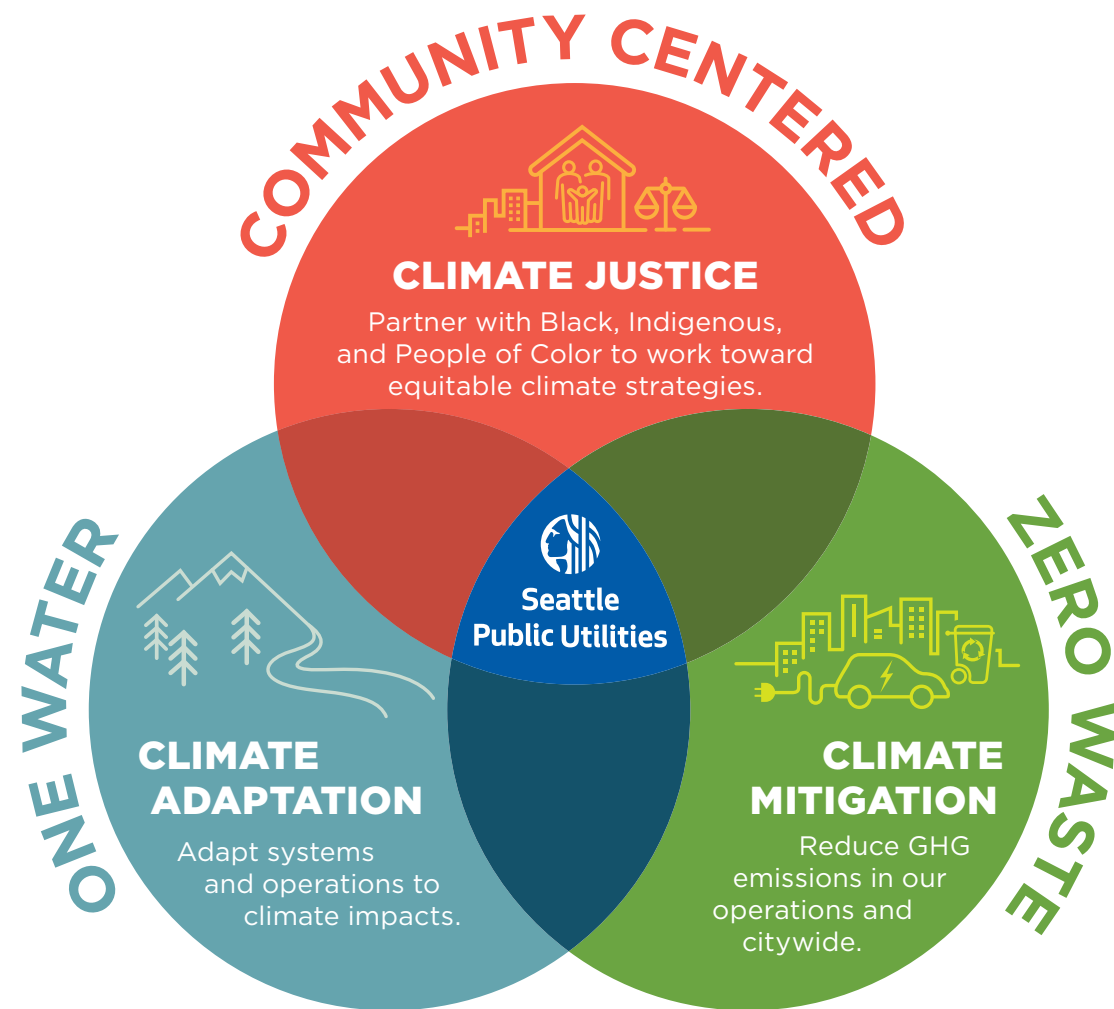
- Increasing acidification and warming of Puget Sound waters
- Challenges for marine organisms and habitat and resulting implications throughout the food web

SPU's Climate Work

SPU's climate change work is guided by the utility's vision: **Community Centered, One Water, Zero Waste**. We work in partnership with climate scientists, peer utilities, and community-based organizations, and take a holistic and integrated approach to managing water and waste cycles to build community resilience and steward our environment. Our approach is built upon the framework developed by **Seattle's Equity & Environment Initiative** and **Green New Deal for Seattle** with a focus on water- and waste-related community health.

All SPU employees contribute to this work, including hydrologists, planners, frontline crew members, foresters, engineers, biologists, customer service representatives, racial equity advisors, construction managers, and financial officers.

SPU's work centers on three primary strategies:



SPU's **Community Connections** program funds multiyear partnerships with trusted organizations and leaders that serve a variety of ethnic and language groups. The program creates deep and sustainable partnerships that aim to improve the quality of life for people of color, immigrant communities, and low-income communities through transformative approaches and experiences.



CLIMATE JUSTICE

If left unchecked, climate change impacts deepen inequities and cause harm in Seattle communities. SPU has a chance to invest in, partner with, and support communities so they will not disproportionately bear the brunt of climate impacts. SPU is leading with racial justice, honoring communities' priorities to build resilience, and equitably serving Seattle neighborhoods.

Climate change is not the only crisis our city is facing. Climate action is interwoven with other community priorities, like public health, economic opportunity, anti-displacement, and pandemic recovery. Similarly, SPU's climate justice work happens within an ecosystem: our work relies on, leverages, and benefits from cross-sectional partnerships, education, capacity-building, and trust-building with communities, scientists, and organizations.

KEY ACTIONS



PRIORITIZING COMMUNITY NEEDS

SPU is integrating community needs into capital project and program design to enhance water and waste service reliability and generate multiple benefits, including public health, open space, and economic opportunity. Black, Indigenous, and People of Color communities are valued leaders and collaborators as we improve our stewardship and investment philosophy.



CLIMATE INVESTMENTS IN FRONTLINE COMMUNITIES

By prioritizing investments to help frontline communities, SPU is helping them prepare and adapt to potentially devastating impacts. This includes improving drainage and wastewater systems for historically underserved, flood-prone communities and prioritizing urban heat islands for green infrastructure, water access, and urban forestry investments.



MULTI-BENEFIT SOLUTIONS

SPU is implementing multi-benefit solutions, such as green stormwater infrastructure, creek floodplain restoration, and urban forestry investments, that provide climate adaptation and mitigation benefits, enhance public health, and create jobs targeted to historically marginalized communities.



JOBS & UTILITY CAREER PATHS

Through the RainWise Academy program, apprenticeships, RainCity Partnerships, Waste-Free Communities Grant program, and the Seeds of Resilience impact investment pilot program, SPU is creating blue-green jobs and utility career paths. These programs open opportunities for entrepreneurship, small contracting business development, community organization growth, and long-term career advancement in water and waste infrastructure.



VOICE OF COMMUNITY & YOUTH

SPU is raising youth and community voices in climate action and environmental stewardship through K-12 education, targeted outreach, and community education. We are working with communities experiencing flooding to raise awareness and to develop adaptation strategies. We are still learning how to weave these voices and stories throughout our business.

Aiming for Carbon Neutral: SPU is reducing the direct emissions associated with our own operations. For example, SPU has a green fleet of close to 200 contractor trucks that are powered by electricity, renewable natural gas, and renewable diesel.



ZERO WASTE

CLIMATE MITIGATION

Providing SPU customers with essential water and waste services 24 hours a day, 365 days a year requires energy. From our water pump stations to our buildings and facilities to our vehicle fleet and solid waste management trucks, SPU is one of Seattle's largest municipal energy consumers. SPU also facilitates and supports waste prevention and diversion—seeding a local circular economy based on reuse and restoration as a strategy to reduce citywide emissions.

KEY ACTIONS



STRATEGIC ENERGY MANAGEMENT

With a goal of achieving carbon neutrality by 2030, SPU is aiming for energy-efficient operations utility-wide.



RENEWABLE ENERGY

SPU is exploring ways to generate renewable energy on our property and in our buildings, including in-line hydropower, sewer heat recovery, and solar energy.



NATURAL ASSET INVESTMENT

SPU is investing in Seattle's natural assets—including urban and watershed soils and forests—in order to absorb and sequester carbon from the atmosphere. This includes our green stormwater infrastructure programs, forest restoration, and composting programs.



SUPPLY CHAIN IMPROVEMENTS

SPU is prioritizing reduction in GHG emissions and additional benefits in materials, design, and delivery of capital projects and all purchasing and contracting.



WASTE PREVENTION & DIVERSION

SPU is preventing and diverting waste through policy and programs that address food waste, plastics and packaging, textiles, building salvage, composting, and product stewardship.



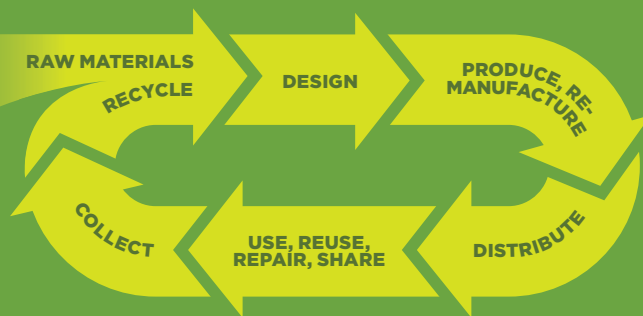
CIRCULAR ECONOMY

SPU is fostering entrepreneurship, innovation, and workforce development while reducing citywide carbon emissions. SPU will develop a comprehensive strategy that will position Seattle as a leader on the circular economy.

WHAT IS A CIRCULAR ECONOMY?

Our current “linear” economy creates a great deal of waste: We extract resources from Earth to make products and eventually throw them away.

A “circular” economy stops waste from being produced in the first place. In a circular economy, we do better with less, use resources for longer, and aim to eliminate waste.



Adapted from the Ellen MacArthur Foundation and ICLEI Circular City Actions Framework.

Shape Our Water is SPU's plan for the next 50 years of resilient drainage and wastewater systems. This One Water effort, incorporating climate change and rapid growth as critical drivers, will define SPU's future investments in water systems.



ONE WATER

CLIMATE ADAPTATION

SPU's climate adaptation work focuses on assessing vulnerabilities and anticipating and responding to the impacts of climate change on Seattle's drinking water supply and drainage and wastewater systems. We are developing flexible, cost-effective, and equitable adaptation and resilience strategies to minimize climate impacts to our systems and to Seattle communities.

KEY ACTIONS



NATURE-BASED SOLUTIONS

SPU is restoring natural water systems to enhance the resilience of ecosystems and the built environment. This includes green stormwater infrastructure approaches such as bioretention, creek floodplain restoration, and urban forestry investments.



RESILIENT WATER INFRASTRUCTURE DESIGN AND OPERATIONS

Building system capacity to accommodate population growth, increasing rainstorm intensity and frequency, storm surge, and sea level rise is critical to regional resiliency. SPU is also planning for ancillary sea level rise impacts, including rising groundwater levels, shoreline erosion, and saltwater intrusion.



HEALTHY HABITAT AND ECOSYSTEMS

SPU's investments in forest management and wild-fire risk reduction and preparedness benefit our watershed ecosystems and our services to customers. We are also protecting and restoring critical habitat for salmon and managing stormwater pollution in our urban creeks and in the Duwamish River.



WATER CONSERVATION

SPU is actively supporting behavior change, developing tools for water conservation at home and work, and fostering decentralized approaches to harvesting rainwater.



FUTURE-PROOFED BUILDINGS & FACILITIES

As SPU establishes and contributes to updated codes, standards, and policies for public and private buildings and facilities, we are limiting exposure to future climate impacts.



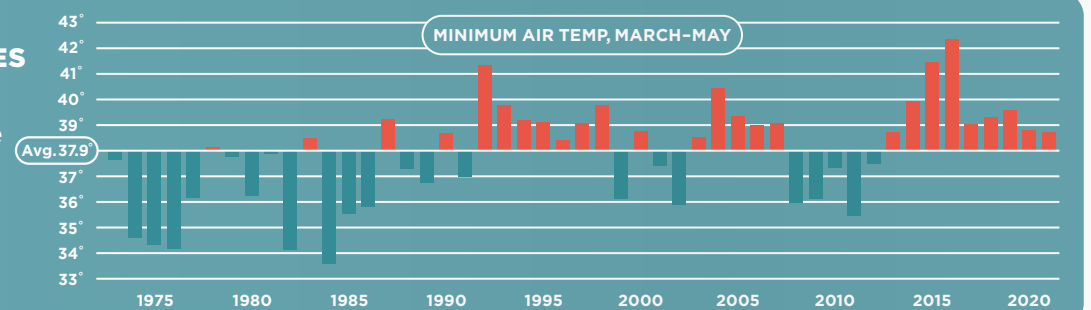
FLEXIBLE WATER SUPPLY & INSTREAM FLOW MANAGEMENT

SPU is enhancing water supply flexibility and preparedness through climate modeling and assessment, supply and demand forecasting adjustments, and natural and built infrastructure improvements.

RESPONDING TO WARMING TEMPERATURES

SOUTH FORK TOLT DAM

SPU is adapting to manage vulnerability to seasonal droughts, heat-driven water consumption increases, and water supply for people and fish.



CLIMATE CHANGE, SPU & YOU

We all have a role to play in reducing our contribution to climate change and adapting to climate impacts. From efforts to reduce and prevent waste to investments in green infrastructure and nature-based solutions, here are just a few ways you, your business, and your family and friends can help.



STEWARD Seattle's natural assets by planting and caring for trees with Trees for Seattle, installing a rain garden or bioretention system in your yard with RainWise, or adopting natural yard care practices to conserve water and build healthy soils.



CHAMPION a green infrastructure retrofit or creek restoration project in your community. You bring the vision and community know-how, and RainCity provides the funding and technical team to get it done.



PARTICIPATE as a community scientist and volunteer with the Green Seattle Partnership or others to restore open space, floodplains, and shoreline functioning.



Photo Credit: Susan Fried



PREVENT and report pollution. Help keep our creeks and lakes healthy by using less fertilizer and pesticides in your yard, properly disposing of hazardous waste, or stenciling a storm drain. Report pollution and spills, such as leaking automobiles, concrete dumped on the street, or paint poured down a drain.



HELP keep pipes functioning properly by clearing leaves from storm drains and properly disposing of fats, oils, and grease.



CAPTURE & CONSERVE water. Visit the Saving Water Partnership for tips on using water wisely.



SUPPORT local blue-green businesses that provide water, green infrastructure and waste services, especially Black- and Indigenous-owned enterprises.



REDUCE waste at home and at work by rethinking purchasing, supporting repair, reuse, and rental services, and eating what you buy to reduce food waste.

COMMUNITY PARTNERSHIPS



RainWise As Seattle shifts to warmer, wetter winters, green stormwater infrastructure becomes even more important: it slows, spreads, and absorbs rain to reduce flooding! SPU and King County partner via the RainWise program to help pay for rain gardens and cisterns in residents' yards in eligible sewer overflow basins. RainWise also provides training and education programs for small contractors wanting to become RainWise providers!



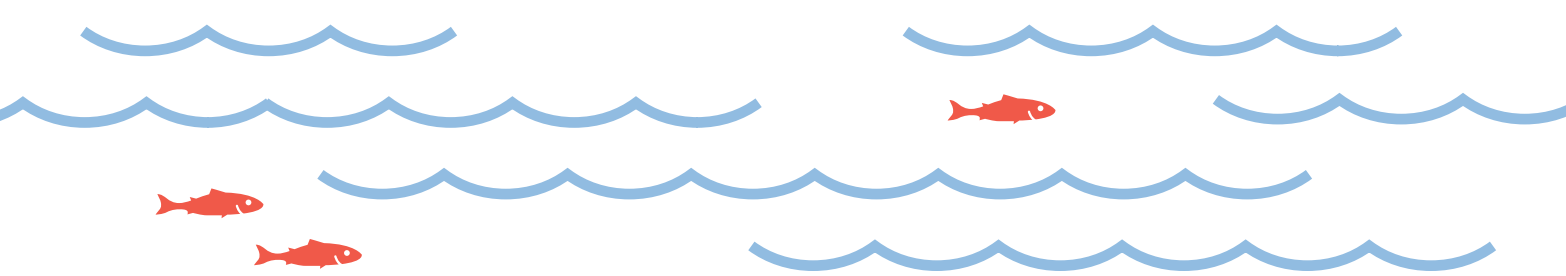
Waste-Free Communities Matching Grant Through SPU's Waste-Free Communities Matching Grant, SPU has partnered with Zero Waste Washington (ZWW) to reduce the use of single-use plastic water bottles by increasing access to "water refill stations" where people can fill up reusable water bottles. With SPU partially funding these stations and ZWW finding organizations willing to host them, ten new water refill stations have been installed throughout Seattle.



Blue-Green Job Apprenticeships SPU's crews are on the frontlines of adapting water systems to climate impacts. SPU's apprenticeships are entry-level, two-year training programs for key roles at SPU such as drainage and wastewater collection and water pipe workers. Interest in these programs is soaring, and the 2021 apprenticeship class was our most diverse ever.



Public and Private Schools SPU partners with local community organizations to provide comprehensive stormwater education to Seattle area public and private schools, including the Salmon in the Schools program. Using hands-on, experiential education, the program seeks to foster the next generation of environmental stewards by helping students understand how water is a force that connects us all.





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For additional
tools and resources

