



Re+ Strategic Plan:

Reimagining a waste-free King County

November | 2022



King County

Department of
Natural Resources and Parks
Solid Waste Division

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Cedar Hills Regional Landfill

EXECUTIVE SUMMARY

Overview and background

Today, approximately 70% of what goes into King County’s Cedar Hills Regional Landfill every year is recyclable. Preventing 75% of that material from entering the waste stream would divert 450,000 tons from the landfill and eliminate approximately 600,000 metric tons of greenhouse gas emissions annually.¹ This would also reduce the need for natural resources to create new products. The Environmental Protection Agency calculates that diverting 450,000 tons of waste to recycling facilities could also add 500 green jobs to the regional economy.²

Without intervention, waste and its associated greenhouse gas emissions will increase as the County’s population grows, and the Cedar Hills landfill will be full by 2040. King County’s Solid Waste Division (SWD) is beginning a new program, called Re+, to address these pressing issues.

This plan will provide more detail for King County residents, communities, businesses, and cities about what Re+ is and why we’re doing this work. In coordination with cities, Re+ actions focus on minimizing King County’s environmental footprint, creating more green jobs, diverting waste from the landfill, and ensuring everyone in King County has equitable access to efficient waste services.

Re+ is a community-focused, systems-level approach to creating a more circular economy. By prioritizing reuse and recycling, we’re bringing King County significantly closer to its waste reduction and climate goals.

RE+

Pronounced “rē plus”

1. *again, anew* ex: Reuse

2. *back, backward* ex: Recycle

¹ kingcounty.gov/~media/depts/dnrrp/solid-waste/about/documents/waste-characterization-study-2019

² epa.gov/smm/recycling-economic-information-rei-report

SUMMARY OF ACTIONS

Extended Producer Responsibility for Packaging and Paper Products

Securing commitments from businesses to take responsibility for product waste through fair and appropriate policies.

WHY Re+ IS DOING THIS This action will result in companies and brands taking more responsibility over the products and packaging they create that are destined to end up as garbage. Through Re+, we want businesses to support the development of recycling markets, reduce confusion over what is and isn't recyclable, and make recycling services more affordable for King County residents.

Statewide Organics Policy Legislation

Advancing state and county legislation that sends food and yard waste to be recycled so these important organic resources are kept out of landfills.

WHY Re+ IS DOING THIS 16% of what goes to our landfill is food. Food waste is a highly recyclable material, and a potent emitter of greenhouse gases as it decays. To combat climate change, Re+ must prevent food and yard waste from going to landfills.

Single-Family Organics Collection

Optimizing services for food and yard waste collection for all single-family households in King County.

WHY Re+ IS DOING THIS Re+ is considering new curbside policies throughout King County to reduce the amount of highly recyclable food waste going to the landfill.

Community Panel

Bringing together diverse communities and voices to chart a path toward a more equitable, waste-free King County.

WHY Re+ IS DOING THIS The Re+ Community Panel's evaluation and recommendations of the County's work in community engagement, equity, and tribal relations will better align SWD services with community needs.

Re+ City Grants

A competitive grant program for King County cities to implement innovative zero waste and recycling programs.

WHY Re+ IS DOING THIS King County cities are a crucial component to the success of Re+. By supporting city zero waste efforts, we will maximize the potential of actions that divert recyclables from the landfill and reduce greenhouse gas emissions.

City/County Collaboration

Increasing collaboration between King County and King County cities to reach the zero waste goals of the region.

WHY Re+ IS DOING THIS SWD's zero waste goals can only be reached in concert with the cities that comprise our regional system. Cities in King County often have their own garbage and recycling goals and relationships with waste haulers. By collaborating and partnering our efforts, we will be able to build on the work that cities have been doing to reach waste reduction goals, and provide stronger alignment of recycling and waste services throughout the county.

Non-Residential Food Waste Recycling

Providing technical support to local businesses to help them keep their food waste out of the landfill and manage it as a resource.

WHY Re+ IS DOING THIS According to our waste studies, King County businesses threw 65,000 tons of food into the garbage in 2019. As a highly recyclable material, food waste can be better used as a resource in an appropriate processing facility instead of rotting in the landfill.

Mixed Waste Processing

A "last screen" for capturing recyclables out of the waste stream.

WHY Re+ IS DOING THIS With efforts underway to recover recyclables and divert as much as possible, SWD will evaluate Mixed Waste Processing as an approach to recover recyclables that are mistakenly disposed.

Innovation Platform and Re+ Circular Economy Grants

Stimulating the waste-free economy through inclusive and equitable grants, technical support, and guidance.

WHY Re+ IS DOING THIS SWD has created a robust infrastructure for collecting garbage, compost, and recycling, but in order to prevent waste in the first place, Re+ is assisting companies focused on waste prevention and reduction. This means supporting businesses that prevent materials from ever reaching a garbage can or supporting ones that recycle the items that we put into our recycling bins.



Acknowledgments

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DEFINITIONS AND ACRONYMS

Anaerobic Digestion (AD)	A recycling and recovery process in which organics are placed in an enclosed container, called a digester, and deprived of oxygen, allowing bacteria to break down the material.
Circular Economy	A system that keeps products and materials in a cycle of use for as long as possible, thereby lessening the need to extract virgin materials, like trees, metals, and oil, from the earth. Actions that promote a circular economy include recycling, reusing, repairing, and reducing.
CHRL	Cedar Hills Regional Landfill
Co-Digestion	An anaerobic process where food waste is added to wastewater treatment digesters to create energy and biosolid fertilizers.
Community-based Organization	A non-profit group that works to improve the lives of residents in the area.
Comp Plan	See ‘King County Comprehensive Solid Waste Management Plan’
Digestate	A nutrient rich byproduct of anaerobic digestion that can be used as a fertilizer.
Extractive Economy	A system that depends primarily on the extraction or removal of natural resources that are considered valuable for exportation worldwide. Also known as ‘extractivism’.
Frontline Community	Groups of people that are disproportionately impacted by climate change due to existing and historic racial, social, environmental, and economic inequities, and who have limited resources and/or capacity to adapt.
King County-Cities Climate Collaboration (K4C)	A partnership of local governments of all sizes working together to accelerate climate action and cut harmful greenhouse gas emissions so the King County region can thrive in a changing climate.
King County Comprehensive Solid Waste Management Plan	A document outlining the strategy for managing solid waste over the next 6 to 20 years in King County. It guides the many public and private elements that make up the regional solid waste system.
Materials Management	The activities and actions involved in the sustainable creation, use, and disposal of an item.
Methane Biogas	A mixture of methane, CO ₂ , and small quantities of other gases produced by anaerobic digestion of organic matter.

Metric tons of Carbon Dioxide equivalents (MTCO_{2e})	There are many different types of greenhouse gases. For this document, we are measuring the global warming potential of various gases to carbon dioxide (CO ₂). For example, 1 metric ton of methane (CH ₄) has the same warming potential of 80 tons of CO ₂ . For reference, to undo the damage of 1 MTCO _{2e} , 50 trees must grow for one year. climateneutralgroup.com/en/news/what-exactly-is-1-tonne-of-co2/
NRFWR	Non-Residential Food Waste Recycling, an action being undertaken under the Re+ Program to eliminate food waste from businesses and restaurants.
Organics	A type of material and resource derived from living matter. Organic material includes food and yard trimmings.
Recycling	The process by which existing products are broken down and turned into new products and materials. Recycling reduces the need to extract virgin materials such as wood, metal ores and fossil fuels from nature to make new products.
Recycling Rate	The amount of materials diverted for recycling out of the total amount of waste materials. $\frac{\text{Recycled materials}}{\text{Recycled materials} + \text{waste materials}} = \text{Recycling rate}$
Strategic Climate Action Plan (SCAP)	A five-year blueprint for County climate action, integrating climate change into all areas of County operations and work with King County cities, partners, communities, and residents. The SCAP outlines King County’s priorities and commitments for climate action to residents and partners.
Solid Waste Division (SWD)	The sector of King County government that provides garbage transfer, recycling, and disposal services to the people of King County, outside of the cities of Seattle and Milton.
Tip Fee	A fee paid by those disposing their material at a transfer station or landfill. Tips fees are based on the weight of material being disposed.
Transfer Station	Facilities where curbside collection trucks and self-haulers can deliver garbage and recycling.
Virgin Material	Materials sourced directly from nature, such as plastic resins made from crude oil, wood, and metal mined from ore.
WTD	Wastewater Treatment Division
Zero Waste of Resources (ZWoR)	The Solid Waste Division’s goal to ensure that no recyclable materials and items of economic value are disposed of in Cedar Hills Regional Landfill.

INTRODUCTION

MISSION

Reducing single-use items
Reusing everything that can be
Recycling what's left
Renewing communities
Rethinking what's possible

VISION

Healthy, safe, and thriving communities
in a waste-free King County



Community members participating in a King County Parks Volunteer Program planting event with the Muslim Association of Puget Sound at Marymoor Park

What is Re+?

Re+ (pronounced “re-plus”) from the King County Solid Waste Division (SWD) is a re-imagining of our regional solid waste system from one that is disposal-based to one that is focused on reduction, recovery, recycling, and regeneration. The Re+ approach encompasses a series of actions that keeps materials with economic value in use and out of the landfill, and creates an equitable system that centers on community needs. Through Re+, we’re deepening our waste prevention and reduction methods. We’re finding innovative ways to match recovered materials with end markets. We’re including frontline community members to map out this system with us. And in doing so, we’re getting that much closer to reaching our vision of healthy, safe, and thriving communities in a waste-free King County.

Recyclable materials are those that can be processed into a new material. Highly recyclable materials include glass, metal, and food.

We need Re+ because disposal-based systems hurt people and our climate

To put it simply, King County urgently needs a more sustainable way to handle waste. Currently, up to 70% of what goes into our region’s landfill is recyclable.³ The products we use every day take finite resources and energy to produce. When they’re thrown away, it adds up to a significant loss of valuable materials and comes at a high human, environmental, and climate cost. Recyclables in the landfill also represent lost opportunities for both local job creation and preserving the health of our region’s communities, forests, and waterways.

When King County’s current disposal-based solid waste system was developed in the 1960s, it was not designed with equity and climate impacts in mind. Navigating which materials are recyclable is confusing, even more so for those who are more comfortable with a language other than English. For some, it’s simply easier to put everything in the garbage. Critical improvements have since been made at Cedar Hills Regional Landfill to capture and process methane gas and keep pollutants out of stormwater runoff, but with the landfill set to close by 2040, it’s time to invest in a system that’s better for both the environment and our communities. By investing in Re+ actions now, we can extend the life of the landfill beyond 2040 and reduce the long-term disposal costs of garbage and environmental impacts when the time comes to close the landfill.

We can reduce climate impacts, conserve resources and create a healthier environment for our communities by keeping valuable materials out of the landfill and in use as long as possible. By incorporating the principles of a circular economy, which emphasizes products designed for reuse or recycling, Re+ is a roadmap for making that change. Our approach aims to reinvent the current waste management system to be more resilient, future-focused, and equitable.

Food Waste in King County

IN 2019:

King County households and businesses threw out over **135,000 tons** of food

It took **126 million gallons of water** to grow that food

60,000 tons of that was edible food waste and could have fed **92,000 people**

The rest could have been recovered and transformed into **15,000 tons of compost**

The food waste is now in Cedar Hills Regional Landfill emitting the equivalent of **39,000 metric tons of CO₂e**

The same as **84,000 gas powered cars being driven for a year**

Re+ will divert food waste for proper processing to prevent further climate impacts



³ kingcounty.gov/~/-/media/depts/dnpr/solid-waste/about/documents/waste-characterization-study-2019

FIGURE 1 | Food waste in King County



King County staff discuss Re+ with community members at the 2022 CHOMP! local food and music festival.

The people behind Re+

The King County Solid Waste Division (SWD) provides garbage transfer, disposal, and recycling services for approximately 1.9 million people. We serve all of King County, except the cities of Seattle and Milton. Our work is guided by King County's 2019 Comprehensive Solid Waste Management Plan (Comp Plan), which enables us to manage waste locally at the lowest cost and with the least environmental impact.

Re+ is our biggest effort yet to reach zero waste of resources and create a more circular economy. It creates a tangible path towards meeting the waste diversion goals outlined in the 2019 Comp Plan and supports King County's Strategic Climate Action Plan (SCAP) and the King County-Cities Climate Collaboration (K4C) agreements.

Re+ is an effort led by the King County Solid Waste Division, but we invite **all residents, communities, businesses, and cities in the region to join in this equity, climate, and waste reduction work.**

Strategic Climate Action Plan

1.3.3 | The Department of Natural Resources and Parks (...) shall achieve at minimum net carbon neutrality on an annual, ongoing basis.

5.1.1 | Deliver zero waste of resources plan (ZWORP)

5.1.3 | Zero food waste in landfill in 2030

King County Code

10.11.020 - County goals

It is King County's goal to achieve zero waste of resources by 2030 through maximum feasible and cost-effective prevention, reuse and reduction of solid wastes going into its landfills and other processing facilities.

King County Equity and Social Justice Strategic Plan

Vision: A King County where all people have equitable opportunities to thrive. "(O)ur investments (...) should assess and address disproportionate environmental burdens and promote the equitable access to environmental benefits and resulting economic opportunities."

K4C Commitment

Develop a regional strategy through the adopted 2019 Comprehensive Solid Waste Management Plan to reach zero waste of resources by 2030.

Comprehensive Solid Waste Management Plan

Several policies and actions in the Comp Plan support Re+™ actions

FIGURE 2 | King County zero waste commitments

The Re+ 2030 deadline

At current disposal rates, King County’s only active landfill, the Cedar Hills Regional Landfill will reach capacity by 2040. Our goal is to implement Re+ actions by 2030. These actions will reduce the amount of waste going to our landfill.

Re+ actions address the full garbage and recycling ecosystem and implement changes along the entire lifecycle of materials that enter our lives. For more information on the changes included in the beginning stages of Re+, see [Re+ Strategies and actions](#) on page 24.



Current Solid Waste System

According to the latest available reporting, about 1.8 million tons of material went through King County’s solid waste system in 2019. Here’s what currently happens to all that material after it’s collected by a private hauler from your home, business, school, or other institution.

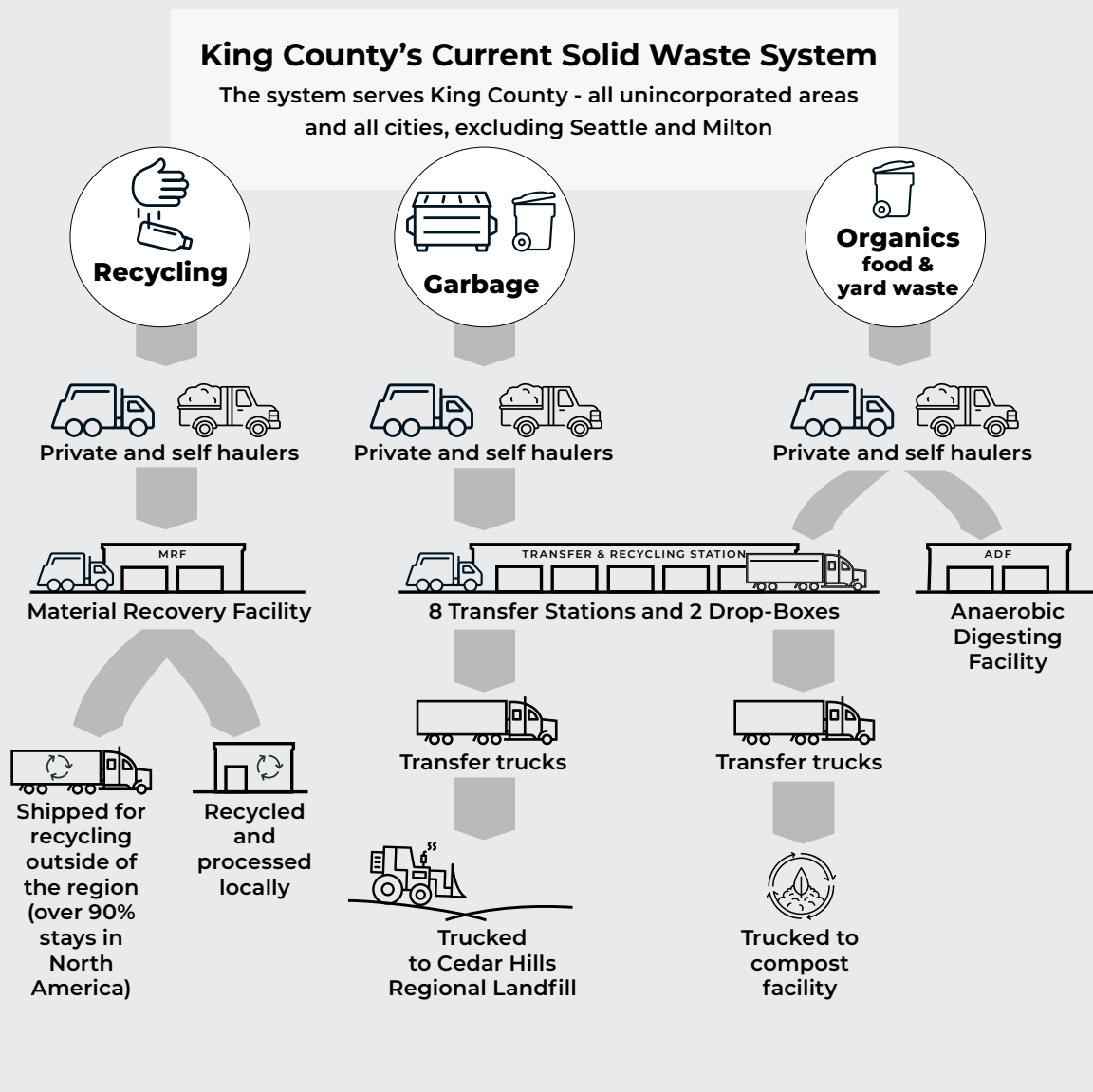
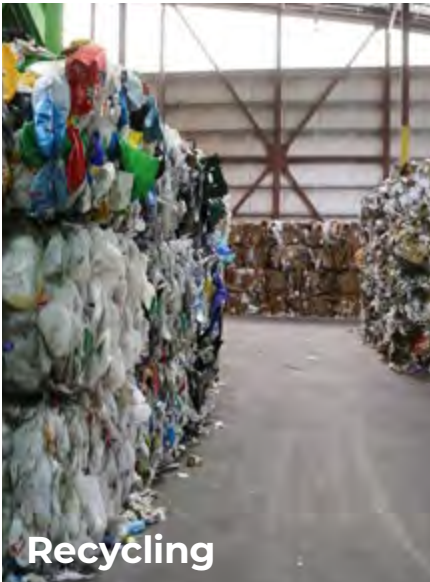


FIGURE 3 | King County’s Current Solid Waste System



Recycling

Materials Recovery Facility pathway. Baled materials, plastics, cardboard, paper and aluminum.

Recyclables are loaded into a sorting facility, called a Materials Recovery Facility (MRF), where workers and machines remove contamination, like dirty recyclables and items that can't be recycled. The rest is sorted into categories of paper, plastics, metals, and glass. This material is then sold and shipped to companies located both domestically and around the world that will turn it into new items.

The latest recycling data from 2018 shows just over 1 million tons of material went through King County's recycling channels instead of going to the garbage.⁴

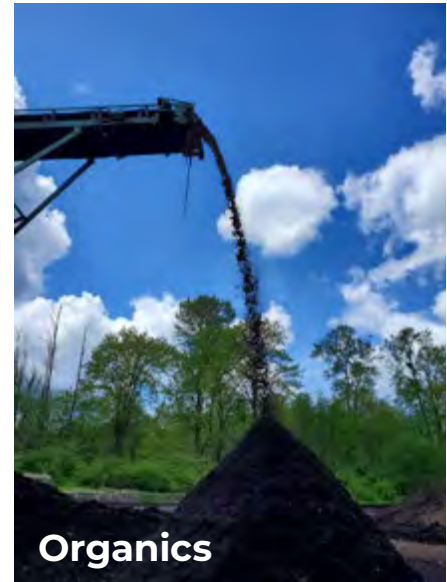


Garbage

Cedar Hills Regional Landfill tipper tipping garbage containing recyclable materials into the landfill. Mount Rainier in the background.

Garbage is hauled to one of King County's transfer stations before it's taken to Cedar Hills Regional Landfill, located in Maple Valley on traditional Muckleshoot territory. The landfill gas generated through the natural breakdown of waste is captured to prevent its release into the atmosphere and processed into pipeline-quality natural gas. This natural gas is routed into the Puget Sound Energy grid.

In 2019, about 860,000 tons of waste, including highly recyclable material, was buried in Cedar Hills Regional Landfill.



Organics

Organics, which includes food, soiled paper, and yard waste, are a highly recyclable material.

In King County, organics are hauled to private facilities where they are processed in one of two ways:

Composting: Most of the organics in our solid waste system are put through an aerobic process where microbes break down organic waste into a nutrient rich soil amendment, called compost. Compost contains essential nutrients that help plants grow and can be used for farming, gardening and landscaping.

Anaerobic Digestion (AD): A very small amount of King County organics go through anaerobic digestion, a process not yet widely available in our region. In AD, organics are placed in an enclosed container, called a digester, and deprived of oxygen, allowing bacteria to break down the material. The end products are a methane biogas, a renewable energy that can be used as fuel, and digestate, a nutrient rich material that can be used as a fertilizer.

In 2019, about 235,000 tons of organic waste was composted or digested and kept out of the landfill, preventing the release of 85,000 metric tons of carbon dioxide equivalents (MTCO_{2e}). That's the same as preventing the emissions of over 18,000 cars for one year.

Cedar Hills Regional Landfill



In the years 2000-2020, 19 million tons of materials were sent to Cedar Hills Regional Landfill. Originally slated to close in 2012, CHRL is still open due to increased efficiencies and recycling efforts.

⁴ ecology.wa.gov/Research-Data/Data-resources/Solid-waste-recycling-data

What happens if we do nothing

In the past 10 years, King County's population has grown by over 18%.⁵ As this growth continues, the county expects to see related increases in the amount of recyclables, organics, and garbage going through our solid waste system. If the county takes no further action to prevent waste from entering the landfill, Cedar Hills will reach capacity and close before 2040. Opening a new landfill in King County is prohibited by current SWD policy and would not be feasible due to environmental, community, and land use concerns.

Recent studies have confirmed that when Cedar Hills does reach capacity, the alternative disposal options will be more expensive and likely more detrimental to the environment. While transitioning to a new disposal solution is inevitable, Re+ provides the region an opportunity to substantially reduce the amount of tonnage that will ultimately need to be processed through this more expensive solution.

Ignoring the growing waste issue also represents missed opportunities for tackling climate change and inviting community voices to design a system that meets their needs.

The Re+ zero waste of resources goal

Up to 70% of what is currently sent to Cedar Hills Regional Landfill is recyclable. Our Zero Waste of Resources goal is to reduce, reuse, and prevent waste wherever possible, and to divert these recyclable materials away from the landfill. This means redirecting 135,000 tons of food each year in King County to create compost and bioenergy, as well as diverting the nearly 45% of wasted food that is still edible to feed those experiencing food insecurity. It's recovering infinitely recyclable materials like glass and metals for continued use. It's recycling 130,000 tons of cardboard and paper and preventing an estimated 1 to 2 million trees from being processed into new paper fibers.⁶ It's clearer messaging about where plastics should go. Ultimately, it's approximately 600,000 metric tons of carbon dioxide equivalents (MTCO₂e) no longer being generated from the mining and processing of raw materials or as landfill gas each year.⁷

In King County, organics (food and yard waste), paper, and plastic comprise 54% of what's currently going to landfill.⁸ These are the materials that Re+ will be targeting first for diversion.

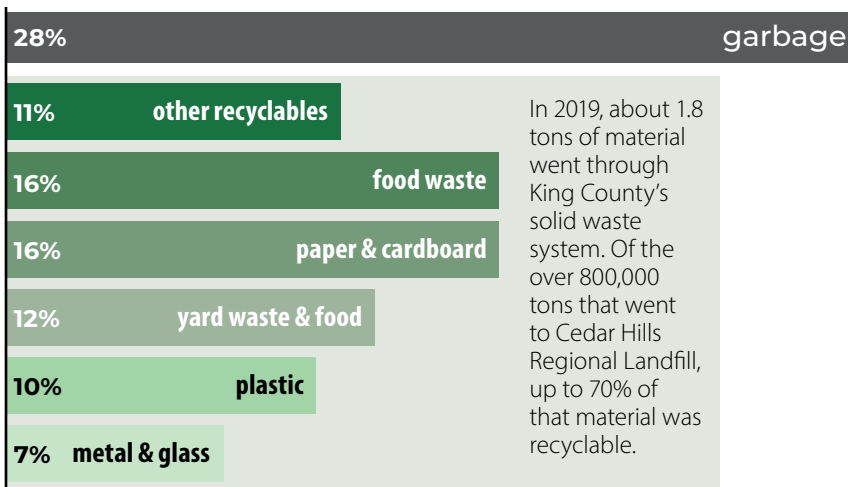


FIGURE 4 | Breakdown of King County's Waste Stream

It's clear that SWD can't go with the "do nothing" option. Instead, through Re+, we're focusing on county and state-level policy measures, innovative solutions, and reducing barriers to make it easier for people, businesses, and institutions to recycle right.

MTCO₂E

Metric tons of carbon dioxide equivalents (MTCO₂e)

There are many different types of greenhouse gases. For this document, we are measuring the global warming potential of various gases to carbon dioxide (CO₂). For example, 1 metric ton of methane (CH₄) has the same warming potential of 80 tons of CO₂. For reference, to undo the damage of 1 MTCO₂e, 50 trees must grow for one year. climateneutralgroup.com/en/news/what-exactly-is-1-tonne-of-co2/.



To capture
1 MTCO₂e,
50 trees
must grow
for **1 year**

climateneutralgroup.com

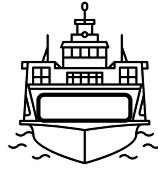
⁵ kingcounty.gov/independent/forecasting/King%20County%20Economy%20Status/King%20County%20Economic%20Indicators/KC%20Population.aspx

⁶ archive.epa.gov/epawaste/conservation/wastewise/web/html/factoid.html

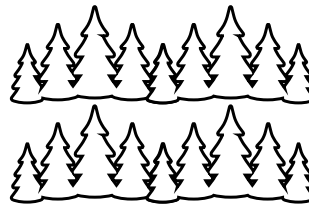
⁷ kingcounty.gov/~media/depts/dnpr/solid-waste/about/documents/waste-characterization-study-2019

⁸ kingcounty.gov/~media/depts/dnpr/solid-waste/about/documents/waste-characterization-study-2019

WHAT DOES A YEAR OF ZERO WASTE OF RESOURCES LOOK LIKE?




Reduced waste
equivalent to the
weight of
2,000
ferris



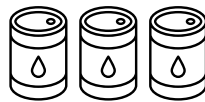
1 Million
trees saved

Saves enough food
to fully feed
the children of
200
elementary
schools



\$24
Million 
future disposal
cost avoidance

Green house gas reduction
equivalent to



150,000
barrels of oil

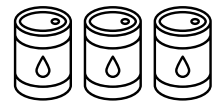


FIGURE 5 | Examples of a zero waste year in King County



Climate change, a crisis for people and planet

Climate science is clear that the past 200 years of human activities have increased the concentration of carbon dioxide and other greenhouse gases in the atmosphere to levels unprecedented in the past 800,000 years.⁹ Regional policies and practices for recycling and solid waste have directly contributed to decreasing greenhouse gas emissions.

Globally, the impacts of climate change can be seen in rising temperatures that will continue to become less compatible with human life. Record breaking temperatures, normally seen once every 20 years, are predicted to occur every two to three years by the end of this century.¹⁰ These abnormal fluctuations in weather are putting considerable strain on natural resources, causing populations of refugees and internally displaced peoples to swell. In 2019, the amount of people displaced due to climate related events was more than twice that of people fleeing their homes due to conflict and violence.¹¹

Climate change in our own region takes shape in the form of heavy precipitation leading to increased flooding events and landslides, more severe droughts that will threaten our ability to grow food, and an increase in damaging insect and invasive species populations. Our prolonged bouts with higher-than-average temperatures are causing an explosion in the population of native bark beetles, which are decimating our forests. The combination of these higher temperatures and dry, dead trees means our forest fires have become more common and more severe, spawning what is now being dubbed “smoke season”¹² in the Pacific Northwest.¹³

Severe weather is more likely to pose dangers to frontline communities, including those who live or work outside, have existing health conditions, and those with lower incomes. Data from the Washington State Department of Health’s Rapid Health Information Network shows that the record setting heatwave in June 2021 disproportionately impacted Black and Native American and Alaska Native populations in King County. These communities had a higher proportion of visits to King County emergency departments for heat-related illness compared to their proportion of the overall King County population.

King County is committed to addressing climate change, preserving our natural environment, and involving our frontline communities in the process. Re+ is a key part of the County’s efforts to lower our greenhouse gas emissions, reduce the amount of recyclable materials going to landfill, and to elevate those in our region most impacted by climate change.



King County has seen multiple record setting weather events in the last two years alone.

- February 13, 2021: The snowiest day in Seattle in over 50 years at 8.9 inches of snow
- April 25-21, 2021: Most consecutive days of 70+°F weather in April
- June 2021: Multi-day heatwave with record high temperatures of 118°F, killing over 30 people in King County. The Washington State record high temperature was also set this month at 120°F in Hanford, WA.
- July 26-31, 2022: Most consecutive days of 90+°F temperatures

⁹ Snover, A.K, G.S. Mauger, L.C. Whitely Binder, M. Krosby, and I. Tohver (2013) Climate Change Impacts and Adaptation in Washington State: Technical Summaries for Decision Makers. State of Knowledge Report prepared for the Washington State Department of Ecology. Climate Impacts Group, University of Washington, Seattle.

¹⁰ climate.nasa.gov/effects/

¹¹ storymaps.arcgis.com/stories/065d18218b654c798ae9f360a626d903

¹² Fettig, Christopher J.; Hood, Sharon J.; Runyon, Justin B.; Stalling, Chris M. 2021. Bark beetle and fire interactions in western coniferous forests: Research findings. Fire Management Today. 79(1): 14-23.

¹³ kuow.org/stories/the-northwest-s-unhealthy-new-season-smoke



The Re+ Community Panel meets with King County staff at Crestview Park in Tukwila, providing direction to create a more equitable solid waste system

Community collaboration for a just equitable future for all

The origins of King County's Zero Waste of Resources goal and Re+ program were borne out of a need to be more responsible with our planet's finite resources. But we also understand that the work of environmental and climate justice are intrinsically linked to social justice.

When we look at data across King County communities, whether it's related to health, access to housing, or in this case the disproportionate impact of climate change, the disparities are greatest when factoring in race, language, disability, gender identity and other historically marginalized identities. For example, low-income households and communities of color face greater challenges when preparing for climate-related emergencies. They bear a disproportionate burden of disease, such as higher rates of asthma; have less access to resources and opportunities required for resiliency, such as living in flood-prone areas or food deserts; and they have less access to quality healthcare.

"The pathway to confronting climate change needs to center the most impacted – with benefits to the region as a whole – by leading with action steeped in community values and demonstrating how community-based efforts are imperative to climate justice and science."

Pah-tu Pitt

Co-Owner of Native Kut, Member of the Confederated Tribes of Warm Springs, Member of Climate Equity Community Task Force, Member of Re+ Community Panel

To better understand community needs within our solid waste system, we've created the Re+ Community Panel, a group of 10 frontline community members who live, work, or volunteer in King County. Their contributions in our ongoing meetings have already helped highlight areas where Re+ can adopt more equitable implementation. These areas include:

- Developing an equity impact and evaluation tool to measure Re+ actions
- Re+ influence on food systems and food sovereignty, the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems.¹⁴
- Re+ influence on dismantling the root causes of oppression and undoing the harms caused by colonial systems
- Re+ grants supporting living wages, meaningful work, and small businesses
- Developing shared decision making power with our local tribes
- Making the principles of the circular economy more accessible, culturally-informed, and culturally relevant

The work of the Community Panel is currently in progress, with recommendations forthcoming on making Re+ actions more equitable and community focused.

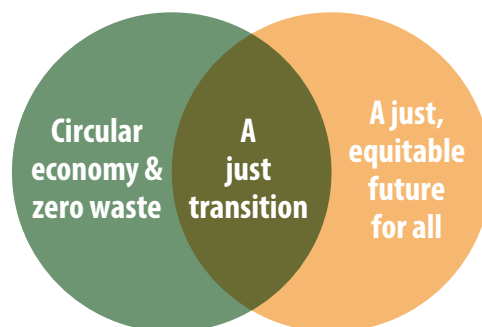
The Solid Waste Division, in line with the County's Equity and Social Justice Strategic Plan, is committed to examining how our systems impact communities and the areas where we might bring greater benefit. We understand that for many, issues of garbage and recycling come secondary to housing, living wages, food security, and more. Before we can ask people to care about recycling rates, we need to help address their most basic unmet needs. We're dedicating three full-time staff and at least \$1 million to support community-driven efforts. Our aim is that by continuing to center the lived experiences of frontline communities, we can highlight areas where additional resources are needed, getting us that much closer to reaching the Re+ vision - healthy, safe, and thriving communities in a waste-free King County.

The just transition

SWD understands that transforming our solid waste systems to be more circular and equitable requires a just transition. As the region moves from an extractive economy toward a more resilient, equitable, and sustainable King County, it is important that the County's solutions create opportunities and do not leave people behind.

A just transition to a sustainable future requires planning for and adapting to unintended consequences, removing systemic and economic barriers, prioritizing investments in frontline communities, and supporting the leadership of frontline community members.

For Re+, a just transition means centering frontline communities' perspectives to address their needs, analyzing how SWD might be contributing to oppressive systems, and, as we move away from a disposal and landfill-based system, providing employees with training for new opportunities and roles.



FRONTLINE COMMUNITIES

Frontline communities are those that are disproportionately impacted by climate change due to existing and historic racial, social, environmental, and economic inequities, and who have limited resources and/or capability to adapt.

These populations often experience the earliest and most acute impacts of climate change, but whose experiences afford unique strengths and insights into climate resilience strategies and practices.

Frontline communities include

- Black, indigenous, and people of color (BIPOC) communities
- Immigrants and refugees
- People living with low incomes
- Communities experiencing disproportionate pollution exposure
- Women and gender non-conforming people
- LGBTQIA people
- People who live and/or work outside
- Those with existing health issues
- People with limited English skills
- Other climate-vulnerable groups

A JUST TRANSITION

A just transition is a community-led process to ensure that addressing climate change and creating a circular economy is also beneficial to people's health, jobs, and communities.

¹⁴ usfoodsovereigntyalliance.org/what-is-food-sovereignty/



An example of the just transition in action



In 2019, in response to the harmful effects of uranium mining and the job losses stemming from the closure of the Navajo Generating Station — the largest coal-fired power plant in the western United States — the Navajo Nation became a leader in renewable energy. The community established Navajo Power, an organization founded to “maximize the economic benefits of clean energy for tribal and impacted communities.” The Navajo Nation also established the Kayenta Solar Program, a solar farm that provides clean energy to 36,000 Navajo Nation homes. These successes have not only brought clean electricity to homes, it also provided meaningful jobs to its community members.

Principles of just transition, via Climate Justice Alliance

Buen Vivir (Living Well)

Through a just transition, we can improve quality of life without it being at the expense of others. Quality of life includes access to clean, healthy, and adequate air, water, land, food, education, and shelter. The rights of peoples, communities, and nature to achieve these things is paramount over the rights of the individual.

INCORPORATING JUST TRANSITION PRINCIPLES INTO RE+

Improving quality of life by

- Shrinking King County’s waste stream and climate impacts by ensuring recyclable items get recycled
- Connecting edible food to food insecure households

Meaningful Work

Everyone deserves work that is fulfilling and creates opportunities to learn, grow, and develop.

INCORPORATING JUST TRANSITION PRINCIPLES INTO RE+

- Creating green jobs and opportunities through the expansion of recycling activities in King County
- Providing support to existing King County employees to transition from waste-focused to recycling- and recovery-focused responsibilities

Self-Determination

Each individual has the right to be involved in decisions that affect themselves and their communities.

INCORPORATING JUST TRANSITION PRINCIPLES INTO RE+

- Inviting voices from frontline communities to participate in the Re+ Community Panel and Equity & Social Justice workshops

Equitable Redistribution of Resources and Power

New systems must be established that account for the health and well-being of all people, not just the rich or powerful. This means dismantling inequities and oppression, and reclaiming resources and implementing them where needs are greatest.

INCORPORATING JUST TRANSITION PRINCIPLES INTO RE+

- Developing shared decision making processes with local indigenous tribes
- Re+ Community Panel evaluation of Re+ actions in equity, community engagement, and tribal relations

Regenerative Ecological Economics

Moving away from extractive economies and towards systems that promote ecological resilience is essential to raising collective well-being. This includes building out local systems of production for food, clean energy, and other resources.

INCORPORATING JUST TRANSITION PRINCIPLES INTO RE+

- Moving away from extractive economies and towards circular economies is at the heart of Re+
- Renewable energy through anaerobic digestion
- Investing in local organizations focused on recycling and reuse through Re+ Grants and the NextCycle Washington innovation platform

Culture and Tradition

Our economic systems have destroyed cultures, traditions, and sacred lands. Just Transition creates inclusionary spaces for all cultures and traditions, and makes reparations for land that's been stolen or destroyed by capitalism, colonialism, patriarchy, genocide, and slavery.

INCORPORATING JUST TRANSITION PRINCIPLES INTO RE+

Re+ has not yet fully incorporated this principle into our strategies and actions. The work of the Re+ Community Panel is helping to integrate this aspect of a just transition into Re+.

Solidarity

Transformation is a collective process and a just transition requires that action come from all levels: local, regional, national, and global partnerships.

INCORPORATING JUST TRANSITION PRINCIPLES INTO RE+

- City/County Collaboration to create shared understanding and shared action of implementing Re+ county-wide
- Maximizing environmental and social benefits of Re+ by knowledge sharing with other government entities throughout the country
- Working with non-profit, community-based organizations, and advocacy groups to develop Re+ Actions

Build What We Need Now

Regenerative systems must be put into place today. Whether this starts as a global effort or a neighborhood one, the unmet needs of our most vulnerable communities can't wait.

INCORPORATING JUST TRANSITION PRINCIPLES INTO RE+

Goal: Implement all Re+ Actions by 2030

Materials management and the circular economy

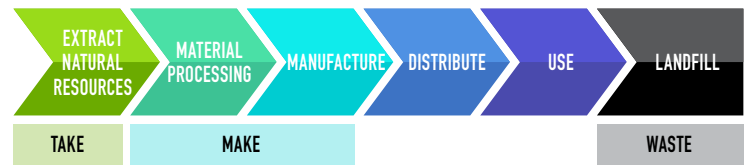
All the products that we use daily are produced from raw materials. These materials, and the goods and foods that are produced from them, are often extracted, manufactured, or provided from outside of King County, but are ultimately used and enter the waste stream here. This means material decisions made here reach far beyond the County's borders.

As demand for food, energy, transportation, and other goods increases with a growing population and higher living standards, so do demands on the natural environment. At the same time King County residents and businesses must work together to tackle a changing climate and play their part in delivering an equitable future for all.

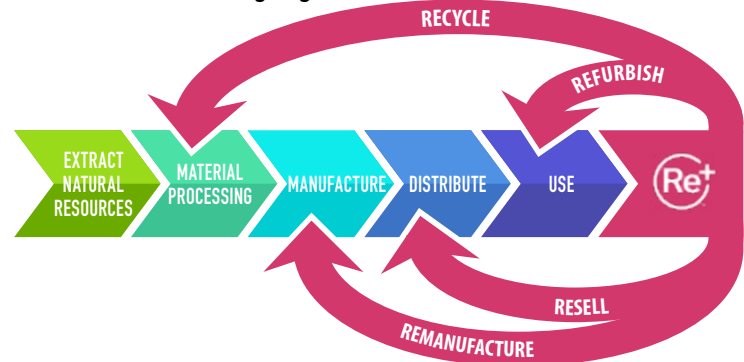
The overarching goal of materials management is to achieve a circular economy where waste is minimized, materials stay in use longer, and existing materials are recycled into new products, thereby reducing emissions, reducing the need for virgin material, and regenerating natural systems. This includes but goes beyond a commitment to reduce, reuse, and recycle. It also includes making improvements during the design and production phases, guiding purchasing decisions, and transforming how products are managed at their end of use.

It requires that the region create demand for recycled materials, make investments in local sorting and processing infrastructure, strive to create consistency in recycling programs and messaging, and make a commitment to work with new partners (including brand and business owners) at all stages of the supply chain to help solve the problems caused by the linear economy. Transforming our thinking away from the take-make-waste thinking of the 20th century and delivering a 21st century approach where we rethink, reduce, repair and recycle our materials is at the heart of the Re+ plan. The [Re+ actions](#) (beginning on page 25) are the immediate essential actions needed to put King County on course for a low-carbon, pro-equity, more circular economy of the future.

Linear Economy System



Circular Economy System



A circular economy reduces climate impacts, conserves resources and creates a healthier environment for our communities by keeping valuable materials out of the landfill and in use as long as possible.

FIGURE 6 | Linear vs Circular Economy System

MATERIALS MANAGEMENT

The activities and actions involved in the sustainable creation, use, and disposal of an item.

Watch [The Story of Stuff](#), an informative 20 minute video, for more information on materials management and the circular economy. Subtitles available in multiple languages.



How you can support a more circular economy

Avoid buying new products when possible

Look for products made with recycled content

Instead of throwing things away, try to reuse, repair, refurbish, donate, share, or recycle your items

Support local and state policies that keep materials out of landfills

THE RE+ FRAMEWORK



An artisan at the Refugee Artisan Initiative creates new products from textiles that would have gone to the landfill.

Re+ framework

A task force was assembled in June 2020 to map out how to best reach zero waste of resources. Their goal was to establish the framework and strategies that would lay the foundation for the Re+ Program Actions. The task force is composed of King County residents, staff from King County and several King County cities, as well as representatives from regional haulers and local non-profits. The following guiding principles were created to form a zero-waste approach that is thorough, inclusive, and impactful.

For more information on the strategies and actions proposed by the Re+ Task Force, [click here](#).

These guiding principles were used to inform the strategies on the following pages.

Re+ Guiding Principles	
All in together	<p>The region delivers Re+ actions collectively, prioritizing integration and outcomes consistent with regional and statewide initiatives such as:</p> <ul style="list-style-type: none"> • The King County Strategic Climate Action Plan • King County Comprehensive Solid Waste Management Plan • King County Clean Water Healthy Habitat agenda • The State Solid and Hazardous Waste Plan • The Washington State Recycling Development Center
Pursuing opportunity in a more circular economy	<p>Through the transition to a more circular economy, directly address equity and accessibility issues in all planning decisions.</p>
Include all voices	<p>Ensure that when taking a systems approach and when approaching planning decisions the needs of all residents are placed at the center of the process, recognizing the voices of Black, Indigenous, and People of Color (BIPOC) and those who have been historically excluded are heard and reflected.</p>
Support local growth and green jobs	<p>The region ensures material management jobs are green jobs, and workers are encouraged to take advantage of the clean circular economy roles of the future.</p>
Support broader goals	<p>Measure and track the benefits and impacts of planned actions to climate, human health, equity, toxics and the environment, and incorporate performance in county plans and goals.</p>
Prioritize high impact materials	<p>The region prioritizes material and product categories with the biggest potential positive impacts (plastic, paper, and organics including wood) in the short term but recognizes that future updates to the Re+ program need to expand to cover all relevant materials – such as textiles, mattresses and carpets.</p>

RE+ STRATEGIES & ACTIONS



Re+ strategies

The Re+ Task Force identified strategies to reach the County's zero-waste goal. These strategies are themes that identify pathways to reach the Re+ zero waste of resources goal and help define the Re+ actions.

1 STRATEGY	System-wide approach	<p>A regional system-wide approach that is collaboration-based & recognizes where action is needed from design through end of use.</p> <p>Why is this needed: To achieve a circular economy, all the components of the system—from product design and creation to recycling of unwanted items—must adapt to work together towards this common goal.</p>
2 STRATEGY	Resources at all levels	<p>The region and all responsible parties prioritize and implement actions that deliver the zero-waste goal and move towards a more circular economy.</p> <p>Why is this needed: Re+ is a very big change and in order to be successful, it will require support, knowledge, and other resources from King County partners.</p>
3 STRATEGY	A more circular economy	<p>Moving towards a more circular economy where the region seizes the opportunity for climate and environmental stewardship and ensures a just equitable transition where all people thrive.</p> <p>Why is this needed: The Earth does not have enough resources to support the current “take, make, waste” system that exploits people and the environment.</p>
4 STRATEGY	Infrastructure and innovation	<p>The region delivers zero-waste/Re+ infrastructure and innovation where technology solutions can handle increased diversion and support unconventional solutions.</p> <p>Why is this needed: King County's current solid waste system is based on a model from the 1950s and 60s—we should be adopting new technologies that were made to address the waste issues of this millennium.</p>
5 STRATEGY	Policy and legislation	<p>The region embraces zero-waste/Re+ policy & legislation, recognizing governments have a leading role working in partnership with the private sector in creating and harmonizing standards and approaches.</p> <p>Why is this needed: New laws can be a relatively quick and effective way to create large-scale change in an otherwise complicated system.</p>

Re+ incorporates the 2030 climate and solid waste goals of the Strategic Climate Action Plan, King County Code, King County Cities Climate Collaboration, and the Comprehensive Solid Waste Management Plan. With less than a decade left to reach these goals, King County and the cities within it must act urgently to support these strategies together. Moving quickly will lead to faster implementation of actions with more immediate waste diversion results. These results will inform a long-term waste disposal option for everything that can't be recycled or buried in Cedar Hills Regional Landfill. The earliest impacts of Re+ will directly influence the costs of the County's future waste disposal method and lessen the environmental impacts associated with the system we have today.

Re+ actions

Our goal of reaching a zero-waste, equitable, and circular economy means taking a look at the entire lifecycle of the products and items we use, and identifying areas to close loops. Guided by the principles and strategies outlined above, SWD is taking action at each point in this lifecycle.

A system-wide approach



FIGURE 7
Re+ actions and its system-wide approach

Re+ Action

Extended Producer Responsibility for Packaging and Paper Products

Securing commitments from businesses to take responsibility for product waste through fair and appropriate policies.

King County is supporting statewide Extended Producer Responsibility (EPR) legislation that would require companies that make consumer products to fund the residential recycling system and ensure that their packaging and paper products actually get recycled. This is a proven policy approach known as EPR. EPR would reduce costs for residents and local governments and provide convenient and consistent recycling services across the state.

IMPLEMENTATION

As part of Re+, King County, local partners, and state legislators are developing an EPR policy with the goal of passing statewide legislation in 2023 and implementation starting 2027.



IMPACTS

Brands and other companies that make consumer products will be responsible for funding residential recycling. This will create economic incentives to reduce packaging waste and change packaging designs to be reusable, recyclable or compostable. Another intent of EPR policy is to relieve the burden of recycling costs from local governments and residents with King County households saving \$88 - \$175 per year on recycling service costs. EPR implementation in other countries has not shown to increase pricing of consumer products.



BENEFITS

EPR would increase reuse and recycling of packaging and paper products resulting in fewer materials being sent to the landfill. This would reduce greenhouse gas emissions and other environmental impacts significantly. Recycling services would be provided more equitably and over 1,650 additional green, local, living-wage jobs would be created across the state.

Annual Diversion Potential 25,500 - 42,000 tons/yr	 equal to approx. 11 space needles	Annual GHG Reduction 75,000 MTCO ₂ e/yr	 equal to approx. 83M lbs of coal burned
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Existing successful EPR programs in Washington state

E-Cycle Washington

Provides free recycling of computers, monitors and TVs across the state. Learn more or find a recycling location near you at ecyclewa.org

Launch year: 2009 | Statewide locations: 300+ | Pounds recycled: 443 million

LightRecycle Washington

Offers Washington residents safe recycling solutions for mercury-containing lights such as fluorescent lights and compact fluorescent lights (CFLs). The program is financed by manufacturers through an environmental handling charge on mercury-containing lights levied at the time of sale. To learn more or find a recycling location, visit lightrecycle.org.

Launch year 2015 | Statewide locations: 280+ | Lights collected: 7.2 million

Safe Medication Return

Expired or unwanted medication can be dropped off or mailed in for free responsible disposal. Drug manufacturers fund the program at no cost to taxpayers. You can request a free mail-in envelope or find a take-back location near you at med-project.org/locations/washington/find-a-location.

Launch year: 2020 | Statewide locations: 300+

Washington PaintCare

The PaintCare program provides Washingtonians a better way to manage and recycle their leftover paint. PaintCare is funded by a fee which is applied to the purchase price of new paint sold in the state. There is no charge for dropping off paint at a drop-off site. The program accepts architectural paints, interior and exterior, sold in five-gallon containers or smaller. To find a drop-off site near you, visit paintcare.org/states/washington

Launch year: 2021 | Statewide locations: 230+

EPR Community Impact

Households will save money on recycling with EPR

All households pay for recycling services either directly or indirectly (the cost of recycling is often embedded in the garbage collection rates). Currently, the costs of recycling services vary according to where you live. Some households in King County pay \$88 a year for curbside recycling services, while others pay up to \$175 a year. King County supports EPR policy for packaging and paper products that would provide curbside recycling at no cost to all households with curbside garbage service – regardless of where they live in the state.

Are recyclables actually recycled? EPR will ensure transparency and accountability

Due to health, safety, and environmental concerns, China and many other countries have stopped accepting much of the contaminated recyclables that the U.S. has been exporting. Years later, we still do not have a clear idea of where recyclables from King County are going. Under EPR, companies that make consumer products would not only fund the recycling system, but also demonstrate that recyclables are managed responsibly. No materials should be sent to overburdened communities locally or abroad, where they are not managed in an environmentally sound or socially just manner. EPR would allow for third-party verification to ensure transparency and accountability of how the collected material is managed.

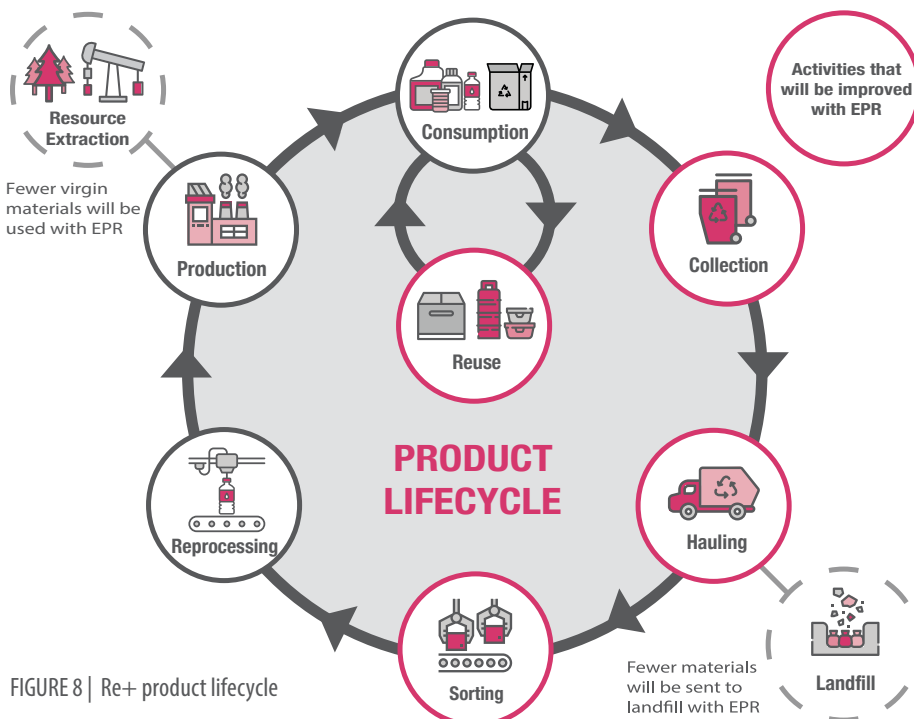


FIGURE 8 | Re+ product lifecycle

Statewide Organics Policy Legislation

Advancing state and county policy that sends food and yard waste to be recycled so these important organic resources are kept out of landfills.

King County will continue to participate in efforts to pass statewide policies that help keep organics out of the landfill. The County will also coordinate and support other entities through the implementation of the Organics Management Law (HB1799), a comprehensive organics bill that passed in the Washington State legislature in 2022.

IMPLEMENTATION

The Organics Management Law implementation begins in 2023, and includes supporting food waste diversion from businesses and expanding public sector compost procurement through the CompostWise program. SWD will provide technical assistance on organic material recycling to businesses, partner with cities on non-residential food waste diversion, and provide education about compost use through the CompostWise program. Additional organics policy work is ongoing.

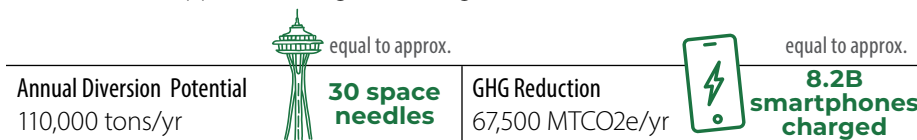
IMPACTS

Working on statewide organics legislation supports the county’s organics waste reduction efforts. It provides statewide resources and policies for food waste recovery and donation, increases access to food and yard waste collection, and bolsters end markets for compost and other recycled soil amendments.

Businesses will be required to separate food waste from their garbage, starting with the largest food waste generators in 2024. Costs for businesses could increase due to paying for collection of a separate food waste bin. The cost of adding organics collection service varies depending on the size of the container, frequency of pickup, the jurisdiction of the customer and collection company. Cost increases could be mitigated by focusing on reducing or preventing food waste or moving to a smaller garbage container.

BENEFITS

The Organics Management Law has the potential to divert approximately 110,000 tons of organics per year away from the landfill within King County, which would result in a greenhouse gas reduction of 67,500 MTCO₂e or 13,000 gas-powered cars driven for a year. This and other future statewide legislation can also increase food donation and support for hunger relief organizations.



Statewide Organics Community Impact

In 2018, 11% of King County adults experienced food insecurity, while 26.5% of parents and caregivers with young children said it was hard to afford basics like food. In addition, during the COVID-19 pandemic, emergency food services, including food banks and meal programs, experienced a surge in demand due to high unemployment rates and economic instability.

Businesses, government offices, schools, and other institutions send an estimated 26,458 tons of edible food to Cedar Hills Regional Landfill each year. The Organics Management Law aims to direct this food to feed people in King County.

The Organics Management Law supports preventing edible food from being thrown in the garbage by updating the Good Samaritan Food Donation Act to reduce barriers to donating edible food. It also establishes the Washington Center for Sustainable Food Management. Once the center becomes operational in 2024, it will coordinate statewide food waste reduction efforts, including matching businesses and individuals that have extra edible food with people in need. Though rescuing edible food does not end food insecurity, it is one way to increase food availability for communities in King County.

Single-family Organics Collection

Optimizing collection services for food and yard waste collection for all single-family households in King County.

The majority of King County single family customers who have garbage collection also subscribe to separate organics collection. However, about one third of the cities have a subscription rate of less than 70%. In unincorporated King County, the organics subscription rate is about 50%. New strategies will be focused on cities and unincorporated areas with lower subscription rates to get residents who do not currently subscribe or compost at home to add and use the service. Possible policy options include requiring households who have curbside garbage service to also have food and yard waste service, changing garbage to every-other-week collection, or requiring the separation of food waste from garbage.

IMPLEMENTATION

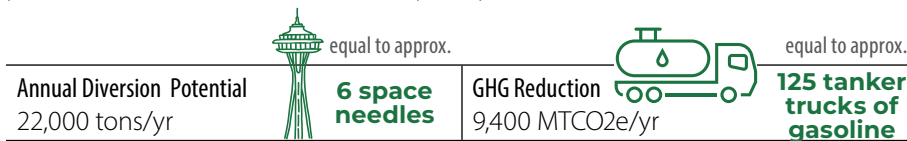
King County is planning public engagement through 2023 on options to expand organics collection. Based on this outreach, SWD will engage cities, haulers, processors, the Utilities and Transportation Commission (UTC), and elected officials on potential policy proposals. Potential collection changes throughout King County could begin as early as 2025.

IMPACTS

The majority of King County single family customers have separate organics collection – in some cities almost 100% of garbage subscribers also have organics collection. However, in other cities, the organics subscription rate falls to less than half. New strategies aim to get residents who do not currently subscribe or compost at home to add and use the service, and overall get more residents to place food scraps in their curbside food and yard waste carts for composting. Depending on additional services, collection costs may go up \$10 - \$16 a month. This cost increase could be mitigated by moving to a smaller garbage container.

BENEFITS

This action, which includes focusing on unincorporated King County and partnering with cities that have significant numbers of customers with lower organics subscription rates, has the potential to divert up to 22,000 tons of food waste, reduce emissions associated with throwing food away, and extends the life of the landfill. Diverting food waste from garbage also helps close the loop for food, since it can be turned to beneficial products such as compost, which in turn provides nutrients to the soil for new plant production.



Organics Collection Community Impact

Several communities in western Washington have every-other-week garbage services, which can encourage residents to put more food waste in their food and yard waste carts instead of throwing it away as garbage. This reduces the cost of garbage collection and can potentially reduce the trucks on the road through neighborhoods. In City of Renton, this strategy has been successful in reducing garbage and increasing recycling and composting. After implementing their residential program in 2009, residential recycling tons increased by 27% and residential tons of garbage decreased by 18%. City of Olympia has also had a similar reduced garbage collection schedule, and when initially implemented, only a small percentage chose to keep the more expensive weekly garbage service.

City of Seattle has strong policies that promote the diversion of food waste from garbage. In 2009, Seattle required all residential properties to either subscribe to food and yard waste collection or participate in backyard composting, and in 2015, Seattle banned the disposal of food waste in garbage. As a result, food waste in Seattle's single-family residence garbage stream fell from 33% in 2006 to 20% in 2020.



The Re+ Community Panel and King County staff meets at Crestview Park in Tukwila

Bringing together diverse communities and voices to chart a path toward a more equitable, waste-free King County.

This panel is guiding the implementation of Re+ to better address the needs of King County communities that have historically been excluded and under-served. Each of the 10 people on this panel identify as a frontline community member.

IMPLEMENTATION

The Community Panel formed March 2022 and is expected to meet regularly through 2023. Meetings are used to discuss how each Re+ action can be more community friendly and to develop evaluation methods to measure impacts in equity, community engagement, and tribal relations.

The Re+ Actions outlined in this version of the Re+ Plan were created without the input of frontline communities. Correcting this oversight, SWD is currently working with the Community Panel and other community-focused groups to inform new and existing Re+ actions.

IMPACTS

Impacts will be seen throughout the King County Solid Waste System to better serve residents and businesses, and to create more opportunities for interested frontline community members to get involved in SWD policies.

Costs for this program are included in the division’s 2023-2024 budget and are estimated to be \$75,000 a year for consultant support and member compensation.

“We’re here to be a sounding board and to guide Re+ in a way that connects with our segments of the community.”

-Re+ Community Panel member

BENEFITS

The Community Panel is an opportunity for community members to help shape solid waste policies to best serve historically overlooked populations in King County. Their experiences and insights will highlight areas needing more attention from the Solid Waste Division. The Panel also provides an open and reliable platform for participants to be involved and heard.

A competitive grant program for King County cities to implement innovative zero waste and recycling programs.

This program is open to King County cities who have signed a commitment to contribute to Re+ and the County’s zero waste of resources goals. Target materials will focus on organics (including food and yard waste), plastic, and paper. Projects on Prevention & Reuse, Recycling & Composting, and Equity and Social Justice (ESJ) will be given funding priority. \$300,000 is reserved for the 2023-24 biennium for these grants.

IMPLEMENTATION

King County plans to open the application period in early 2023 and award grants in summer 2023.

IMPACTS

Re+ City Grants will facilitate investment into new, innovative waste prevention, reuse, and recycling projects run by cities. Impacts will be seen through the King County Solid Waste System by helping prevent and reduce waste, reinvent the system and find new purpose for the recyclable materials that currently go to the landfill.

BENEFITS

Projects funded with this grant could result in many environmental and social benefits. Project outcomes could include rescuing food for human consumption, reducing greenhouse gases, creating green jobs, and saving water and energy. Projects with an emphasis on equity and social justice could include serving non-English speaking populations, partnering with Tribes, and providing cultural competency training.



King County cities have implemented a variety of Waste Reduction and Recycling projects to benefit frontline communities.

The City of Auburn held a recycling event in the neighborhood of an underserved area to collect bulky items, concrete, etc. Those that attended were positive about having a collection.



The City of Bellevue translated outreach materials into top 7 languages and tailored sorting signage and language offerings as appropriate to specific properties. The City of Maple Valley partnered with the Snoqualmie Indian Tribe on recycling collection events. And the City of Shoreline conducted a business compost pilot with outreach materials in languages other than English, including Amharic, Mandarin, Cantonese, Korean, Spanish, and Vietnamese.

Working collaboratively to reach shared goals and accelerate our region's progress towards a zero-waste, circular economy

Full implementation of Re+ will require a multi-year, multi-layered effort that will include state, county, and city legislation to achieve the program goals by 2030. King County is coordinating with cities to streamline our efforts and works towards standardized waste and recycling guidelines. Solid Waste Division staff will be convening a group of elected officials and a staff working group to both identify challenges and opportunities of Re+ policy implementation. In addition, to bolster the efforts and sense of urgency and unity on moving towards a zero-waste, circular economy, cities and other government entities will be asked to sign on to a pledge of shared commitments that are aligned with the goals of Re+.

IMPLEMENTATION

Early communication with cities began in May 2022 and included Re+ presentations to city councils and associations, and requests for signatures of a Re+ City Pledge. SWD plans to provide ongoing email updates and work group meetings with city staff and elected officials.

IMPACTS

Impacts of collaboration will be seen throughout the county and cities through joint policy development, technical assistance, and information sharing. These efforts will provide the opportunity for collaboration, countywide policy development, shared community understanding of recycling and composting guidelines, and a reduction of waste going to the landfill.

BENEFITS

The City/County Collaboration is an opportunity for the cities and King County to work together to accelerate the implementation of Re+, ensure consistent policy across both the County and cities and reduce the amount of recycling and waste that ends up in the landfill. It also is an excellent opportunity to improve and develop relationships with key policy makers that are committed to reducing greenhouse gases and landfill waste.

City/County Community Impact

Regional collaboration between local governments and the people they represent are an environmental success story. It started in the 1960s when residents led a grassroots campaign build a regional sewer system to clean up widespread water pollution and regulate the disposal of industrial waste.

In the 1980s, King County cities again came together to develop one of the nation's first curbside recycling programs to reduce garbage in the Cedar Hills Regional Landfill.

When the Chinese government banned the import of recyclable materials in 2018 due to contamination and lack of economic viability, our city partners again coalesced under the umbrella of the Recycle Right Communication Consortium to reassure the public that their recycling efforts were still environmentally valuable, and to emphasize the need for customers to reduce contamination by making sure their curbside recyclables are always empty, clean, and dry.

Now, it's our turn to leave an environmental legacy for the next generation by doing our part to tackle climate change and the impacts on King County communities through the actions outlined in the Re+ Program. Residents, local governments, and businesses will once again need to advance solutions to the problems created by waste, and to do so in an equitable way so burdens and benefits don't disproportionately fall to some communities at the expense of others.

Re+ Action

Non-Residential Food Waste Recycling

Providing technical support to local businesses to help them keep their food waste out of the landfill and manage it as a resource

Re+ will be working with local businesses and restaurants to help separate their food waste. SWD is conducting research on the ways this waste can be turned into a resource, like compost to help grow food, or create renewable biogas energy (through anaerobic digestion or co-digestion) that can help power businesses and homes.

IMPLEMENTATION

King County plans to coordinate any policy changes with cities, engage with food service businesses, and work with haulers on food waste collection beginning in 2023. The County will also plan for the building of any necessary SWD, Wastewater Treatment Division, or other food waste processing facilities. Food waste processing is expected to begin in 2026.

IMPACTS

Businesses producing food waste will have to sign up for a food waste collection service, train employees in proper food waste separation, and provide space for food waste collection and storage. Beginning in 2024, the new Organics Management Law (HB 1799) requires businesses to sign up for organics collection.

Careful collection and processing of organic waste may improve conditions for those working or living around waste handling facilities. Keeping food waste out of the garbage should reduce odors and result in fewer rodents, birds, insects, and other scavengers in and around Cedar Hills Regional Landfill.

Cost impacts for this action depend on where this food waste is processed. There is currently capacity at local composters to take in this food waste so businesses and collection companies would pay their tip fees. Building a new processing facility, such as a co-digestion or anaerobic digester facility, could cost at least \$40 million depending on siting and sizing needs. Annual operating costs would likely be over \$1 million annually. These cost increases would be mitigated from increased gas sales and energy credits. These estimates will be refined as decisions are made and more information is obtained.

BENEFITS

This action will target commercial food waste that is currently landfilled. SWD estimates that this could divert between 30,000 and 50,000 tons of food waste per year from landfill disposal. Diverting those organics from the waste reduces odors from transfer and landfilling operations.

SWD estimates that diverting commercial food waste can reduce greenhouse gas emissions by 10,000 to 15,000 tons of carbon dioxide equivalent. This is equivalent to the emissions from 11 million to 16 million pounds of coal burned. This action could create 20-25 permanent jobs.



CO-DIGESTION

An anaerobic process where food waste is added to wastewater treatment digesters to create energy and biosolid fertilizers.

Food Waste Programs in New Jersey

New Jersey's Rahway Valley Sewerage Authority (RVSA) is turning uneaten, unsold, and inedible food waste into renewable energy. It's a partnership between the RVSA, commercial and residential food waste generators, and the private food waste processor WM. Located at an existing solid waste transfer station, the food waste processing facility can handle up to 500 tons of food waste and 60,000 gallons of liquid organic material per day. That's a lot of waste every day! For comparison, a Solid Waste Division transfer trailer typically carries between 25 and 30 tons of waste per load.

Organic materials are cleaned, blended, and then delivered to an RVSA wastewater treatment plant. There, the food waste slurry is carefully combined with other wastewater to produce renewable energy in the form of biogas.

wasteadvantagemag.com/tackling-challenging-waste-streams-to-recycle-food-waste/

TIP FEE

A fee paid by those disposing their material at a transfer station or landfill. Tips fees are based on the weight of material being disposed.

Mixed Waste Processing

A “last screen” for capturing recyclables out of the waste stream.

Mixed Waste Processing (MWP) uses various types of sorting and processing equipment to remove valuable resources from the waste stream. Waste is fed into the MWP facility where the recyclables are separated from residual garbage. Once separated, these resources are sorted and prepared for sale and reuse.

IMPLEMENTATION

Re+ is conducting an analysis of Georgia Pacific’s Juno MWP technology with an expected completion of mid-2023. The use of an expert consultant will help inform the County’s analysis and recommendations for the best MWP method to meet King County needs.



An existing mixed waste processing facility in Oregon

IMPACTS

MWP operations can divert up to 75% of municipal waste, thereby significantly reducing the amount of waste that goes to the landfill and its associated costs. While some communities use MWP as the only recycling separation method, most use MWP as a final screen prior to disposal, and only after effective curbside recycling programs. Re+ will rely more heavily on earlier actions to recover clean, and therefore more valuable, recyclables, but MWP will help ensure that even dirty recyclables are going into the correct channels.

Costs depend on the technology chosen and capacity of the facility. Capital costs are likely to be over \$50 million depending on siting and sizing needs and annual operations are assumed to be at least \$15 million. These estimates will be refined as decisions are made and more information is obtained.

BENEFITS

In King County, a MWP facility could divert between 50,000 and 300,000 tons per year from landfill disposal, depending on how the MWP system is set up. Many MWP systems remove organics from the waste, which reduces odors from a landfilling operation. Organics can be composted and can also be used in an anaerobic digester to produce renewable gas. Captured metal, plastics, and paper can be a revenue source for the facility operator.

A MWP facility can increase recycling rates without any additional behavior change from consumers. Diversion through curbside recycling programs is preferable to diversion through MWP, but MWP can be used to get at the resources that do get past other waste prevention and recycling collection programs.

SWD estimates that a MWP facility for King County’s waste can reduce greenhouse gas emissions by 70,000 to 425,000 tons of carbon dioxide equivalent. This is equivalent to the emissions from 77 million to 470 million pounds of coal burned. A MWP facility typically provides 20-30 permanent jobs.

Mixed Waste Processing and Santa Barbara County

In 2021, the Santa Barbara County ReSource Center opened at the Tajiguas Landfill, just outside of Santa Barbara, CA. This MWP plant sorts about 175,000 tons of waste per year with a variety of state-of-the-art equipment. It separates the waste from the resources and reduces landfill tonnage by about 60%. It captures typical recyclables like metals and plastic, plus it directs organic materials to an anaerobic digester located on-site. The anaerobic digester further processes that organic waste, captures methane gas, and makes enough electricity for the ReSource Center and for over 1,000 homes.

Through this innovative project, the community gets nutrient-rich compost, green energy, and can boast that they are recycling over 85% of their waste. School and community groups can visit the Center and watch it all happen from the Education Center.

lessismore.org/material_categories/9-trrp/



equal to approx.

Annual Diversion Potential
200,000 tons/yr

**54 space
needles**

Annual GHG Reduction
141,000 MTCO_{2e}/yr



equal to approx.

**30,000
cars driven
for 1 year**

Stimulating the waste-free economy through inclusive and equitable grants, technical support, and guidance.

King County will deliver business development, mentoring, networking and access to funding pathways for circular economy initiatives through NextCycle Washington, an innovation platform and accelerator program for organizations and businesses diverting materials and using recycled materials in manufacturing. This program is coupled with the Re+ Circular Economy Grants, a \$2 million competitive grant program open to private, non-profit and public entities to support waste prevention and waste diversion. NextCycle Washington will also support smaller entities and community groups with capacity building and seed funding through the Renew Seed Grants.

IMPLEMENTATION

In 2022, SWD launched the inaugural NextCycle Washington Accelerator Program and Re+ Circular Economy Innovation Grants. The NextCycle Washington Renew Seed Grants will be launched in late 2022.

IMPACTS

Exact impacts will depend on the projects, organizations and communities that participate in the program, but these would prevent and divert waste, reduce emissions and environmental impacts, bolster recycling and reuse markets, and support equity and social justice initiatives in King County.

BENEFITS

Re+ Circular Economy Grants and NextCycle Washington will develop end markets for recycled materials and also prevent waste by supporting reuse, repair and remanufacturing, which in turn will lead to greenhouse gas reductions. These projects will spur economic investment in the region and support the development of green jobs as well as build regional supply chain resilience. Through community involvement and input, these programs are incorporating measures to reduce barriers that frontline communities and businesses face when attempting to access similar technical assistance and funding opportunities.



NextCycle Michigan supports recycling leadership in communities

A sister program, NextCycle Michigan, supports a variety of entrepreneurs, companies, organizations, and communities with technical support, financial resources, and capacity building for recycling, recovery, and reuse initiatives. One such organization is Green Living Science (GLS), an outgrowth of Recycle Here!, Detroit’s drop-off recycling center and the city’s neighborhood recycling program. GLS works to increase accessibility of recycling services at homes, schools and businesses as well as empower every individual and business to actively practice reducing waste. They partner with local schools, block clubs and neighborhood organizations to educate residents and young people about waste prevention and recycling. GLS and their partner Zero Waste Detroit have helped over 26,000 families sign up for free recycling carts in collaboration with the City of Detroit. They also partner with businesses to help them change their recycling habits and aid in waste reduction.

theneighborhoods.org/story/green-living-science-reaches-out-detroit-youth-help-reduce-waste

2022 NextCycle Washington Circular Accelerator Projects

UPSTREAM PROJECTS (e.g., waste prevention, sharing, reuse, repair, etc.)

Plover

Helping businesses create an upcycled product line within their brand by utilizing their unsellable inventory and textiles.

Refugee Artisan Initiative

Upcycling used fire hoses with refugee and immigrant women's sewing and handcraft skills.

GearGarage

Facilitating the peer-to-peer rental of outdoor gear online by matching renters with available lenders who live nearby.

Okapi Reusables, LLC

Establishing a reusable cup network for cafes (they currently operate in Portland).

South King Tool Library

Developing a viable "Tool Library in a Box" model, including a combination of text documents, videos, resources, marketing packets, database integrations and professional guidance.

Just Right Bite

Creating insect-based pet food and supplements.

Community Gearbox

Facilitating the sharing, co-ownership, and mobilization of resources online amongst people who know and trust each other.

DOWNSTREAM PROJECTS (e.g., recycling, composting, anaerobic digestion, etc.)

Duwamish Valley Sustainability Association

Using an anaerobic digester to create energy and a liquid fertilizer for local farms from organic waste.

Glacier

Deploying robotics and artificial intelligence for material recovery facilities.

Regenerated Textiles

Developing and licensing/operating shipping container-sized recycling modules to transform landfill-bound textile waste into like-new fiber to be reinserted into the apparel supply chain.

Birch Biosciences Inc.

Using enzymes to depolymerize plastic as a recycling approach, looking to develop a pilot demonstration plant.

Glass Packaging Institute

Improving the feasibility and economics of recycling glass in underserved and more rural areas of Washington - proposing a glass aggregation plant in Walla Walla.

Ground2ground Glass

Processing glass into a natural sand substitute in the Walla Walla Valley (wine region).

Book Hill Group Inc.

Designing products, such as garment bags and household accessories, for laundry, textiles, and wardrobe that will utilize recycled content. Feedstock includes perpetually reusable materials like wood waste, paper, plastics, fishing nets, and metal.

Re+ implementation

ACTION	OWNER/PARTNERS	EST. DELIVERABLE DATE	STRATEGY
Extended Producer Responsibility	Owner: Northwest Product Stewardship Council (NWPSC) Partners: King County SWD, Washington State Association of Counties Solid Waste Managers (WACSWM), Association of Washington Cities (AWC), Zero Waste Washington and other non-governmental organizations	<ul style="list-style-type: none"> Pass EPR legislation for Packaging and Paper Products by May 2023. Statewide EPR Program for Packaging & Paper Products would potentially start in 2027. Statewide Reuse and Recycling Targets would potentially be achieved by 2030. 	2 3 5
Statewide Organics Policy Legislation and Implementation	Owners: Washington State Department of Ecology, King County SWD	This is an ongoing action item. King County will continue to support organics legislation at the state level and will be implementing aspects of the Organics Management Law (HB 1799) until 2027.	2 3 5
Organics Collection	Owner: King County Partners: King County Department of Local Services, Collection companies, WA Utilities and Transportation Commission,	Begin public engagement in 2023 with a goal of implementing policy changes as early as 2025.	5
Community Panel	Owner: King County SWD Partners: King County Frontline Communities	Established March 2022 with Re+ work ongoing through 2023. The panel is anticipated to shift to a broader SWD focus starting in 2024.	2 3
Re+ City Grants	Owner: King County SWD Partners: King County Cities	<ul style="list-style-type: none"> Outreach to Cities Q3 and Q4 2022 Applications open Q1 2023 2-year contracts begin ~ July 2023 	2 4
City/County Collaboration	Owner: King County SWD Partners: Cities, Association of Washington Cities, Sound Cities Association, Washington State Association of Counties	<ul style="list-style-type: none"> Outreach began in earnest in May 2022. This effort will be frequent and ongoing through full Re+ implementation. Efforts will include the Re+ Pledge, presentations to councils, an elected official working group and a staff working group 	2
Non-Residential Food Waste Recycling	Owner: King County SWD Partners: King County Wastewater Treatment Division, other private partners	Implementation in 2024	3 4 5
Mixed Waste Processing	Owner: King County SWD Partners: King County cities, private facility operators	Test processing to occur in first quarter 2023; other research on-going; bring into King County system by 2030.	3 4
Innovation Development & Re+ Circular Economy Grants	Owner: King County SWD Partners: Department of Ecology and Commerce, Seattle Public Utilities.	The Re+ Circular Economy Grants launched in the spring of 2022 and will be occurring on an annual to biannual schedule. NextCycle Washington launched in the summer of 2022 and is an ongoing program.	2 4

RE+ STRATEGY KEY

1 System-wide approach
 2 Resources at all levels
 3 A more circular economy
 4 Infrastructure and innovation
 5 Policy and legislation

Re+ future actions

The Re+ Actions detailed above will divert a significant amount of recyclables away from Cedar Hills Regional Landfill, but in order to prevent any and all recyclables from entering, additional actions must be taken. Here are a few that are on the horizon for Re+.

FUTURE ACTION	DESCRIPTION
<p>Wood</p>	<p>Wood “waste” generated at construction sites and from home remodels in King County is primarily landfilled or burned for fuel, with about 60,000 tons per year of this clean wood (mostly pallets and dimensional lumber) currently buried at Cedar Hills. To achieve the goals of Re+, Strategic Climate Action Plan, SWD and King County Comprehensive Plans, and contribute to the goals of the Equity and Social Justice Strategic Plan, it is imperative that we support and strengthen reuse and recycling of wood currently buried or burned.</p> <p>Shoreline Recycling and Transfer Station Salvage & Reuse Contracting with a local salvage and reuse business in 2023, this project plans to collect and divert clean wood (primarily dimensional lumber) and reusable building materials (such as shelving, fixtures, and windows) from the Shoreline Recycling and Transfer Station. These materials will be made available for reuse and resale in local salvage stores. Depending on the outcomes of this project, it could be replicated at our other transfer stations.</p> <p>Enumclaw Transfer Station Pallet Pilot This project plans to divert more intact pallets for reuse and resale by changing the handling and transportation of pallets on top of compacted clean wood loads going to our wood processor, Rainier Wood Recyclers. Depending on results at Enumclaw, this pallet handling change could be replicable at Factoria and Bow Lake Transfer Stations, and elsewhere.</p>
<p>Multi-Family Recycling & Composting</p>	<p>With the rapid rise in the cost of living in the King County region and subsequent gentrification, more residents, especially people of color, are moving into multi-family buildings. Re+ is initiating conversations with community and multi-family residents on how the region can increase access to Re+ and our zero waste, circular economy actions.</p> <p>The first of these conversations occurred on August 31, 2022 with representatives from the Lake City Collective, Tenants’ Union of Washington State, Black Farmers Collective, Living Well Kent, King County Renters’ Commission, and the Housing Justice Project.</p>
<p>The solid waste materials management system of the future</p>	<p>Once the results from our research and studies have come in and policy proposals are passed, we’ll turn our focus to how our system of regional recycling and transfer stations, including our future planned new stations, can support the Re+ transition.</p>



Financial considerations

The 2019 Comprehensive Solid Waste Management Plan includes a financial policy to “keep tipping fees as low as reasonable, while covering the costs of effectively managing the system, protecting the environment, encouraging recycling and providing service to customers.” SWD has been able to abide by this policy through financial stewardship, including:

- Extending the life of the landfill (the lowest cost disposal option) by compacting waste to use less space, developing new areas for burying garbage, and implementing waste prevention and diversion efforts that reduce the amount of waste coming to the landfill.
- Reinvesting revenues from landfill gas sales to mitigate rate increases as well as fund new investments in climate mitigation actions, such as purchasing electric vehicles.
- Introducing a low-income discount program called Cleanup LIFT that reduces the cost for eligible customers by 50% of the minimum fee, providing relief to our most vulnerable customers.



Solid waste services in King County are funded primarily through garbage collection – garbage consumers pay more the more they throw away – while recycling fees are kept low, or free in some cases, to entice people to use the service. This business model conflicts with zero waste goals because as waste is reduced, the amount of revenue is reduced, creating a need to increase rates significantly. In response to this, SWD will implement a new rate structure in 2024 that includes a fixed component not tied to how much people throw away. This will lessen the impact on revenues as more of the waste stream is prevented or diverted to better uses. New ways to process recyclables will cost money and may also require new pricing systems and structures.

Calculating costs for the actions above is difficult due to many different individuals, households, businesses, and organizations playing a role in delivering these actions. Reliable and consistent cost impact data from third parties is difficult to find given the proprietary nature of this information. Some of the actions need to be further refined as well, such as how legislation is written and adopted, which will impact levels of service and costs to deliver these services.

In terms of costs borne solely by the Solid Waste Division, around \$9 million is budgeted for the 2023-2024 biennium:

- **Investing in green jobs and the community (\$4 million)** – this includes funding for the Re+ City Grants and Circular Economy Business Innovation Development and Grants, as well as compensating members on the Community Panel.
- **Diverting food waste, organics, and recyclables (\$4 million)** – this includes funding for implementing the Statewide Organics Policy Legislation (e.g. helping businesses separate out their food waste), planning and design for Non-Residential Food Waste Recycling, and conducting public outreach and engagement on Single Family Organics Collection.
- **Communications and program support (\$1 million)** – this includes funding to increase communication of the Re+ program (e.g. ad buys, surveys), additional staff to implement Re+ actions, and consultant support for analysis and implementation of actions.

Financial impacts shown for the actions above are our current best estimates based on available information and assumptions and will be refined in the future as these actions are further developed and more concrete financial information can be reasonably obtained.



kingcounty.gov/solidwaste

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King County

Department of
Natural Resources and Parks
Solid Waste Division