

Re+ Fast Start Action Overview

Co-digestion of Commercial Food Waste

Description

Using King County Wastewater Treatment Division (WTD)'s existing infrastructure to convert food scraps into fuel.

Using policy or pricing strategies paired with outreach and technical assistance, the King County Solid Waste Division (SWD) will work with businesses to source separate their food waste. This food waste will be designated for co-digestion in partnership with King County Wastewater Treatment Division (WTD).

In co-digestion, food waste is collected and blended into a slurry, then added to digesters at a wastewater treatment plant. Digesters—the large tanks that use natural biological processes to break down organic waste—turn the slurry and wastewater mix into a nutrient-rich soil amendment and create methane that can be turned into renewable natural gas.

Background

Based on King County's 2019 Waste Characterization Study, food waste made up 16% of the waste stream, roughly 138,000 tons. Businesses threw away 65,000 tons of that food waste. Many businesses do not subscribe to organics collection, so their current practice is to throw food in the garbage. A main issue with recycling this food waste is collecting it in the first place. If the food waste can be successfully collected, options are to turn it into compost or convert it into biogas to create energy through systems like co-digestion. The regional composting industry is nearing permitted maximum capacity limits, so setting up co-digestion for commercial food waste provides an opportunity to significantly reduce food waste and divert it toward better uses. Co-digestion also produces a fertilizer-type product that can be used for beneficial purposes.

Benefits

- Diversion Potential: 30,000 – 50,000 tons per year
- Reduced landfill odors
- GHG Reduction: 10,000 to 15,000 MTCO₂e
 - This is equivalent to the emissions of 60 million pounds of coal burned¹

¹ <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>



- Jobs Generated: Potentially 23 permanent jobs to process food waste for co-digestion plus dozens of jobs to build the pre-processing plant.²
- Biosolids creation (fertilizer)

Considerations

- Costs
 - Early estimates suggest building the pre-processing plant where the slurry is made could cost \$10M while upgrading the WTD facility could cost \$70M.
 - Annual operations and maintenance is estimated to cost \$2.5M annually.
- Changes to Collection
 - Need to pursue either policy changes at the state or city level that require businesses to have organics collection; or pricing levels that incentivize businesses to sign up for organics collection.
 - More robust organics collection routes will be needed.
 - Haulers and the operator of the pre-processing facility will need to develop a quality control feedback loop to keep feedstock quality high. In this feedback loop, haulers and facility operators will identify high-contamination routes and generators; then work with businesses to increase quality.
 - Siting for the future slurry facility will be conducted which will determine slurry transportation route to WTD facility.
- Behavior Change
 - Customers or workers at these businesses need to separate their food waste from the garbage.
 - SWD will need to dedicate educational resources to guide businesses in diverting food waste towards co-digestion.

ESJ Considerations

Commercial food waste collection for co-digestion reduces methane releases from handling and landfilling food waste; and reduces odors from landfills. Methane is a powerful greenhouse gas causing climate change, which disproportionately impacts historically disadvantaged communities. Methane knows no political boundaries, so methane reductions in King County help both in and out of King County. Capturing bio-gas from waste also replaces petroleum-derived fuels and so reduces the community and climate impacts of extracting and refining petroleum. If sited strategically, co-digestion can decrease waste trucking volumes, and reduce transportation impacts on communities.

² https://www.epa.gov/sites/default/files/2016-11/documents/final_2016_rei_report.pdf



Next Steps

SWD is collaborating with WTD on developing a more detailed implementation plan which will be determined by WTD's ability to start accepting food waste slurry. Timeline components will include:

- Outreach to businesses/generators
- Coordinate policy changes in KC cities
- Train and educate operations staff
- Work with haulers on food waste collection
- Planning, siting, design, and construction of needed SWD and WTD facilities
- Start processing food waste
- On-going: Continue and refine technical assistance to businesses
- On-going: Monitor and support relevant statewide organics legislation

Questions?

Email

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Re+ Fast Start Action Overview

Circular Economy Business Development and Grants

Description

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

Background

Market development for recycled material, waste prevention and reuse are all crucial components of Re+ and for successfully reaching King County's zero waste of resources by 2030 ordinance. Beyond meeting supporting zero waste goals, market development and waste prevention improves climate outcomes, creates local green jobs and supports regional economic growth. Organizations seeking to utilize recycled feedstocks in Washington State often encounter a lack of funding, business development and technical assistance support, as well as a lack of incentives to use materials from the recycling stream in the region.

To close these gaps and build a more comprehensive market development strategy in the region, King County is pursuing the creation of a circular economy platform, which will act as an "umbrella" for all market development and circular economy activities to live under. Taking this holistic approach to offering resources to organizations looking to prevent waste or to utilize recycled feedstocks has proven successful in other states and jurisdictions, including in Michigan and Colorado, where they also implemented a NextCycle platform.

This platform, called NextCycle Washington, will contain the following elements:

- **Business Development and Technical Support:** Provides business development, such as site design and supply chain analysis, and business plan assistance for organizations. It could also incorporate already established incubators and accelerators in the region and state. See Appendix A for projects examples.
- **Re+ Circular Economy Innovation Grants:** The platform can support grant opportunities from various organizations; the first of these opportunities will be the Re+ Circular Economy Innovation Grants. These grants will support market development and circular economy opportunities and will launch in early 2022. These grants will amount to \$2 million in funding per biennium and are open to organizations diverting waste from the King County solid waste system. See Appendix B for project elements.
- **Partnerships and Networking:** This platform is led by King County and being brought to a statewide audience through a partnership with the Department of Ecology, the Department of Commerce and Seattle Public Utilities. It will continue to bring together organizations engaged in this work and will assist in making connections for mentorship, partnerships



and/or matchmaking. It will also engage networks and community groups to support their participation in this work.

The grant offerings in this program will expand in the next few years, potentially including competitive grants for cities and schools.

Benefits

- Creating strong end markets for recycled materials and waste prevention and reuse efforts are crucial to the success of any waste diversion efforts. The NextCycle Washington platform and Re+ Circular Economy Innovation Platform will support diversion and the use and remanufacturing of that diverted material, which in turn supports greenhouse gas reductions.
- These projects are also meant to spur economic investment in the region and to support the development of green jobs in this space.
- Through community involvement and input, these programs are incorporating measures to reduce barriers that BIPOC communities and businesses face when attempting to access similar technical assistance and funding opportunities.

Exact impacts will depend on the projects and organizations that get brought into the program, but applications will be scored across several impacts, including: diversion, climate and environmental reductions, equity and social justice initiatives, and economic benefits.

Considerations

- Costs
 - NextCycle Washington: \$500,000 annually in business development resources, costs shared among funding partners
 - Re+ Circular Economy Innovation Grants: \$2 million per biennium
- Network coordination: The NextCycle Washington platform will bring partners together from across the state, which will lead to stronger markets for recycled materials across the region but can make the implementation more challenging. This network will need to be coordinated in a manner that balances the needs of all partners, while maintaining the highest level of support of participants.
- Other external limitations: Like any market development support program, this platform will face limitations in the support that it can offer businesses and organizations. While it will offer support in issues including permitting, siting and access to feedstocks, many of these barriers fall outside of the direct control of the project partners, and therefore, organizations might still be hindered by these factors.

Equity and Social Justice Considerations



To reduce barriers to funding and resources for frontline communities, King County has led a co-design process that is a participatory approach in which community members are treated as equal collaborators and guide the development of the design of the platform and implementation of its resources. This program will also include business development, technical assistance and smaller grants, called Renew Seed Grants, geared toward community groups and entrepreneurs, which will offer more opportunities for BIPOC community members and business owners to access these resources and funding.

Next Steps

- Q2 2022: Re+ Circular Economy Innovation Grants Launch
- Summer 2022: NextCycle Washington Launch
- Summer 2022: Renew Seed Grants Launch

Questions?

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Appendix A. NextCycle Washington Potential Project Examples

- Expand post-consumer reclamation capacity of plastic and/or paper
- Develop a new expanded and permitted compost site
- Bottle wash and reuse infrastructure development
- Food waste prevention technical assistance program for businesses
- Repurposing textile waste into other materials, such as insulation

Appendix B. Re+ Circular Economy Grants Eligible Project Elements

- Projects that will benefit an environmental justice community or overburdened/vulnerable populations within a community through the prevention, reuse, and recycling of organic (including food waste and wood), paper and plastic materials.
- Projects that increase prevention, reuse, or recycling of organic (including food waste and wood), plastic and paper materials.
- Projects that increase access to reuse programs and develop or build reuse infrastructure and systems.
- Projects that create new markets or expand existing markets and supply chains for recycled materials.
- Projects that stimulate demand for recycled materials and recycled content products.
- Projects that assist businesses that manufacture, market and use recycled-content products.
- Projects that increase food rescue for human consumption.
- Projects that increase diverting food scraps for animal consumption.
- Projects that commercialize technologies to replace materials with recycled content in order to improve the quality, increase the quantity and/or grow demand for utilizing recycled materials in manufacturing or other uses.
- Projects that include research and development of new uses for recycled materials that clearly demonstrate future diversion potential.
- Projects that stimulate demand for reused materials and products.
- Projects that demonstrate improved economic and environmental impacts, including greenhouse gas reduction, jobs created, water saved, energy saved or other positive environmental and economic outcomes.



- Projects with benefits that exceed costs.

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Re+ Fast Start Action Overview

Single-family Organics Collection

Description

Through Re+, King County Solid Waste Division (SWD) is looking into effective ways to divert organics and food waste into compost and away from landfills from single-family residents throughout King County. We'll be using information gathered from surveys, consultant studies, and the Re+ Community Panel to determine the method that best serves the need of King County communities with a specific eye on equity.

To “walk the talk,” SWD is starting by looking to strategies that can be implemented in unincorporated King County and hopes that findings from the public outreach process and actions taken by the County can be also considered by cities in the future. For example, these strategies could include mandatory organics and every-other-week garbage collection.

Background

Compostable material, particularly food scraps, are one of SWD's priorities for the proposed Re+ plan. Diversion of food scraps is important to SWD because:

- Food waste represents a large portion of landfilled material (nearly 16% of total disposal)
- Food waste diversion is key part of our commitments to the Pacific Coast Collaborative and a target in the Strategic Climate Action Plan.
- There is already a robust collection and processing infrastructure for food waste and other compostable material in King County.
- There remains significant room for improvement. A 2018 residential study estimated the single-family capture rate for food waste was 18%. This means that nearly 4/5 of all food waste was landfilled instead of composted.

SWD is focusing on the unincorporated areas to start because one of the values in the Re+ plan is that King County leads the way, and because the unincorporated area represents a large number of residents in King County. Nearly 1/5 of all single-family subscribers to curbside solid waste collection services in King County are in unincorporated King County. Of these residents, only about half of these households opt into curbside food and yard waste collection; reaching non-subscribing households represents a large opportunity to divert more compostable material from landfill.

Benefits

- Diversion Potential
 - From unincorporated King County only, 7,000 – 14,000 tons of food waste diverted with a strong policy action (e.g., requiring organics service with garbage; food waste ban)
- GHG Reduction: 3,000 – 6,000 MTCO_{2e}



- If all curbside customers have food and yard waste service (voluntary subscription rate in unincorporated King County is around 50%), increases collection efficiency for food and yard waste. Existing subscribers will likely see a slight reduction in the cost of service.

Considerations

- **Residents may be already managing food waste at home outside of the curbside carts.** Policy changes should consider and support what residents report doing to manage their food waste (if they are using in-home management strategies) and ensure that other barriers to voluntary subscription of service are met before putting requirement in place. A 2021 survey of WM customers in service areas regulated by the WA Utilities and Transportation Commission (UTC) who do not currently subscribe to food and yard waste service found that 27% of respondents report composting at home as their primary method for disposal of food waste.
- **Cost of collection services.** SWD needs to better understand to what extent and where households are burdened by the cost of curbside collection services today. A 2021 survey of WM customers in UTC service areas who do not currently subscribe to food and yard waste service found that 70% of respondents report cost as a reason for not subscribing. There is no low-income discount program for curbside collection in unincorporated King County in the current rate structure.
- **Service quality in unincorporated King County and continuing to meet customer expectations.** Customer perceptions of curbside service need to be better understood through discussions with community members, the haulers, and the Department of Local Services.
- **Addressing the needs and concerns of industry stakeholders.** Any collection changes will require the haulers to implement; there may be factors such as supply chain, staffing availability, and other implementation logistics that affect the feasibility of how quickly new requirements can be implemented for residents. SWD will also have to work to address processor concerns around contamination of collected material.
- **Continuing to promote food waste prevention in parallel.** Composting is good but preventing food waste is even better for the climate, and food waste prevention can also help mitigate some of the “ick” factors that are barriers to composting food scraps.

ESJ Considerations

- Cost impacts and affordability of services if curbside organics are a requirement.
- Public process informing the food diversion action should ensure multicultural audiences, particularly in South King County (including Skyway and White Center), are included with in-language options.
- Education and outreach for any subsequent policy should be translated/transcreated into appropriate languages.

Next Steps

- 2022: Public engagement process (focused on unincorporated area residents) to understand how residents manage their food waste today; understand challenges and motivations for using curbside service; and get feedback on potential policy options.
- 2023:



- Develop policy proposals for food/yard waste diversion in unincorporated King County.
- Engage cities to identify what actions they also may be able to take.
- 2024-2026: Seek to pass and implement code changes, with effective dates as timing allows (potentially 2025-2026).

Questions?

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Graphics thoughts

King County's single-family food scraps capture rate is **18%**



To achieve zero food scraps to landfill, we need to both:



Increase subscription to organics service among those who do not subscribe.



Increase use of organics service by those who already subscribe to it.

Capture rate from the organics material market report (2019)

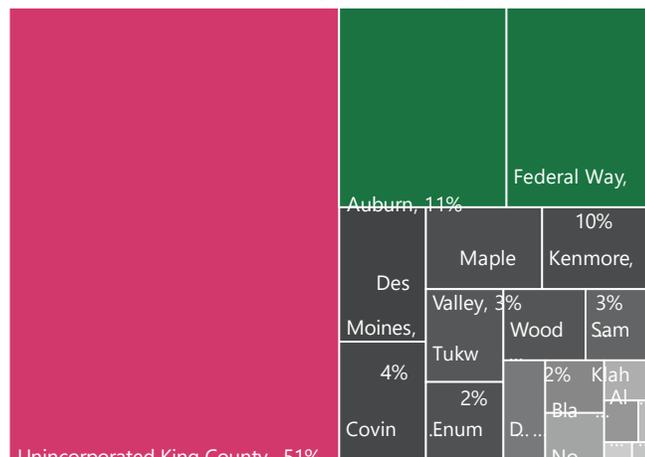


Increasing subscription to organics service

19 cities and unincorporated King County **do not** embed organics.

In these areas, an estimated 60,000 single-family households do not subscribe to food/yard waste collection.

Estimated non-subscribers to food/yard service by jurisdiction(2019)



Source: Estimated from monthly hauler reporting (reported garbage customers minus reported food/yard waste customers)



Increasing use of organics service by those who already subscribe to it.

41-58% set-out rate among food/yard waste subscribers (at time of sampling)

23% of sampled households diverted more than 80% of their food scraps and compostable paper

All numbers are for single -family sector only.
Data from the residential waste characterization study (2018)

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Re+ Fast Start Action Overview

Community Panel

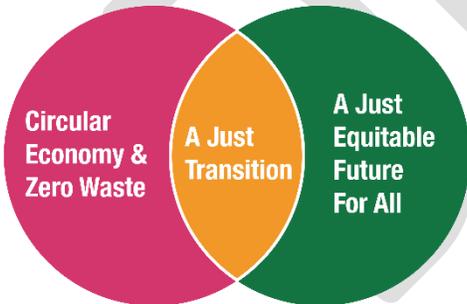
Description

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

The Community Panel aims to provide insight and direction around the intersection of equity and solid waste policies in King County. The panel is comprised of residents, workers, and volunteers of King County who have lived experienced as a frontline community member, are disproportionately impacted by climate change, and more exposed to materials management decisions.

Background

Re+ is built on the understanding that transforming our solid waste systems to be more circular and equitable requires a just transition. As the region transitions away from an extractive economy toward a more resilient, equitable, and sustainable King County, it is important that the County's solutions create opportunities and avoid leaving 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 creating decision-making tables that support the leadership of frontline community members. We are committed to building a path to zero waste that is inclusive and



brings historically overlooked voices to the forefront.

Human activities have increased the concentration of harmful greenhouse gases in our atmosphere, causing extreme weather events and threats to the health of King County residents, especially those of our frontline communities. In addition, decisions on where and how to collect and process materials can often have significant impacts on communities with little or no voice in the decision making process.

What is a Frontline Community?

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 capacity 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



We have invited 10 members of these communities to join our Community Panel and help guide the King County Solid Waste Division in the equitable implementation of Re+. With the work of this panel, we hope to step that much closer to the County's vision of a King County where all people have equitable opportunities to thrive.

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.

Considerations

Most Re+ actions have already been identified so the focus of the panel is to help us with the best way to implement these actions and how to better communicate them to the diverse communities in King County. For future planning efforts, we will better incorporate community panel guidance from step one in order to create a broader set of options to reach zero waste goals.

Equity and Social Justice Considerations

- We expect the Community Panel to provide valuable feedback in the equitable implementation of Re+, but we can't expect them to solve all solid waste-related equity issues. It will take time and multiple hands to assess the impacts of our solid waste system—the Community Panel is just one step in the right direction.
- Re+ and the Community Panel will need to be cognizant of frontline communities not represented on the Panel and of how recommendations may have unintended impacts on these communities.

Next Steps

- March 2, 2022: First meeting, form team agreements
- March 16, 2022: Second meeting, Re+ overview
- Meetings will occur bimonthly following the March meetings

Questions?

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Re+ Fast Start Action Overview

Extended Producer Responsibility for Packaging & Paper Products

Description

Support adoption of a statewide Extended Producer Responsibility (EPR) program that requires companies that make consumer products to fund the recycling system and ensure that their packaging and paper products (PPP) actually get recycled. EPR would save local governments and residents money, increase reuse and recycling rates, and incentivize companies to reduce their use of PPP and design reusable, recyclable, or compostable materials.

Background

In 2019, 91,445 tons (19% of total residential garbage) of packaging and paper products were sent to landfill in King County (excl. Seattle). About half of this was cardboard and paper; 40% plastic; and 10% metal and glass. Most of these materials are potentially recyclable and would save money and reduce greenhouse gas (GHG) emissions.

Recycling has become increasingly more challenging for local governments to manage due to a dramatic rise in the quantity and types of packaging in the waste stream. In 2018, China and other countries restricted the import of recyclable materials from the U.S. These recent changes have made the system more expensive to run, leading to service cuts and/or increased costs for residents.



Figure 1. EPR would make producers responsible for the reuse and recycling of their packaging and paper products ensuring that they become new products and materials in a circular economy.

EPR is a proven policy and has been implemented for packaging in over 40 jurisdictions around the world. EPR programs can be designed in many different ways, but they have all demonstrated that they:



1. Save local governments and residents money;
2. Create more efficient collection and processing of recyclable materials;
3. Reduce disposal; and,
4. Increase recycling.

They also contribute to the generation of separated, high quality secondary raw materials supporting the development of markets and creating local, green jobs.

Benefits

- EPR could increase reuse and recycling rates to 75% or greater, which would divert 25,500 tons or more of material from Cedar Hills Regional Landfill. If this material is recycled, it would correspond to 75,000 (*range 64,000 – 86,000*) MT CO₂e of GHG emissions saved each year. The statewide benefits would be even greater.
- EPR would provide access to convenient recycling at no cost to all residents. The annual savings per household in King County are estimated to be up to be \$60 to \$300. King County would be reimbursed for the collection of recyclables from residents at our Recycling & Transfer Stations.
- With EPR, there would be a single statewide list of accepted recyclable items, and recycling education and outreach would be in consistent, multi-lingual and culturally relevant across the state, which would reduce confusion and ultimately contamination.
- EPR builds on existing service and infrastructure while investing in improvements. It also provides greater transparency on how materials are recycled responsibly. Under EPR, all materials must be sent to verified end markets / countries that meet certain environmental, labor, health, and safety standards.
- The increased collection and processing of recyclable material would create an estimated 1,650 new, local, green, living wage jobs in the state.

Considerations

Producers must fund the entire program including collection, processing, marketing of recycled materials, education, and outreach as well as government oversight and enforcement. This approach incentivizes producers to reduce packaging, innovate and optimize the system in order to reduce costs. Local governments would maintain authority over recycling services but would align their services for statewide consistency. The Department of Ecology would ensure program oversight and compliance.

Haulers and processors must adapt and work with local governments and producers to expand collection and processing capacity. All stakeholders must work together to find the best way to increase and improve reuse, recycling, and composting.

Equity and Social Justice Considerations

All communities in the state would benefit from convenient access to recycling at no cost. Education and outreach would be provided in appropriate languages and be culturally relevant. Before the program is implemented, there would be a stakeholder consultation with underserved communities and communities that bear disproportionately higher levels of adverse environmental, social justice and economic impacts. Recycling end markets would need to meet certain environmental, labor, and health standards which would ensure materials don't cause negative impacts to communities abroad.



There may be concerns that EPR would increase product prices, but evidence has shown that any additional costs incurred by producers would be miniscule and they would not be reflected in retail prices paid by consumers.

Next Steps

- 2022: Work with the Northwest Product Stewardship Council and stakeholders in the interim on a policy proposal for the next legislative session.
- 2023: Advocate for passing EPR legislation for PPP that works for local governments and residents.
- 2023 – 2024: The Dept. of Ecology conducts a Needs Assessment in consultation with stakeholders.
- 2024 – 2026: Producers conduct a stakeholder consultation before developing a plan for the EPR program.
- 2026: Producers through their Producer Responsibility Organization (PRO) submit a plan for how the EPR program for PPP would work.
- 2027: The PRO implements their plan / EPR Program starts.

Questions?

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