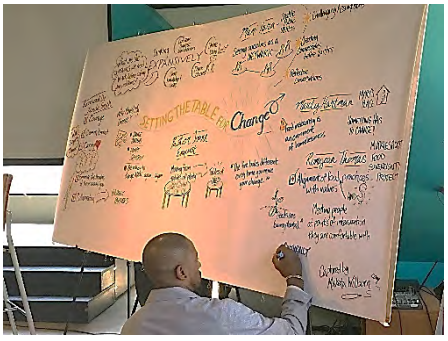
2019 ANNUAL WASTE PREVENTION & RECYCLING REPORT



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CONTENTS

GLOSSARY v

EXECUTIVE SUMMARY 1

Purpose 1

Key Results 1

Next Steps 2

INTRODUCTION 3

Seattle's Recycling Rate Goals 3

Moving Upstream 3

Annual Waste Prevention & Recycling Report 3

MEASURING SEATTLE'S MSW 5

Defining MSW 5

MSW and C&D Data Sources 5

Challenges to Commercial and C&D Recycling Reporting 5

KEY HISTORICAL TRENDS 7

20 Years of Advancing Recycling 7

Keeping Waste Generation in Check 7

WASTE PREVENTION 10

Halve Food Waste by 2030 10

Love Food, Stop Waste 11

Food Rescue Innovation Convenings and Research Lab 11

Master Composter Sustainability Stewards 11

The Garden Hotline 11

Sustainable Landscaping Training 12

Waste-Free Communities Matching Grant 12

EXTENDED PRODUCER RESPONSIBILITY AND PRODUCT STEWARDSHIP 13

EPR Highlights 13

Latex and Oil-Based Paint 13

Solar Photovoltaic Modules Take-Back 13

E-Cycle Washington Electronics Take-Back 13

LightRecycle Washington Mercury Lighting Take-Back 13

King County Secure Medicine Return 13

Product Stewardship Highlights *14*
Compostable Products Labeling Bill 14
Plastic Packaging Study Bill 14

RECYCLING AND COMPOSTING 15

Single-family Residential MSW *15*

Residential Highlights *15*
Community Outreach and Education 16
Beyond the Cart Services 16
Recycle Right Campaign 16

Multifamily Residential MSW *17*

Multifamily Highlights *18*
Tailored On-site Support for Property Management Staff 18
Inclusive and Culturally Relevant Resident Outreach 18
Strategies and Tools for Success 19
New Building Permit Review 19

Commercial MSW *19*

Commercial Highlights *20*
Outreach, Education, and Technical Assistance 20

Self-haul MSW *21*

Self-haul Highlights *22*
Homelessness Response 22

Construction & Demolition Debris (C&D) *23*

Construction & Demolition Debris Highlights *24*
Facility Certification Program 24
Salvage Assessment and Monitoring 24

CONCLUSION 26

NEXT STEPS: 2020 AND BEYOND 27

New Initiatives *27*
Waste Prevention 27
Recycling and Composting 27
Solid Waste Operations 27

Ongoing Activities *28*
Waste Prevention 28
EPR and Product Stewardship 28
Recycling and Composting 28

APPENDIX A: MATERIALS EXCLUDED FROM RECYCLING RATE CALCULATIONS ..... - 2 -

APPENDIX B: OVERALL MSW TONS, 2000-2019 ..... - 3 -

APPENDIX C: SINGLE-FAMILY MSW TONS, 2000-2019 ..... - 4 -

APPENDIX D: MULTIFAMILY MSW TONS, 2000-2019 ..... - 5 -

APPENDIX E: RESIDENTIAL PER CAPITA MSW TONS, 2000-2019 ..... - 6 -

APPENDIX F: COMMERCIAL MSW TONS, 2000-2019 ..... - 7 -

APPENDIX G: SELF-HAUL MSW TONS, 2000-2019 ..... - 8 -

APPENDIX H: CONSTRUCTION & DEMOLITION (C&D) TONS, 2007-2019 ..... - 9 -

APPENDIX I: COMMENTS FROM THE SOLID WASTE ADVISORY COMMITTEE ..... - 10 -

GLOSSARY

- **Beneficial use:** Material not recycled or reused, but used for some other purpose, such as unpainted and untreated wood used as hog fuel for a pulp and paper mill.
- **Composting:** Includes yard waste, food waste, food-soiled paper, and compostable food packaging.
- **Construction and demolition (C&D) debris:** Includes debris and waste materials from construction, demolition, and land clearing activities.
- **Designated recyclables:** Wastes separated for recycling or reuse, such as paper, metals and plastics that are identified as recyclable material pursuant to a local comprehensive solid waste plan.
- **Extended producer responsibility:** Extended Producer Responsibility (EPR) is a mandatory type of product stewardship that includes, at a minimum, the requirement that the manufacturer's responsibility for its product extends to post-consumer management of that product and its packaging. There are two related features of EPR policy: (1) shifting financial and management responsibility, with government oversight, upstream to the manufacturer and away from the public sector; and (2) providing incentives to manufacturers to incorporate environmental considerations into the design of their products and packaging.[1]
- **Municipal Solid Waste (MSW)**: All garbage, recycling, and food/yard waste (also called "compost" or "organics") that residents and businesses set out for collection, as well as the garbage, recycling, and food/yard waste self-hauled to the City's two transfer stations, and compost managed at home by Seattle residents.
- **Product stewardship**: The act of minimizing the health, safety, environmental, and social impacts of a product and its packaging throughout all lifecycle stages, while maximizing economic benefits. The manufacturer, or producer, of the product has the greatest ability to minimize adverse impacts, but other stakeholders, such as suppliers, retailers, and consumers, also play a role. Stewardship can be either voluntary or required by law.[2]
- **Recycling:** Transforming or remanufacturing waste materials into usable or marketable materials for use other than landfill disposal or incineration. For plastics, recycling can occur through mechanical methods that leave the basic structure of the material intact (e.g., grinding, washing, separating) or chemical methods that break polymers down further into monomers.
- **Recycling rate**: A weight-based metric that measures the percentage of generated waste that is diverted from the landfill by recycling and composting. Seattle also includes available reuse data in the calculation of its recycling rate.

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[1] California Product Stewardship Institute, Product Policy Institute, and Product Stewardship Institute. "Product Stewardship and Extended Producer Responsibility," *Product Stewardship and Extended Producer Responsibility Definitions*. Product Stewardship Institute, 21 February 2012, https://cdn.ymaws.com/www.productstewardship.us/resource/resmgr/PSI_Reports/PPI-PSI-CPSC_PS-EPR-Principl.pdf (26 August 2020). PDF, page 2.

[2] Ibid.

- **Rescued or recovered food:** Capturing surplus food that would otherwise go to waste from grocery stores, food service businesses, and other venues by diverting it to local food banks and meal programs
- **Reuse:** Includes items that have been reused or donated for others to use.
- **Self-haul:** When generators of MSW transport their own materials to one of Seattle's transfer stations rather than using the hauling services of the Seattle's contracted haulers or a third-party hauling company.
- **Transcreation:** A culturally-relevant translation conducted with the help of audience research.
- **Waste prevention:** Also sometimes referred to as waste reduction or "precycling." The practice of minimizing waste through responsible purchasing and consumerism. Essentially, removing waste from the waste stream by not creating it in the first place.

EXECUTIVE SUMMARY

Purpose

Seattle City Council Resolution 30990 requires Seattle Public Utilities (SPU) to report annually to the City Council by July 1 on the previous year's progress toward recycling goals, as well as further steps to meet goals in the current and upcoming years. The *2019 City of Seattle Waste Prevention & Recycling Report* (*2019 Report*) not only provides details on the City's progress toward the recycling goals established in the *2011 Comprehensive Solid Waste Management Plan (2011 Plan)*, but also highlights key historical waste generation trends and details accomplishments in the areas of waste prevention, extended producer responsibility (EPR), product stewardship, and recycling.

Key Results

Major highlights from 2019 include keeping waste generation levels steady despite massive growth, as well as leading on statewide EPR and product stewardship laws and recycling initiatives. SPU achieved the following key results in 2019:

- **Kept waste generation in check over a decade of staggering growth**: Despite its ranking as one of the fastest growing major cities in the nation, with over 150,000 newcomers to the city in the last decade, Seattle bucked convention and kept residential waste generation relatively flat.
- **Reached the lowest daily per person residential waste generation rate yet**: Even with a surging population and growing economic activity, Seattle reached its lowest residential per person daily waste generation rate yet in 2019—2.1 pounds per person per day.
- **Played a pivotal role in passage of statewide bills to expand recycling and to improve product packaging:** Seattle has held waste generation steady despite explosive growth, at least in part, because of its regulatory approach to waste reduction and recycling. In 2019, SPU led efforts to:
    1. Create a paint recycling take-back program for Washington State;
    2. Close a loophole in the statewide solar photovoltaic recycling take-back program;
    3. Pass a law to help consumers differentiate between compostable and non-compostable packaging; and,
    4. Craft a law to assess options to meet reductions in plastic packaging through product stewardship.
- **Launched a coordinated, regional "Recycle Right" campaign to improve recycling quality**: In response to higher quality standards for recyclables due to China's recyclables import restrictions, Seattle played a leading role in developing the first of its kind, unified regional promotional campaign. Three core messages formed the basis of the campaign, which started with as a handful of local cities, one county, and some collection companies and has expanded into a statewide effort.

Examining results over the past 20 years shows that Seattle has made tremendous strides in recycling, improving the overall recycling rate from 40.0% to high of 58.8% in 2016. More recent trends in the last

decade show Seattle keeping waste generation steady despite explosive population growth, while making small, incremental gains in the overall recycling rate, from 53.7% in 2010 to 54.4% in 2019.

Next Steps

Although we continue to work to divert more waste and improve the overall recycling rate, the utility is shifting its focus "upstream" on preventing waste. In the forthcoming *2020 Plan Amendment*, SPU will discuss shifting upstream to examine the whole lifecycle of materials and how we can prevent or reduce waste from the start. Looking at the whole lifecycle of materials allows SPU to consider the wider impacts that materials have on the environment and human health.

Though Seattle faces challenges in reducing and preventing waste will be challenged with the on-set of the COVID-19 pandemic and resulting social and structural changes, SPU will continue to lead on matters of solid waste management. SPU will keep offering culturally-relevant, inclusive recycling programs and improving its reporting capabilities, while increasing focus on minimizing waste at the source and pursuing legislation that reduces the environmental impacts of materials—in Seattle and beyond. We will seek out opportunity among the obstacles as we adapt our programs to best serve our customers under unprecedented circumstances.

INTRODUCTION

Seattle's Recycling Rate Goals

The Seattle City Council Zero Waste Resolution 30990 (ZWR) of 2007 provides direction on waste reduction programs and solid waste facilities and established new recycling goals for the City. The ZWR set a recycling goal of 60% of Municipal Solid Waste (MSW) by the year 2012, and 70% by 2025. The recycling rate is a weight-based metric that measures the percentage of generated waste diverted from the landfill by recycling, composting, and some reuse.

In February 2013, the City Council established even more ambitious recycling goals by adopting "Picking Up the Pace Toward Zero Waste," Seattle's *Solid Waste Plan 2011 Revision* (*2011 Plan*). Based on City Council's direction to set aspirational goals, the *2011 Plan* revised the overall recycling rate goal to 60% by 2015 and 70% by 2022. The *2011 Plan* also set customer sector-specific recycling rate goals.

Seattle developed the 2015 and 2022 recycling rate goals based on economic forecasting showing that the City could reach its goals if SPU successfully implemented all 116 proposed programs and initiatives in the *2011 Plan*. However, SPU has not implemented at least 18 of the proposed programs due to considerations ranging from high cost to equity, and not all the implemented programs performed as forecasted. SPU will revisit these recycling rate goals in the forthcoming *2020 Plan Amendment*.

Moving Upstream

The *2020 Plan Amendment* provides a timely opportunity to reassess the City's recycling rate goals, especially considering SPU's increasing emphasis on waste prevention to minimize waste as far upstream in the lifecycle of a given material as possible. The weight-based recycling rate cannot measure waste prevention (also called source reduction). Waste prevention is the most environmentally preferred strategy for managing waste, according to the waste management hierarchy established by the Environmental Protection Agency (EPA) and adopted in the Revised Code of Washington.

EPA's Waste Management Hierarchy

Like the EPA and the Department of Ecology, Seattle has increasingly prioritized waste prevention and reuse as the key strategy to reduce the impacts of materials on the environment and human health. To better align our resources with our practices and overarching goal of eliminating most wastes, SPU requires new metrics and targets to measure waste prevention. The *2020 Plan Amendment* will identify new metrics and targets aligned with waste prevention, as well as recalibrate recycling rate goals based on new analyses.

Annual Waste Prevention & Recycling Report

Consistent with sharpening its focus upstream to prevent waste at the source, SPU renamed the annual recycling report beginning in 2018. The annual recycling report, now known as the *Waste Prevention & Recycling Report*, presents key historical tonnage trends; showcases the accomplishments of Seattle's waste prevention, EPR, product stewardship, and recycling customer programs; details sector-specific

tonnage results through 2019; and, provides a preview of new and continuing initiatives planned for 2020.

The Solid Waste Advisory Committee's (SWAC) comments on the annual report appear in a letter in Appendix I. The ZWR requires SPU report annually to the City Council by July 1 on the previous year's progress toward the City's recycling goals, as well as further steps to take to meet the goals in current and upcoming years. However, due to the COVID-19 pandemic, which hit the nation in early 2020, the deadline for the 2019 report was extended to October 1, 2020.

As background for the 2019 results, the next section, Measuring Seattle's MSW, describes how SPU calculates the weight-based recycling rate and introduces some of the challenges with recycling reporting. In addition, this section describes some of the key factors that impact waste generation rates in the City.

MEASURING SEATTLE'S MSW

Defining MSW

This report addresses two types of waste: Municipal Solid Waste (MSW) and Construction and Demolition Debris (C&D). MSW includes garbage, recyclables, and food/yard waste or compostables discarded from four ratepayer sectors: single-family residential, multifamily residential, commercial, and self-haul to Seattle's two transfer stations. C&D includes materials from construction and demolition activities that are taken to private facilities that process discards such as wood, asphalt, and concrete.

Seattle tracks the weight of discarded materials to determine the recycling rate, which is calculated by dividing the tons of MSW that are reused, recycled, and composted by the tons of MSW that are generated overall. Seattle counts MSW that is recycled, composted, or reused as recycling. But the City does not count all the material that is diverted from landfill as recycling, such as car tires, which are often used as fuel for powering industrial boilers. In general, if materials have historically not been landfilled or are not recycled or converted into another product for use, Seattle does not count it toward the recycling rate. SPU also does not include C&D in its calculation of the overall city recycling rate. For a more discussion of materials excluded from the recycling rate, see Appendix A.

MSW and C&D Data Sources

SPU receives tonnage reports from the City's contracted collection haulers and recycling or composting processors for the following customer sectors and waste streams: Single-family MSW, multifamily MSW, commercial garbage, and contracted commercial recycling and composting. Seattle tracks self-haul MSW at its North and South Transfer Stations. SPU requires monthly reporting of disposal data from C&D disposal facilities.

Data on "open market" or non-contracted commercial recycling and composting, as well as on C&D recycling tonnages, can be difficult to obtain and analyze. Per state law, businesses and non-profits have multiple options for collection of their recycling and composting. They have the choice of using the haulers with which the City contracts for commercial collection, or they can hire any hauler on the open market. SPU does not have direct access to recycling and composting data for businesses using open market services. Instead, the utility relies on annual reporting of open market commercial recycling and composting and C&D recycling data from recycling collectors and processors to estimate the commercial and C&D recycling rates each year.

Challenges to Commercial and C&D Recycling Reporting

Using self-reported open market commercial recycling/composting data to estimate the annual commercial recycling rate presents several challenges. Underreporting is one of the most problematic of these. In 2019, as in 2018, SPU experienced underreporting of commercial open market recycling. As a result, the City estimated the respective open market portions of the commercial recycling tonnages for 2018 and 2019 based on a multivariate econometric regression analysis. For additional details on the challenges of calculating the commercial recycling rate, see Commercial MSW.

The City requires annual recycling reporting of open market commercial recycling and C&D recycling, but SPU has not encountered the same challenges with underreporting of C&D recycling as it has with open market commercial recycling. That is likely the case because of relatively robust reporting requirements

for C&D disposal facilities and recyclers. These reporting requirements are described in more detail in Construction & Demolition Debris (C&D).

Other challenges with both open market commercial recycling and C&D recycling reporting include obtaining complete and accurate reporting from recycling companies, avoiding double counting of materials that are sold between recycling companies, and interpreting reporting material allocations correctly. While Seattle tries to ensure complete reporting, prevent double counting of commercial and C&D recycling tonnages, and ensure materials are correctly assigned to the appropriate sector, there is always the possibility adjustments will need to be made to better reflect the recycling rate for each sector. When new data are brought to the City's attention, SPU may update previously reported information and rates. The City constantly strives to improve the quality of the data it reports, but totals and rates reported are estimates based on the understanding of the data available.

Seattle's solid waste (i.e., garbage, recyclables, and compost) collection systems are complex, and SPU is continually improving the processes used to collect and analyze data and calculate the recycling rates overall and for each ratepayer sector. This includes working closely with local recycling and reuse service providers to help them better track their own recycling and reuse amounts, and in the future, enforcing the annual recycling reporting requirement.

The next section contains the first detailed results in the *2019 Report*, highlighting historical trends over time.

KEY HISTORICAL TRENDS

20 Years of Advancing Recycling

In the past 20 years, Seattle has made impressive advances in recycling, improving the overall recycling rate from 40.0% to 54.4%, using strategies ranging from regulations to contracting to customer outreach and education programs. Most of the gains in the recycling rate occurred between 2000 and 2010. During this period, the recycling rate increased by 11 percent. Gains in the recycling rate in the decade from 2010 through 2019 occurred mostly at the margins, reaching a high of 58.8% in 2016, when the North Transfer Station was closed for rebuilding, and trending downward since. In 2019, the overall recycling rate registered 54.4%. Several factors likely contributed to fluctuations in recycling in the past decade, particularly population growth and increased consumption and economic activity.

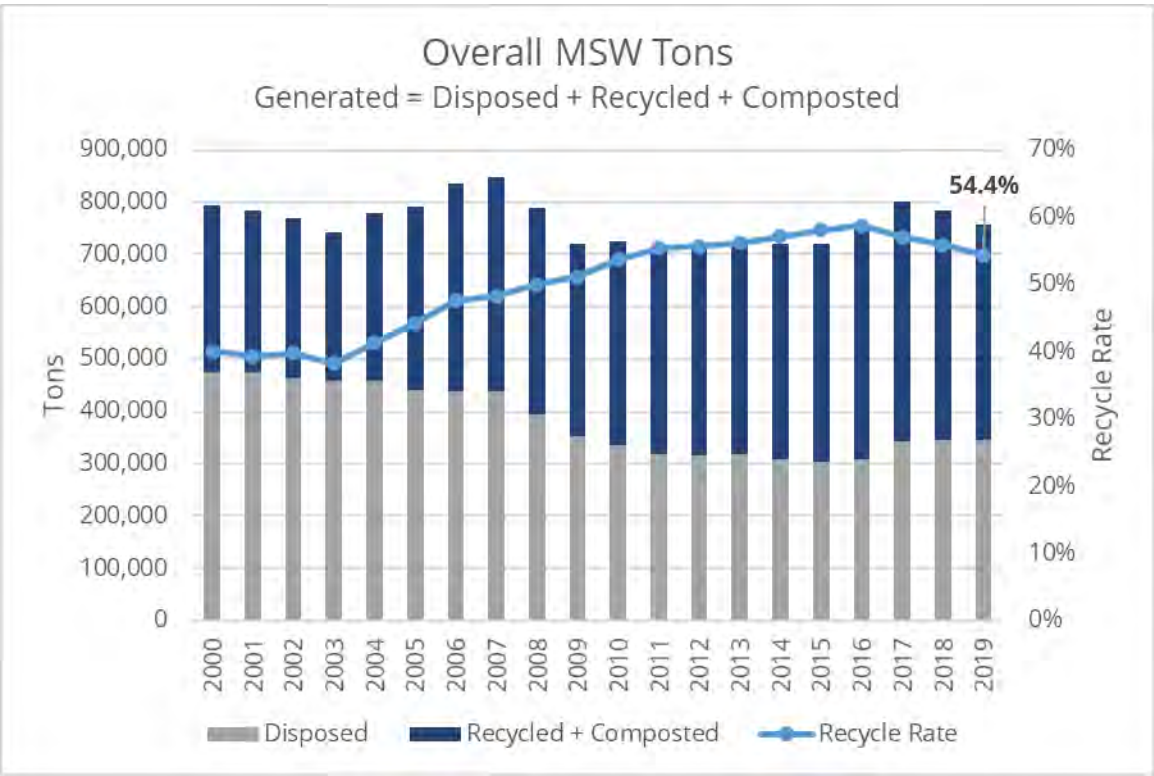

Figure 1. Overall MSW Tons, 2000-2019

Keeping Waste Generation in Check

Factors that significantly influence waste generation include population growth and increased economic activity. Seattle experienced both in the past decade, growing at a staggering rate. During the so-called "Amazon Boom" of the past 10 years, Seattle grew by 23%, or 139,000 residents. This growth represents an increase from about 609,000 to 747,000 people. This represents more newcomers to the city than in

the previous 30 years combined.[3] At the end of 2019, Seattle ranked as the fastest-growing major city of the 2010s.[4]

Despite substantial population growth and new economic activity, which would ordinarily spur waste generation, Seattle residents kept waste at relatively stable levels. Holding the line on waste generated and keeping recycling rates relatively stable marks a noteworthy achievement given the flood of newcomers to the area. This accomplishment is particularly notable given that most growth has occurred in the multifamily sector (apartments and condominiums), which tends to have more barriers to recycling than single-family residences.

Figure 2 below compares Seattle's combined single-family and multifamily residential population growth to the amount of waste generated, recycled, and disposed of in the last decade, from 2010 through 2019, showing relative stability despite a massive influx of new residents. In 2019, waste generation was down slightly, driven mainly by reductions in recycling tonnage. The residential recycling rate registered 62%.

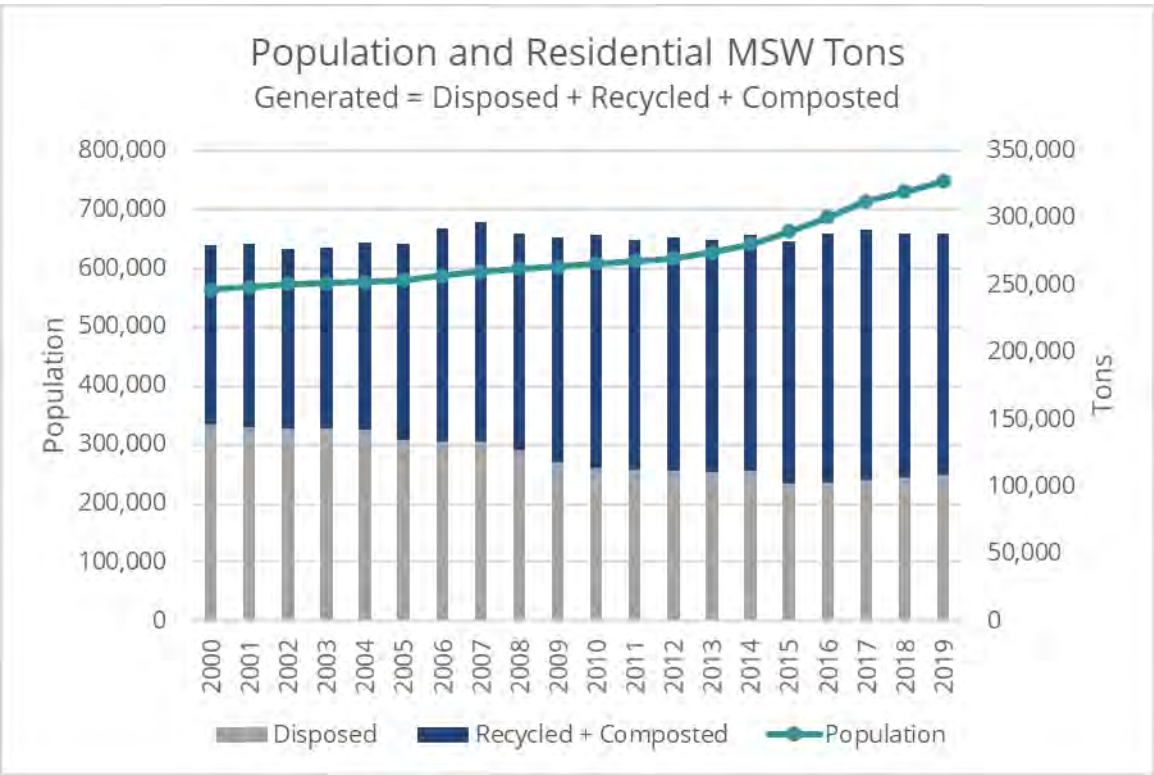

Figure 2. Population and Residential MSW Tons, 2000-2019
Source of population data: Washington State Office of Financial Management

Holding the line on overall generation despite massive growth led to declining per person waste generation. Daily residential per person or per capita pounds of waste generated started to decline in

[3] FYI Guy, Gene Balk. "The decade in demographics: Top 5 changes in the Seattle area." Seattle Times, The: Web Edition Articles (WA), sec. Data, 30 Dec. 2019. NewsBank: Access World News, infoweb.newsbank.com/apps/news/document-view?p=AWNB&docref=news/1782E243E14E17B0.
Accessed 7 July 2020.
[4] Ibid.

2008 and reached a milestone in 2019—its lowest point yet—2.1 pounds per person. Daily per capita pounds of waste recycled or composted also continued downward, which started in 2010, to 1.31. Daily waste disposed has been under one pound per day since 2012.

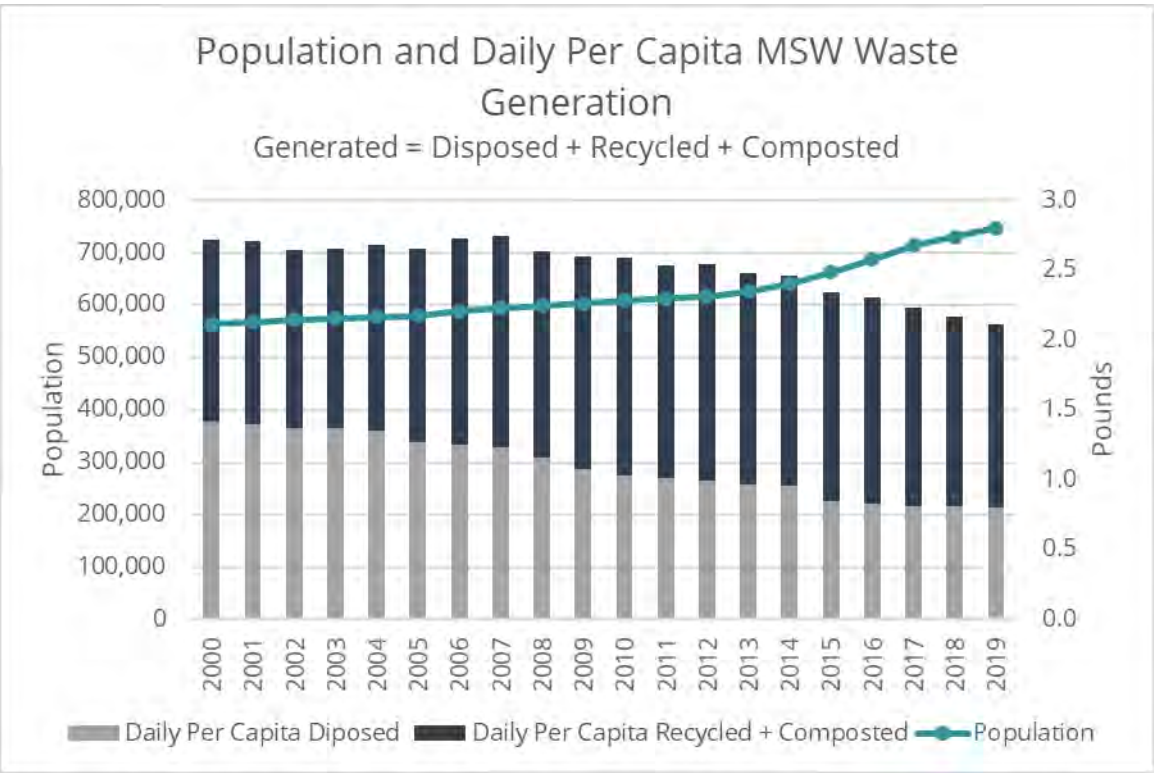

Figure 3. Population and Daily Per Capita Residential MSW Tons, 2000-2019
Source of population data: Washington State Office of Financial Management

The following section, Waste Prevention, describe the efforts that SPU undertook in 2019 to work with Seattle residents and communities to protect the environment by first decreasing the overall amount of waste generated.

Service equity at the core of customer programs

SPU recognizes that eliminating racial, social, and cultural barriers is vital to ensuring that Seattle customers can take advantage of Seattle's programs and services. To help foster equity and inclusion, SPU offers education and outreach materials that are not only translated into several languages, but also "transcreated" so that they are culturally relevant to each member of our diverse community. A community-centered utility, SPU also partners with local organizations to engage residents and businesses on waste prevention, waste reduction, and recycling in our customers' preferred language. By working together, we can make progress on Seattle's waste prevention and recycling goals.

WASTE PREVENTION

This section details 2019 highlights from SPU's waste prevention programs which are designed to reduce wastes from households and businesses, minimize toxics used to manufacture products and packaging, and prevent climate and other environmental and health impacts associated with producing and transporting materials.

Measuring waste prevention outcomes is difficult because such outcomes require tracking materials that were never generated or were generated but did not enter the MSW stream that SPU manages. SPU attempts to gauge the performance of the waste prevention programs by making estimates based on available data or by looking at proxy measurements, such as pounds of waste generated per person per day. The forthcoming *2020 Plan Amendment* will propose that the City examine options to measure waste prevention activities.

Halve Food Waste by 2030

In 2019, SPU secured four signatories to the West Coast Voluntary Agreement to Reduce Wasted Food, as part of the Pacific Coast Collaborative (PCC), a public-private partnership to reduce wasted food by 50% by 2030:

- Albertsons Companies (Includes Albertsons, Safeway, and 18 other brands)
- PCC Community Markets
- New Seasons Market
- The Kroger Co. (includes Food 4 Less, Fred Meyer, QFC, and 13 other brands)

By signing onto this agreement, these retailers committed to establish baseline levels of waste, taking action to cut waste, and to measuring progress. In return, they will receive targeted, regional technical assistance that will drive down costs, improve their environmental metrics, and likely foster social benefits connecting to food security.

Love Food, Stop Waste

SPU's Love Food Stop Waste Program provides information and tools to help residents save money and protect the environment by wasting less food. Key strategies include providing information about meal planning, meal preparation, fresh and frozen food storage, understanding date labels, using food before it spoils, and sharing food with family and friends. In 2019, the utility and its partners engaged more than 1,600 residents through 27 education events that included presentations, classes, and tabling at community events and farmer's markets. This included providing culturally and linguistically relevant engagement to African American and immigrant and refugee communities and translating and transcreating materials into 11 languages. The transcreation process includes in-language interviews and surveys by staff to assess and develop ideal images and words to convey culturally-appropriate messages to the intended audience.

Transcreation is a culturally-relevant translation conducted with the help of audience research.

Food Rescue Innovation Convenings and Research Lab

SPU and Mary's Place, a local non-profit helping Seattle's food insecure residents, hosted the second *Food Rescue Innovation Lab* with approximately 60 diverse stakeholders to assess barriers and constraints to food rescue transportation operations and explore opportunities to work together to get rescued food to those that need it most.

Feedback from Food Rescue Innovation Lab participants sparked a research project with the University of Washington's Supply Chain Transportation and Logistics Center (UW SCTL). The goal of this project is to identify solutions that could increase the effectiveness and efficiency of food rescue transportation operations, thereby rescuing more food and wasting less. The results of the UW SCTL's research will be published in 2020.

Master Composter Sustainability Stewards

Volunteers with SPU's Master Composter Sustainability Steward program provided over 976 hours of outreach time at events and classes, and engaged 8,305 residents, answering questions, and encouraging behavior change toward waste prevention practices.

Master Composter Sustainability Steward program volunteers help residents build worm bins, recycle food and yard waste, build healthy urban soils, and support thriving landscapes

The Garden Hotline

Managed by SPU and staffed through a contract with the community-based organization Tilth Alliance, the Garden Hotline responds to calls and emails from residents about yard care and landscaping, as well as

teaches classes and holds events. The Garden Hotline assisted 8,345 residents in 2019, providing a valuable community resource for addressing common yard care problems with environmentally safe solutions.

Additional education on sustainable yard and landscape practices was provided through 217 community events and classes, with 72% of those held in diverse communities. Outreach also included videos, which garnered about 2,100 views. Sustainable yard and landscape practices save money, conserve resources, reduce waste, and reduce use, family risk, and pollution from landscape chemicals.

Sustainable Landscaping Training

SPU held 23 Sustainable Landscaping trainings attended by 1,785 landscape professionals. Three of the trainings were conducted in Spanish. The utility's Sustainable Landscaping Professional Development program uses training, web resources in multiple languages, and collaboration with landscape design, construction, and maintenance professional organizations to create landscapes that produce less solid and hazardous waste, reuse organic wastes onsite, conserve water, reduce runoff and pollution, and enhance public health.

Waste-Free Communities Matching Grant

SPU's Waste-Free Communities Matching Grant Program funds community-initiated and -led waste prevention and reuse projects. In 2019, SPU supported 16 projects including nine from the 2018-19 grant cycle and seven from the 2019-20 grant cycle.

2019 grant project outcomes included:

- Educating and engaging more than 4,900 people on waste prevention topics, including repair, reuse, textile upcycling, reducing single-use plastics, residential food waste prevention, and reducing diaper use
- Repairing, upcycling, and reusing 1,230 items
- Preventing the use of 5,276 single-use plastic bottles, 4,645 single-use dishes and utensils, and 4,750 pieces of paper
- Reclaiming 31,891 pounds of lumber through single-family home deconstruction
- Providing employment opportunities for 12 adults and 19 youth
- Helping people save money through buying less, repair, and reuse
- Increasing equitable access to waste prevention opportunities and benefits for African American and immigrant and refugee communities

EXTENDED PRODUCER RESPONSIBILITY AND PRODUCT STEWARDSHIP

Extended Producer Responsibility (EPR) and Product Stewardship strategies often include elements of waste prevention, reuse, and recycling. Extended producer responsibility is a legislated approach, requiring producers to take responsibility for financing the collection and processing of their products after their usable life. Product stewardship, which may take the form of either a legislated or voluntary approach, engages producers of packaging and products to reduce waste and toxicity of their products through improvements in design and labeling.

EPR Highlights

Latex and Oil-Based Paint

SPU joined with other local governments, non-governmental organizations, and industry to introduce and support passage of HB 1652 Concerning Paint Stewardship. The law establishes a statewide Product Stewardship system for latex and oil-based paint by the end of 2020. This program will greatly expand the number of locations that will accept unwanted paint from residents and paint contractors in Seattle at no cost. Currently, SPU directs customers to dry latex paint, mixing it with cat litter if necessary, and disposing in the garbage, or recycling it at select retailers in the Take It Back Network for a fee.

Solar Photovoltaic Modules Take-Back

In 2017, SPU and Seattle City Light worked for passage of the nation's first producer responsibility law for photovoltaic modules. In 2019, the utility helped develop a proposal to expand the legislation to cover modules in large "solar farms," which were inadvertently excluded from the 2017 law. The program will ensure that residents and businesses will have a manufacturer financed take-back system for the safe and efficient recycling of modules produced after July 2017.

E-Cycle Washington Electronics Take-Back

SPU continued promotion of manufacturer financed take-back, recycling, and reuse programs. The E-Cycle WA program collected approximately 1,422 tons of televisions, computers, laptops, and monitors within Seattle at over 30 locations. Tons collected continue to decrease because flat screen TVs are replacing the much heavier cathode ray tube TVs. Additional tons were salvaged by E-cycle collectors for refurbishment, resale, and reuse.

LightRecycle Washington Mercury Lighting Take-Back

The LightRecycle Washington program collected approximately 132,727 mercury-containing fluorescent tubes, compact fluorescent lamps, and other mercury-containing bulbs and ballasts, totaling about 31 tons, from Seattle residents and businesses locations. As moderate risk waste, mercury lighting is not included in this Report's calculations of the recycling rate.

King County Secure Medicine Return

SPU continued promoting the manufacturer-financed King County Secure Medicine Return, which provides secure options for returning unused, unwanted, or expired medications. Secure medicine return helps prevent medications from polluting our waterways, as well as accidental poisonings and

drug abuse. In 2019, Seattleites returned 15,508 pounds (7.8 tons) of unused or unwanted pharmaceuticals to 39 King County Secure Medicine Return locations in Seattle.

Product Stewardship Highlights

Compostable Products Labeling Bill

SPU worked with the Washington Organic Recycling Council, Cedar Grove Compost, and other stakeholders to develop and pass a bill to help residents, businesses, and facilities distinguish compostable products from non-compostable products. Products sold in Washington as of July 1, 2020 can no longer be labeled with confusing or misleading terms such as “degradable” or “oxo-degradable.” Compostable products must be labeled, certified, and use other means to distinguish from non-compostable products, such as green or brown tinting or coloration.

Plastic Packaging Study Bill

SPU worked with the Northwest Product Stewardship Council to develop legislation to establish producer responsibility for all plastic packaging in Washington. The proposal, which was approved in the 2019 legislative session, sets a goal that all plastic packaging is 100% recyclable, reusable, or compostable and contain 20% post-consumer recycled content by 2025.

A study pursuant to the bill will assess amounts and types of plastic packaging entering the state, current management practices and costs, where it ends up at its end of life, estimated future infrastructure needs, a review of national and international efforts to manage plastic packaging and proposals for meeting the goals. The Department of Ecology will complete the study by the end of 2020.

The following section, Recycling and Composting, details sector-specific tonnage results and recycling rates for single-family, multifamily, commercial, and self-haul customers, as well as the C&D recycling rate. It also describes highlights from SPU’s sector-specific programs to work with Seattle residents and businesses to protect the environment by making sure that recyclable and compostable items are diverted for repurposing instead of being sent to the landfill.

RECYCLING AND COMPOSTING

After waste prevention and reuse, the next best option for dealing with discards is to recycle or compost them. Recycling and composting preserves natural resources, reduces greenhouse gas emissions, and saves money. Effective recycling and composting programs incorporate many strategies, such education, market development, collection, processing, policy, and enforcement. This section discusses 2019 MSW tonnage results and highlights accomplishments of the recycling outreach and education customer programs by sector.

Single-family Residential MSW

The single-family residential sector includes households that use cart service as opposed to dumpster service. The majority of Seattle's 167,000+ households are free standing dwellings, but the single-family designation also includes duplex, triplex, and four-plex properties.

For the past two decades, Seattle single-family residents proved their commitment to diversion, consistently recycling and composting more than they dispose. This trend continued in 2019, even as single-family generation declined somewhat, driven primarily by reductions in recycling. The single-family recycling rate dropped slightly from 72.5% in 2018 to 72%.

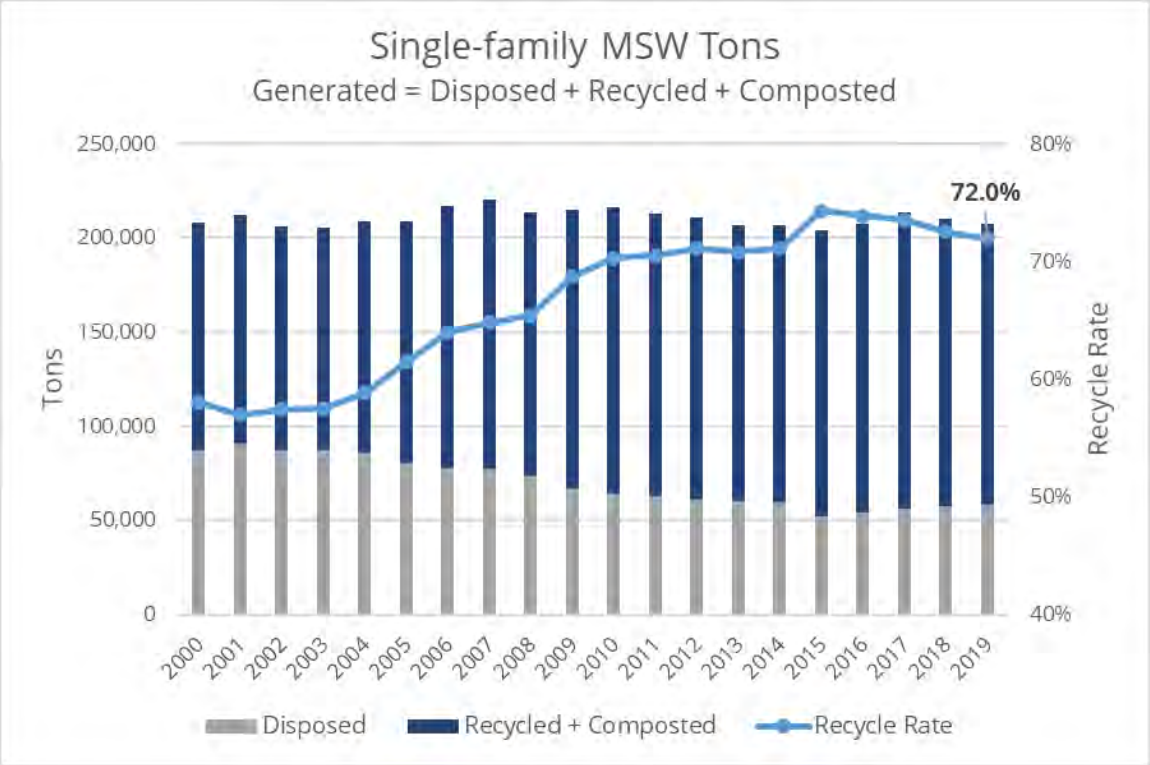

Figure 4. Single-family MSW Tons, 2000-2019

Residential Highlights

This section highlights residential customer outreach and education programs and campaigns, which reach single-family and multifamily customers.

SPU staff discusses what goes where with a resident at a supermarket tabling event.

Community Outreach and Education

Outreach for single-family and multifamily residents focuses on meeting people in communities and providing materials directly to their homes. Being in communities allowed for deeper connections and easier access to the latest information for customers.

In 2019, SPU reached over 9,000 residents at 25 community events and festivals, farmers markets, and local grocery stores. Trained volunteers provided hands-on additional education and trainings to customers on waste sorting, waste prevention, and home composting through smaller local projects.

Beyond the Cart Services

Seattle in April 2019 launched new curbside services, increasing the types of items customers can have picked up for recycling and safe disposal, and expanded neighborhood reuse/recycling collection events. The following sections detail the service enhancements for residential customers under the new collection contracts.

Special Item Pick Up

Customers can now schedule curbside pickup for recycling of household batteries, CFLs, an expanded list of electronics, small appliances, and foam block.

Compost Giveaways

Six events provided over 300 cubic yards of locally-processed compost to over 565 households, completing the loop from compost cart to garden. Done in partnership with Tilth Alliance, Lenz Enterprises, Cedar Grove, City Light, Seattle Public Schools, Nurturing Roots Farm, YES Farm, and South Seattle College, these events provided compost for gardens from Licton Springs, Beacon Hill, West Seattle, Yesler Terrace to Rainier Beach.

Recycling and Reuse Events

SPU partnered with its collection contractors to host six community collection events to provide customers with convenient options to drop off harder to recycle items and reusable materials. The reuse events collected appliances, reusable household goods, batteries, electronics, and polystyrene foam from over 600 households. SPU piloted the collection of compressed gas camp canisters at two of the events, filling two 55-gallon barrels with empty cannisters.

Recycle Right Campaign

In January 2019, SPU launched the Recycle Right campaign as part of a regional effort to create consistent messages about what goes in the recycling cart. The ultimate outcome for SPU and the region is to have cleaner recycling, improve the quality, recoverability, and value of recycled materials.

The campaign contained three core messages:

1. "Empty, clean and dry" all recyclables.
2. Focus on the top five (5) types of higher-value recyclables: paper, cardboard, plastic bottles/tubs/jugs, metal, and glass bottles and jars.
3. When in doubt, find out! – Look up confusing items using Seattle's "Where Does it Go?" tool.

"Recycle Right" ads appeared on 20 major bus routes throughout Seattle during winter 2019.

The campaign kicked off with 44 transit ads on 20 major bus routes throughout Seattle. Messages were woven into all new printed materials, including the 2019 Collection Calendar and printings of the *Where Does It Go* flyer, and were disseminated via social media platforms like YouTube, Facebook, and Twitter. The campaign was featured heavily in the fall issue of the *Curb Waste & Conserve* newsletter, which went to all 365,000+ households in Seattle.

King County, the City of Bellevue, Sound Cities Association, Recology, Waste Management, and Republic Services collaborate on the regional Recycle Right effort and made the communications collateral, such as text for posts on social media, available to anyone.

Multifamily Residential MSW

The multifamily residential sector includes apartment and condominium buildings. These types of dwellings normally use dumpsters for garbage and generally have five or more housing units. Materials collected include garbage, recyclables, and compostables.

Multifamily housing presents unique challenges to recycling and composting not present in the single-family sector. Such barriers to recycling and composting include inconveniently located or poorly accessible collection containers, lack of common area space for centralized indoor containers, and insufficient living area space for sorting of recycling and food waste inside apartments.

Despite these obstacles and the continuing trend of newcomers moving into multifamily housing, waste generation in the multifamily sector changed relatively little from 2018, increasing only 2.6%. This achievement occurred despite an influx of an estimated 15,500 new multi-family residents, representing about 90% of all newcomers.[5] The 2019 multifamily recycling rate (36.2%) was consistent with last year's rate (36.4%).

[5] Washington State Office of Financial Management. *POP_HU_PERM_2019* (Custom request). Olympia, WA: Washington State Office of Financial Management, 2020. Excel. 10 July 2020.

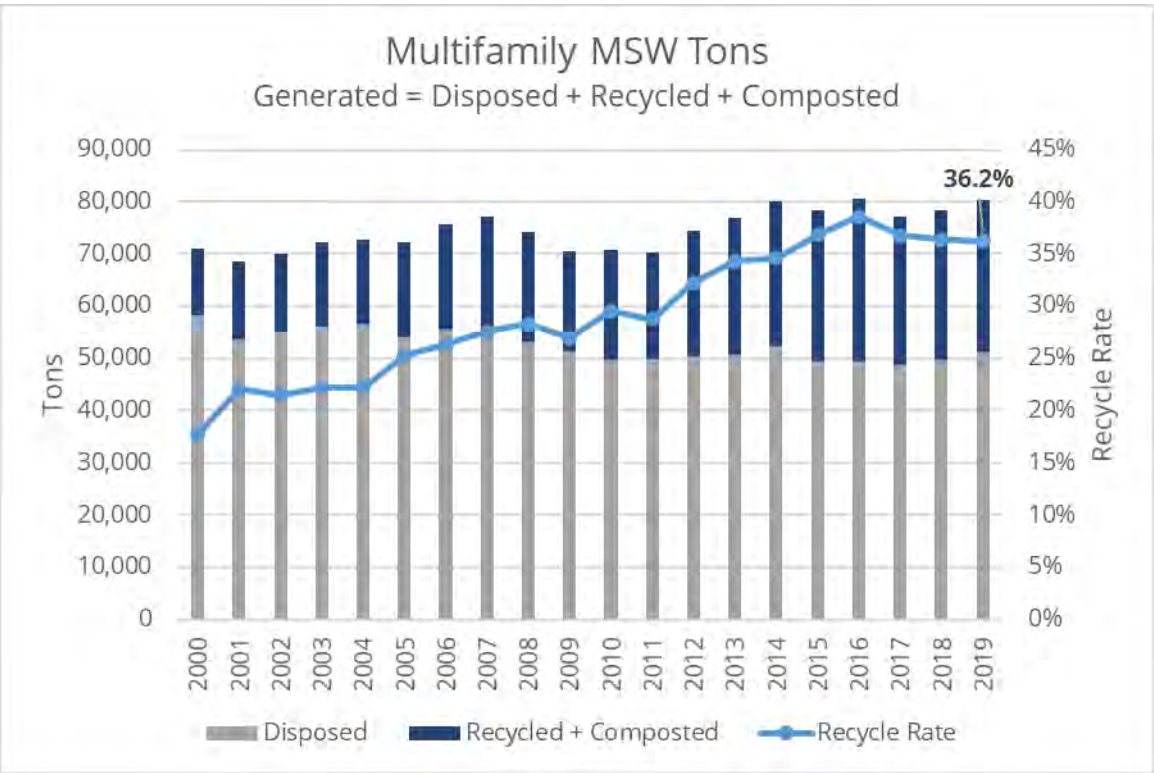

Figure 5. Multifamily MSW Tons, 2000-2019

Multifamily Highlights

Tailored On-site Support for Property Management Staff

SPU staff and contractors provide on-site assistance to property managers to set up solid waste systems so residents can conveniently recycle and compost. Every spring, the utility sends all 7,500+ multifamily accounts a direct mailing describing available resources.

In 2019, over 33,000 multi-family residents benefited from on-site assistance. This support often involves relocating and upgrading containers and reviewing and optimizing the solid waste capacity needed for each collection area. SPU also responded to 850 recycling education messages and calls and provided thousands of materials and tools.

Inclusive and Culturally Relevant Resident Outreach

Every fall, SPU mails recycling and composting guidelines to all 184,000 multifamily households, ensuring they are provided the same information as single-family households.

The Utility's multifamily outreach team provided education materials in a variety of languages and conducted trainings at 108 apartment buildings or community sites, where 3,436 residents received training. Close to 700 residents were trained in a language other than English.

Multilingual educators conducting multifamily outreach.

SPU staff table at an annual event for property managers.

Strategies and Tools for Success

SPU develops and pilot tests new strategies to help the multifamily sector divert recyclables and compostables from the garbage. In 2019, SPU developed a solid waste calculator that the education and compliance teams use to optimize solid waste capacity and costs. This calculator helps customers determine appropriate solid waste collection service levels, given the size of their building, and encourages customers to reduce costs by recycling and composting effectively. By "right-sizing" their services, properties can reduce solid waste bills. Last year, a single property saved more than $1,000 per month on its solid waste bill after right-sizing services and taking advantage of the SPU education training and tools.

In 2019, SPU also delivered more than 10,000 free kitchen food scrap containers to multifamily households and supported 458 buildings with recycling and composting information and signage.

New Building Permit Review

Convenient access to disposal of recyclables, compost, and garbage have been proven to increase diversion from multifamily buildings. SPU partners with architects, developers, and the Seattle Department of Construction and Inspection to review and approve building designs during the permitting phase of proposed multifamily residential buildings. By doing so, SPU helps ensure appropriate recycling, composting, and garbage storage levels for buildings, access for residents, and safe collection conditions for collection haulers are integrated into the building's design.

Commercial MSW

The Commercial sector includes garbage, recyclables, and compostables collected from businesses. Seattle prohibits significant amounts of recyclables and compostables in the garbage and encourages all businesses to offer collection of all three waste streams.

While Seattle provides garbage service through franchise collection contracts, businesses can contract independently for the collection of their recyclables and compostable materials. So, while the City has direct access to commercial disposal data because it manages all of Seattle's garbage services, it relies on commercial recycling (including composting) collectors and processors to self-report the materials they recycle and compost. Consequently, the commercial recycling rate is only as accurate as the data reported to the City, which can vary in quality and quantity from year to year.

The City requires commercial collectors and processors based in Seattle to report on recycling annually. However, some commercial collectors or processors do not submit an annual report.[6] Obtaining

[6] Reasons that recycling collectors and processors may not report in a given year include, but are not limited to: the business closed, the business merged with another business or changed its name, the business moved, the business reporting contact changed, or the business is unaware of the annual recycling reporting requirement.

collector and processor open market recycling data for 2019 was challenging because the original reporting deadline of March 31, 2020 coincided with the onset of the COVID-19 pandemic.

Although the City extended the reporting deadline to accommodate COVID-19 impacts on businesses, contractors, and non-governmental entities that recycle or compost material in Seattle, at least four recyclers that reported in the past informed the City they were unable to report for 2019 and another 10 recyclers were not reachable via email, mail, or phone.[7]

Due to underreporting of commercial open market recycling for the second straight year, SPU estimated the open market portions of commercial recycling for 2018 and 2019 based on a multivariate econometric regression analysis.[8] Based on the estimate for 2019, commercial MSW generation decreased from 2018 levels by nearly 29,000 tons, or 7.5%. The recycling rate declined two percentage points to 62.1%.

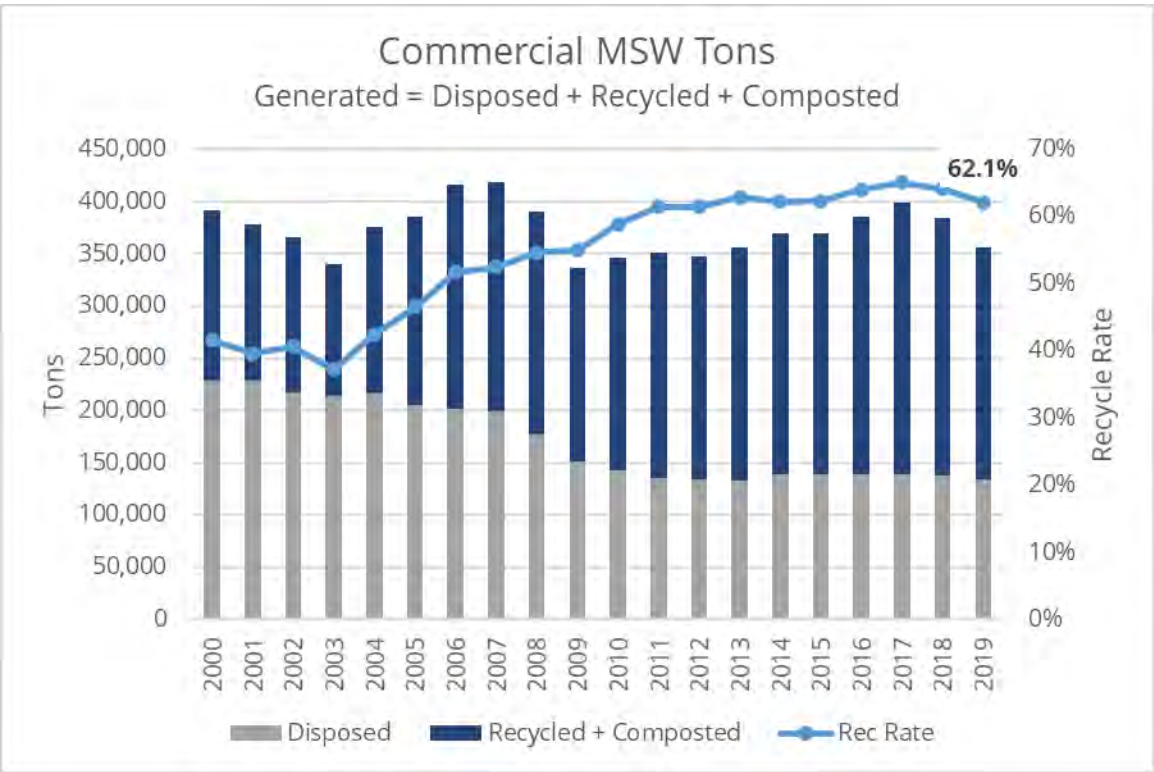

Figure 6. Commercial MSW Tons, 2000-2019

Commercial Highlights

Outreach, Education, and Technical Assistance

SPU provided recycling education and outreach to businesses across Seattle, engaging with over 800 business owners and their staff during site visits to provide technical assistance. SPU offers technical assistance that ranges from reviewing business operations to training onsite staff (over 25 waste

[7] The annual reporting period for the previous year starts January 1 and ends March 31 of the following year. For 2019 reporting, SPU extended the reporting deadline from March 31, 2020 to June 30, 2020.

[8] The commercial recycling figures for 2019 may be revised in the future, depending on available data.

trainings were conducted in 2019, including in-language trainings in Spanish, Cantonese, Korean, Vietnamese, and ASL), and connecting businesses with service providers.

Business outreach and education also involved inspecting for compliance with requirements including the ban on single-use plastic utensils and straws, the plastic bag ban, the ban on foam food packaging, and mandates to use compostable or recyclable single use packaging and to provide collection of their recyclable and compostable materials.

Other commercial sector highlights included:

SPU consultant provides technical assistance to a business customer.

- Participating in over 10 tradeshows, business community gatherings, and industry events to offer resources and share ideas, resulting in over 200 interactions with businesses.
- Welcoming over 70 new Seattle businesses to the statewide EnviroStars green business recognition program in 2019. Benefits of joining EnviroStars include saving money, protecting the planet, attracting new customers, being a green leader, being more efficient, and getting recognized as a green business in the Green Business Directory.
- Developing a tracking protocol to document progress of 34 fast food or quick-serve restaurants companies, representing 247 locations, to full compliance of requirements related to use of food packaging, service ware, and collection of recyclables and compostables at these restaurants.
- Providing in-language assistance to 190 immigrant and refugee-owned food service businesses.
- Transcreating several commercial outreach materials into Spanish.

Self-haul MSW

The self-haul sector includes material delivered, or "self-hauled", by residents, businesses, non-profits, and governmental agencies to the City's two transfer stations. Recyclables must be separated from the garbage prior to arrival at the station. Both stations accept standard recyclables as well as vehicle tires, residential appliances, scrap metals, household sharps, used motor oil and used oil filters, car batteries, bicycles, and alkaline batteries. The Recycling and Reuse Building at the North Transfer Station also accepts certain items in good condition for reuse.

Self-haul MSW tonnages include several types of waste that impact the self-haul rate negatively and could potentially fall under MSW tonnage counts for other customer sectors. For example, SPU accounts for most C&D debris received at the City's transfer stations as self-haul garbage rather than as C&D for disposal. Garbage from the City's homeless encampments is also captured under self-haul.

Additionally, Seattle's self-haul recycling rate includes only the garbage--and not the recycling and composting—from several large self-haul customers. Because these materials are delivered to different

destinations, they end up being accounted for in different sectors. For example, customers like the Seattle Housing Authority, the University of Washington, and the Seattle School District take their garbage to the City's transfer stations, where it is counted as self-haul MSW. But because these self-haulers bring their recycling and composting directly to the recycling and composting processors, that material is counted as part of the commercial sector recycling tonnages.

Self-haul recycling improved in 2019 to 11.1%. Self-haul generation increased slightly, spurred by increased recycling at the transfer stations. Self-haul tonnage flowing through the City's transfer stations peaked in 2007 at about 133,000 tons. From 2007 to 2014, tonnage declined due to the Great Recession and the closure of each of the transfer stations for rebuilding. With the economy thriving once again and the opening of the rebuilt transfer stations (South in 2013 and North in 2016), tonnage has been increasing since hitting a low point in 2014.

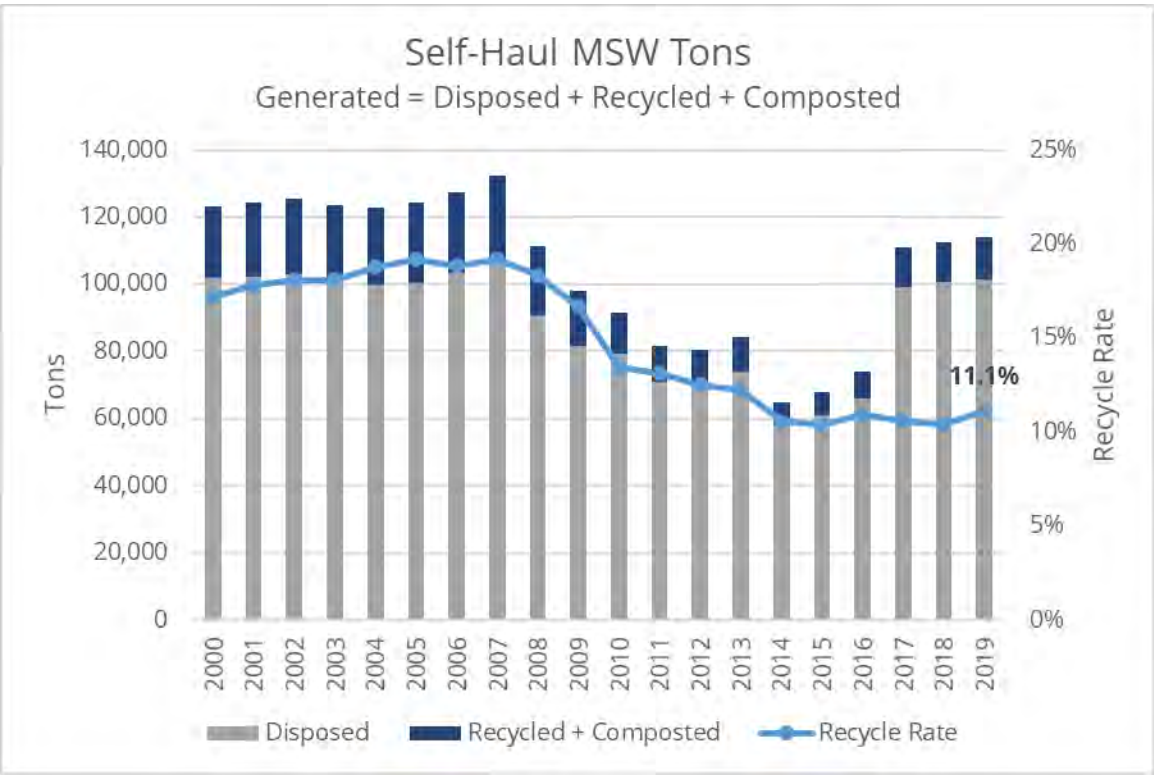

Figure 7. Self-haul MSW Tons, 2000-2019

Self-haul Highlights

Homelessness Response

Seattle continued responding to the needs of homeless individuals living outdoors. In 2019, the City collected over 2,100 tons of garbage, responding to solid waste issues related to those living unsheltered, including SPU's Encampment Trash Program, which served 59 unauthorized homeless encampments.

Construction & Demolition Debris (C&D)

The Construction and Demolition (C&D) sector is comprised of materials generated from construction and demolition activities. C&D materials are either self-hauled by contractors or hauled by a third-party drop box service or the City's contracted C&D waste hauler to private recycling facilities for sorting or to private transfer stations for disposal. Alternatively, intermodal containers are used at C&D jobsites to collect material for hauling directly to the railheads for transport to a landfill.

Definitions of C&D materials

- **Beneficial use**: Material not recycled or reused, but used for some other purpose, such as unpainted and untreated wood used as hog fuel for a pulp and paper mill.
- **Disposed**: Material permanently placed in a landfill, which includes Alternative Daily Cover (ADC) or materials used to cover the active face of a landfill as an alternative to using dirt or soil to cover landfill garbage or material used as fill, such as at a reclamation pit.
- **Recycled:** Material separated for recycling.
- **Reuse**: Materials from the demolition or construction process that have or can be salvaged or reused on the same or other construction projects.

To estimate the C&D waste generated in Seattle each year, SPU draws from several sources. Disposal data are submitted monthly to SPU by private facilities and intermodal transfer yards. Similar to commercial recycling data, recycling and beneficial use data come from annual recycling reports submitted to the City each spring for the prior year as a requirement of recycling license for companies operating in the City and voluntarily for companies operating processing facilities outside of the City. Beyond the key companies and recycling license holders, SPU also identifies recycling haulers and facilities through *Waste Diversion Reports*, which are submitted at the end of C&D projects reporting types, destinations, and haulers for materials generated on projects.

C&D generation generally correlates closely with economic and building activity cycles and has increased significantly over the last decade as Seattle's population has exploded. In the population boom of the past 10 years, the C&D recycling rate has shot up from 61.9% in 2010 to 68.4% in 2019.

In 2019, total C&D tonnage generated increased by approximately 33,000 tons from 2018, with recycling up about 19,000 tons or roughly 6% and beneficial use up about 14,500 tons or approximately 42%. Disposed C&D debris decreased about 900 tons. These changes slightly decreased the recycling rate to 68.4%. In addition to the recycling rate, Seattle calculates a diversion rate for C&D, which is based on the sum of recycling, reuse, and beneficial use divided by overall generation. The diversion rate reached 78.2% in 2019.

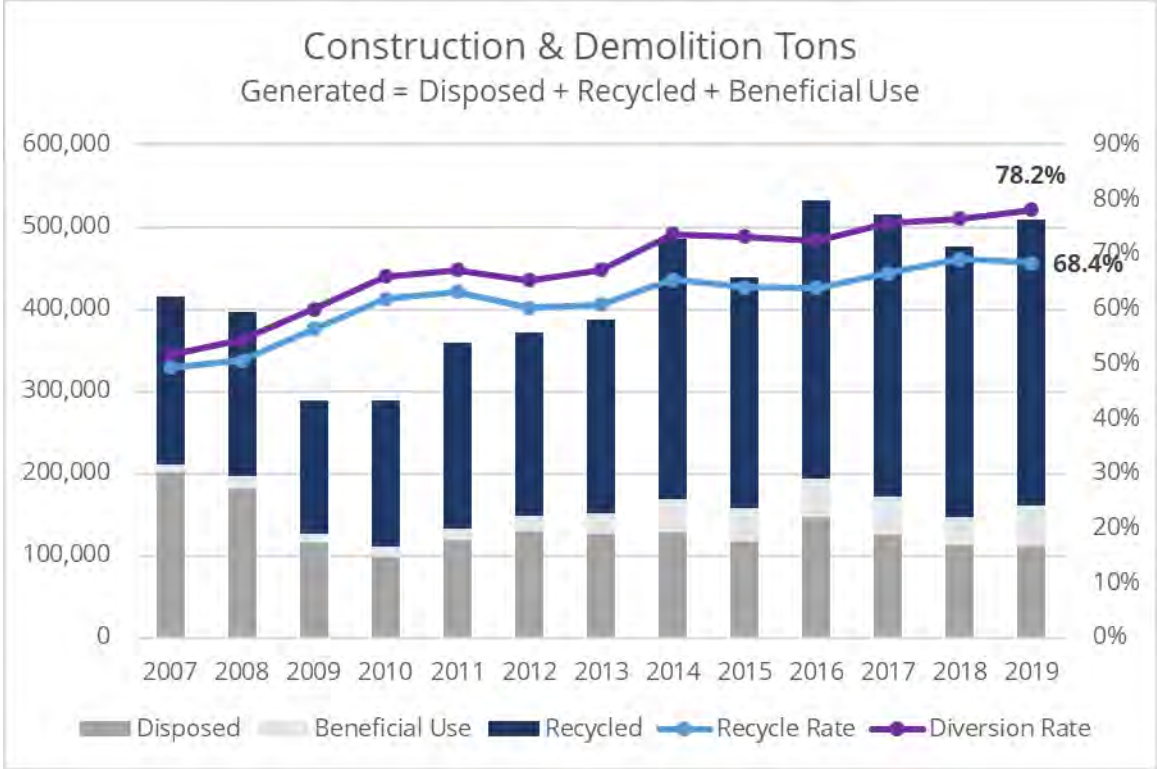

Figure 8. Construction and Demolition Tons, 2007-2019

Construction & Demolition Debris Highlights

Facility Certification Program

Seattle's facility certification program ensures participating facilities comply with disposal bans of key recoverable C&D materials. In 2019, eight mixed C&D recycling facilities in the region participated in the City's C&D facility certification and King County's "designated" facility programs, which include monthly reporting and quarterly residual sampling for compliance with material disposal bans. Seattle continues to post the quarterly and annual recycling rates for participating facilities on the SPU website.

Sampling processing residuals at a mixed C&D recycling facility to confirm recovery of materials banned from disposal.

Salvage Assessment and Monitoring

SPU continued to receive salvage assessments prior to building demolition and significant remodeling projects to identify salvage and reuse opportunities. Completing these reports builds awareness among building owners and construction professionals about opportunities to save money and divert materials through salvage. When a contractor engages a local salvage retailer to complete this assessment, this process connects contractors with salvage retailers who can resell the reusable items. While this form currently is submitted to Seattle Department of Construction & Inspections, SPU

is working on an online entry form that will allow for better tracking and follow-up with permit holders to monitor salvaged quantities and increase follow-through on the assessments and reuse of building materials.

CONCLUSION

This table summarizes recycling rates relative to the sector-specific goals established in the *2011 Plan*. Seattle created these recycling rate goals based on the assumption that SPU would implement all 116 proposed programs in the *2011 Plan* and that those programs would perform as forecasted in the economic modelling.

Recycling Rate Comparison			
Customer Sector	**Rates at *2011 Plan* Adoption (2013)**	**Current Rates (2019)**	**Recycling Rate Targets by 2022**
Citywide (overall)	56.2%	54.4%	70%
Single-family	70.8%	72.0%	83%
Multifamily	34.3%	36.2%	54%
Commercial	56.2%	62.1%	75%
Self-haul	12.2%	11.1%	46%
			Recycling Rate Target by 2020
Construction & demolition	62.9%	68.4%	70%

Unprecedented growth and economic expansion over the last decade demonstrate some of the challenges of making significant improvements to the recycling rate goals. More importantly, the results of the past 10 years show how the City kept waste generation from skyrocketing despite the growth, reduced the residential per person daily waste generation rate to its lowest point yet in 2019, and led the industry in recycling, EPR, and product stewardship.

SPU continues to innovate and evolve its approach to solid waste and is revisiting the suitability of the recycling rate for measuring the success of its programs and the feasibility of the sector-specific recycling rate targets in the forthcoming *2020 Plan Amendment.* While recycling remains an important waste management approach, SPU is increasingly emphasizing waste prevention. The *2020 Plan Amendment* will propose additional metrics and targets to better evaluate the impact of source reduction programs.

More information

- See Seattle's Solid Waste Management Plan for more background on waste prevention and recycling planning underway.
- For more detailed sector and historical information, visit Solid Waste Reports for tonnage, transfer station usage, and recyclables market data reports.

NEXT STEPS: 2020 AND BEYOND

The following section describes what the City had planned, pre-COVID-19, to prevent more waste and improve recycling, while improving tonnage reporting and innovating our waste management. Many of these initiatives and activities are being reimagined or redesigned as we adapt to a new reality and focus on finding opportunity despite the obstacles posed by the global COVID-19 pandemic.

New Initiatives

Waste Prevention

- Begin work to develop a *Waste Prevention Strategic Plan* that includes metrics and targets that measure waste prevention.
- Partner with King County and the local Deconstruction Advisory Group to investigate ways to incorporate salvage and deconstruction into green building incentive programs as a precursor to requiring salvage and deconstruction.
- Complete the *2020 Plan Amendment*, which discusses Seattle's shift toward increased emphasis on waste prevention and explores different options to measure the progress of the City's solid waste programs and set achievable recycling rate goals.

Recycling and Composting

- Finalize transcreation of recycle, compost, and garbage residential and commercial guidelines into Vietnamese.
- Update the municipal code to require that new apartment buildings provide access to recycling and composting for residents on every floor.
- Conduct an audit of commercial and C&D recycling processors and collectors to improve response rate for annual recycling self-reporting requirement.
- Complete design of and launch online commercial and C&D annual recycling reporting application to streamline annual commercial and C&D reporting requirement.
- Consider apportioning self-haul MSW delivered to the transfer stations by residents and businesses to the residential and commercial sectors, respectively, to reflect self-haul tonnages more accurately.
- Evaluate re-starting wood recycling at the transfer stations.
- Update the Director's Rule regarding the disposal ban delay for plastic film, carpet, and asphalt shingles until at least 2022, due to lack of markets for these materials.

Solid Waste Operations

- Update *Continuity of Operations Plans* for all solid waste functions to ensure uninterrupted services during an emergency or natural disaster.

The next section reviews ongoing activities supported by SPU first for waste prevention and Product Stewardship followed by recycling by ratepayer sector.

Ongoing Activities

The following describes the customer outreach and education activities SPU typically offers under normal circumstances. Many of these efforts are being adapted or delayed due to the COVID-19 pandemic.

Waste Prevention

- Expand and deepen the Pacific Coast Collaborative Food Waste Reduction Project by recruiting new retail partners, establishing food waste measurement methods, and compiling baseline food waste data from participating retailers.
- Educate residents and businesses on the benefits of waste prevention, repair, reuse, buying used, and "conscious consumption," such as reducing the costs of material goods for residents and businesses.
- Use culturally-relevant engagement strategies and transcreated tools to increase awareness of costs and impacts of wasting food and help residents and businesses waste less food.
- Foster longer-term solutions for food rescue operations, such as improving real time communication systems, more efficient transportation and logistics, and stronger relationships between commercial food donors, food banks and meal program providers.
- Educate diverse residents and landscape professionals on gardening practices that re-use landscape wastes on and off-site as compost and mulch, reduce use of pesticides and fertilizers, and build soil health for better plant growth, reduced stormwater runoff and pollution, and climate resiliency.
- Fund community waste prevention and reuse efforts through matching grants that encourage innovation and increase equitable access to waste prevention opportunities and benefits.
- Support the creation of jobs and job skills training aligned with waste prevention through community grants and advocating for waste prevention and reuse oriented businesses.
- Leverage resources from community and agency partnerships for projects focused on expanding waste prevention infrastructure and education in Seattle.

EPR and Product Stewardship

- Support legislation that promotes waste prevention approaches, Product Stewardship, and sustainable packaging alternatives, including EPR.
- Advocate for Product Stewardship programs that provide more accessible and convenient services across the City.

Recycling and Composting

All Customers

- Provide residents and businesses with transcreated information, technical assistance, and in-person trainings in different languages to increase participation in recycling and composting programs.
- Provide sorting and disposal guidelines through a variety of mediums, including direct mailings, online tools, social media, community outreach, and a targeted recycling campaign.
- Continue to monitor domestic and international markets for recyclables and work to secure sustainable markets for recyclables.

- Work with King County, Department of Ecology, other jurisdictions, and stakeholders to further develop local and domestic recycling markets to mitigate market impacts and disruptions caused by China's Operation Blue Sky, i.e. implementation of China's ban on imported mixed paper and mixed plastics.
- Focus outreach on increasing diversion of organics from the landfill by composting more yard waste, food waste, and compostable paper and packaging.
- Maintain the *Disaster Debris Management Plan* to shorten the recovery phase following a debris-producing disaster.
- Leverage solid waste data to focus educational and outreach resources.

Multifamily Sector

- Reach more multifamily residents with on-site educational information in several languages, increasing cultural competency.
- Continue to develop and improve easy-to-us tools to help educate multifamily property owners and managers on how to lower garbage collection costs by recycling and composting more.
- Use solid waste metrics to track baseline multifamily building information to target outreach efforts and to assess building performance.
- Assist multifamily property owners and managers on where to place recycling and composting containers to improve residents' access and improve participation.
- Continue to work with architects, designers, and planning agencies to ensure multifamily buildings are designed to include easy to use and accessible recycling and composting systems, including prioritizing review of proposed low-income multifamily housing to help ensure equitable access to composting and recycling for historically marginalized communities.

Commercial

- Reach more business owners and their employees with educational information provided in several languages, increasing the cultural relevance of recycling, composting, and waste prevention at work.
- Educate business owners on how to lower garbage collection costs by recycling, composting, switching to compostable packaging, and engaging in additional waste prevention activities.
- Partner with business community leaders from Seattle's Chamber of Commerce, the Restaurant Alliance, and special event organizations to further understanding of requirements and awareness of resources to help businesses to recycle and compost more.
- Continue partnerships with recycling and composting collection service providers to collaborate in commercial outreach, site visits, and training sessions in the commercial sector.
- Work with planning agencies, architects, and builders to provide easy to use and accessible recycling and composting systems that are integrated into building design.
- Provide effective and engaging enforcement of municipal codes to promote the use of recycling and composting systems and services.

Self-haul

- Focus more effort on self-haul customer education before they get to the stations.
- Increase promotion of reuse donation opportunities at the North Transfer Station's Recycling and Reuse Building.
- Improve signage at transfer stations to streamline station trips and better serve customers.

- Expand service equity work to reach more businesses that self-haul to Seattle's transfer stations and provide educational materials that have been transcreated and translated into several languages.

Construction & Demolition Debris

- Educate transfer station visitors about opportunities to recycle C&D waste at local private facilities.
- Work with King County to support markets for salvaged lumber, including incorporating in new construction, and the establishment of a salvaged lumber warehouse.
- Support the inclusion of salvage and deconstruction requirements in Seattle's Priority Green program and non-city local green building programs to build awareness and capacity for increased requirements for salvage and deconstruction.

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APPENDIX A: MATERIALS EXCLUDED FROM RECYCLING RATE CALCULATIONS

If materials have historically not been landfilled or are not recycled or converted into another product for use, Seattle does not count it towards its recycling rate. For example, recycling from automobile wrecking is excluded from Seattle's recycling rate calculations because it never enters Seattle's MSW or C&D systems.

Other items that are diverted from the landfill, such as car tires, are also excluded from the recycling rate calculations, as most used car tires are not recycled or reused but used as fuel. Seattle also excludes "beneficial use" materials from its calculation of the recycling rate.

C&D materials are not considered MSW and are not included in Seattle's calculation of the City's overall recycling rate. C&D materials have a separate recycling goal of 70% by 2020, as mandated by the City Council.

The MSW recycling rate excludes special wastes, such as Moderate Risk Waste (MRW), which includes Household Hazardous Wastes (HHW) like garden pesticides, and Small Quantity Generator Waste (SQGW) like solvents used at small businesses. The Hazardous Waste Management Program (HWMP) manages Seattle's MRW. The HWMP is a joint program supported and implemented by Seattle, King County, Public Health - Seattle and King County, and the Sound Cities Association.

Seattle Municipal Code prohibits disposal of HHW and SQGW in the garbage. However, some HHW and MRW is reusable or recyclable. Reused or recycled HHW and MRW wastes would typically be included in calculating Seattle's recycling rate, but collection data are not available for the amounts of materials that are reused or recycled by Seattle residents, as data for HHW and MRW are tracked only on a regional level.

In addition, the recycling goal does not include other special categories of waste such as: biomedical wastes, biosolids, asbestos, petroleum contaminated soils, scrap yard metals, and dangerous waste (generally industrial), which state regulations exclude from MSW.

APPENDIX B: OVERALL MSW TONS, 2000-2019

Table 1. Overall MSW Tons, 2000-2019

Year	Generated	Disposed	Recycled + Composted	Recycle Rate
2000	793,842	476,132	317,710	40.0%
2001	782,974	475,270	307,704	39.3%
2002	768,462	462,996	305,466	39.8%
2003	741,337	458,011	283,326	38.2%
2004	780,346	458,405	321,941	41.3%
2005	790,456	440,694	349,763	44.2%
2006	836,499	438,381	398,118	47.6%
2007	848,759	439,407	409,353	48.2%
2008	789,688	394,828	394,860	50.0%
2009	719,424	351,689	367,735	51.1%
2010	724,469	335,570	388,898	53.7%
2011	715,996	319,341	396,655	55.4%
2012	713,821	315,983	397,838	55.7%
2013	724,385	317,259	407,126	56.2%
2014	721,269	309,515	411,754	57.1%
2015	720,705	302,467	418,238	58.0%
2016	748,051	308,379	439,672	58.8%
2017	800,380	343,922	456,458	57.0%
2018	785,223	346,322	438,902	55.9%
2019	757,466	345,559	411,907	54.4%

APPENDIX C: SINGLE-FAMILY MSW TONS, 2000-2019

Table 2. Single-family MSW Tons, 2000-2019

Year	Generated	Disposed	Recycled + Composted	Recycle Rate
2000	208,468	87,499	120,969	58.0%
2001	211,982	91,072	120,910	57.0%
2002	206,474	87,834	118,640	57.5%
2003	205,748	87,426	118,322	57.5%
2004	209,132	86,029	123,103	58.9%
2005	208,675	80,478	128,197	61.4%
2006	216,946	78,078	138,868	64.0%
2007	220,128	77,494	142,634	64.8%
2008	213,889	73,961	139,928	65.4%
2009	215,015	67,229	147,786	68.7%
2010	216,484	64,309	152,175	70.3%
2011	212,861	62,779	150,082	70.5%
2012	211,030	60,906	150,124	71.1%
2013	206,603	60,302	146,301	70.8%
2014	206,992	59,772	147,220	71.1%
2015	204,397	52,529	151,868	74.3%
2016	207,804	54,298	153,506	73.9%
2017	213,709	56,541	157,168	73.5%
2018	210,289	57,725	152,564	72.5%
2019	207,538	58,191	149,347	72.0%

APPENDIX D: MULTIFAMILY MSW TONS, 2000-2019

Table 3. Multifamily MSW Tons, 2000-2019

Year	Generated	Disposed	Recycled + Composted	Recycle Rate
2000	70,944	58,333	12,611	17.8%
2001	68,611	53,487	15,124	22.0%
2002	70,144	55,076	15,068	21.5%
2003	72,149	56,106	16,043	22.2%
2004	72,640	56,498	16,142	22.2%
2005	72,325	54,080	18,245	25.2%
2006	75,545	55,643	19,903	26.3%
2007	77,108	55,847	21,261	27.6%
2008	74,223	53,199	21,024	28.3%
2009	70,524	51,497	19,028	27.0%
2010	70,675	49,788	20,887	29.6%
2011	70,145	49,993	20,152	28.7%
2012	74,549	50,514	24,035	32.2%
2013	76,960	50,537	26,423	34.3%
2014	80,189	52,439	27,750	34.6%
2015	78,278	49,443	28,835	36.8%
2016	80,478	49,437	31,041	38.6%
2017	77,150	48,773	28,376	36.8%[9]
2018	78,245	49,760	28,485	36.4%
2019	80,241	51,176	29,065	36.2%

[9] Before 2017, the combined residential (single-family and multifamily) composted tonnage was measured and then attributed to either the single-family or multifamily sector based on estimates. Starting in 2017, composted tonnage data by individual residential sector became available. The adjustment in calculation methodology likely explains the shift in the recycling rate in 2017.

APPENDIX E: RESIDENTIAL PER CAPITA MSW TONS, 2000-2019

Table 4. Residential per Capita MSW Tons, 2000-2019

Year	Tons			Recycle Rate	Population	Per capita Pounds per person per day		
	Generated	Disposed	Recycled + Composted			Generated	Disposed	Recycled + Composted
2000	279,412	145,832	133,580	47.8%	563,286	2.72	1.42	1.30
2001	280,593	144,559	136,034	48.5%	567,491	2.71	1.40	1.31
2002	276,618	142,910	133,708	48.3%	572,854	2.65	1.37	1.28
2003	277,897	143,532	134,365	48.4%	574,530	2.65	1.37	1.28
2004	281,772	142,527	139,245	49.4%	576,906	2.68	1.35	1.32
2005	281,000	134,557	146,442	52.1%	579,779	2.66	1.27	1.38
2006	292,491	133,721	158,770	54.3%	587,755	2.73	1.25	1.48
2007	297,235	133,341	163,895	55.1%	594,339	2.74	1.23	1.51
2008	288,112	127,160	160,952	55.9%	599,055	2.64	1.16	1.47
2009	285,539	118,725	166,814	58.4%	603,155	2.59	1.08	1.52
2010	287,159	114,097	173,062	60.3%	608,660	2.59	1.03	1.56
2011	283,006	112,772	170,234	60.2%	612,100	2.53	1.01	1.52
2012	285,579	111,420	174,159	61.0%	616,500	2.54	0.99	1.55
2013	283,563	110,839	172,724	60.9%	626,600	2.48	0.97	1.51
2014	287,181	112,211	174,970	60.9%	640,500	2.46	0.96	1.50
2015	282,675	101,972	180,703	63.9%	662,400	2.34	0.84	1.49
2016	288,282	103,735	184,547	64.0%	686,800	2.30	0.83	1.47
2017	290,859	105,315	185,544	63.8%	713,700	2.23	0.81	1.42
2018	288,534	107,485	181,049	62.7%	730,400	2.16	0.81	1.36
2019	287,779	109,367	178,412	62.0%	747,300	2.11	0.80	1.31

APPENDIX F: COMMERCIAL MSW TONS, 2000-2019

Table 5. Commercial MSW Tons, 2000-2019

Year	Generated	Disposed	Recycled + Composted	Rec Rate
2000	391,406	228,417	162,989	41.6%
2001	377,927	228,405	149,522	39.6%
2002	366,224	217,195	149,029	40.7%
2003	339,844	213,247	126,597	37.3%
2004	375,739	216,112	159,627	42.5%
2005	385,093	205,637	179,456	46.6%
2006	416,564	201,231	215,333	51.7%
2007	418,979	198,968	220,011	52.5%
2008	390,267	176,774	213,493	54.7%
2009	335,992	151,398	184,593	54.9%
2010	345,692	142,180	203,511	58.9%
2011	351,214	135,536	215,678	61.4%
2012	347,673	134,089	213,584	61.4%
2013	356,480	132,401	224,079	62.9%
2014	369,407	139,457	229,950	62.2%
2015	370,037	139,557	230,480	62.3%
2016	385,846	138,804	247,042	64.0%
2017	398,422	139,317	259,105	65.0%
2018	384,139	138,009	246,130*	64.1%
2019	355,453	134,686	220,767*	62.1%

Note: All results for commercial recycling are estimates
**Commercial recycling figures include results of an econometric regression analysis estimating the open market portion of the commercial recycling*

APPENDIX G: SELF-HAUL MSW TONS, 2000-2019

Table 6. Self-haul MSW Tons, 2000-2019

Year	Generated	Disposed	Recycled + Composted	Recycle Rate
2000	123,024	101,883	21,141	17.2%
2001	124,453	102,305	22,148	17.8%
2002	125,620	102,891	22,729	18.1%
2003	123,597	101,232	22,365	18.1%
2004	122,835	99,766	23,069	18.8%
2005	124,364	100,499	23,865	19.2%
2006	127,444	103,429	24,015	18.8%
2007	132,545	107,098	25,447	19.2%
2008	111,309	90,894	20,415	18.3%
2009	97,893	81,565	16,328	16.7%
2010	91,618	79,293	12,325	13.5%
2011	81,776	71,033	10,743	13.1%
2012	80,568	70,474	10,094	12.5%
2013	84,341	74,019	10,322	12.2%
2014	64,681	57,847	6,834	10.6%
2015	67,993	60,938	7,055	10.4%
2016	73,923	65,840	8,083	10.9%
2017	111,099	99,290	11,808	10.6%
2018	112,550	100,827	11,723	10.4%
2019	114,234	101,506	12,728	11.1%

APPENDIX H: CONSTRUCTION & DEMOLITION (C&D) TONS, 2007-2019

Table 7. Construction & Demolition Tons, 2007-2019

Year	Generated	Disposed*	Recycled**	Beneficial Use	Recycle Rate	Diversion Rate
2007	415,801	201,156	204,907	9,738	49.3%	51.6%
2008	397,052	181,241	200,851	14,961	50.6%	54.4%
2009	288,551	115,446	162,742	10,362	56.4%	60.0%
2010	288,957	98,309	178,794	11,854	61.9%	66.0%
2011	359,390	118,216	227,049	14,125	63.2%	67.1%
2012	371,962	129,383	224,060	18,519	60.2%	65.2%
2013	386,200	127,040	234,982	24,178	60.8%	67.1%
2014	485,242	128,024	317,331	39,887	65.4%	73.6%
2015	437,883	117,343	280,205	40,336	64.0%	73.2%
2016	532,126	146,139	339,478	46,509	63.8%	72.5%
2017	514,858	125,074	342,755	47,029	66.6%	75.7%
2018	475,496	111,963	328,568	34,965	69.1%	76.5%
2019	508,623	111,105	348,032	49,486	68.4%	78.2%

** C&D disposal tons from Qualified Facilities Monthly Reports*
***C&D recycled tons from Annual Recycling Processor and Collector Reports*
Note: All results for C&D recycling are estimates

APPENDIX I: COMMENTS FROM THE SOLID WASTE ADVISORY COMMITTEE

September 30, 2020

Councilmember Alex Pedersen
Chair, Transportation and Utilities
PO Box 34025
Seattle, WA 98124-4025

Dear Councilmember Pedersen and Committee Members,

In September 2020, the Seattle Public Utilities (SPU) Solid Waste Advisory Committee (SWAC) members had the opportunity to review SPU's Draft of the 2019 Annual Waste Prevention and Recycling Rate Report. SPU continues to work towards its goal of 70% landfill diversion by 2022, though the report mentions that the upcoming *2020 Amendment Plan* provides an opportunity to reassess this goal. SWAC recommends that the recycling rate goal is reassessed and encourages SPU to continue upstream efforts on waste prevention.

In 2019, the City achieved a 54.4% diversion rate, which is a 1.4% decrease from 2018. While City waste generation rates remain steady despite substantial population growth, the overall recycling rate has been on a downward trend since 2016, and the 2019 recycling rate is 15.6% short of the 2022 goal. Efforts to divert waste from landfills is important to mitigate negative environmental and social impacts, and we advise that SPU focus on high impact sectors and programs to improve recycling rates. In addition, there should be emphasis on programs and policies that prevent waste in the first place to prioritize beneficial environmental and social justice outcomes.

To effectively improve the recycling rate and waste prevention, SWAC recommends that SPU focus efforts on the three sectors below:

<u>Self-haul</u>
Given that recycling rates at self-haul facilities (11.1% for 2019) are the lowest of any sector and furthest from the overall 2022 goal and its sector-specific goal, we recommend evaluation of further opportunities to recover materials for recycling or reuse at the transfer stations.

<u>Multifamily Recycling</u>
Multifamily recycling rates (36.2% in 2019) have lagged behind single family recycling rates for many years. We affirm SPU's efforts in 2019 to engage multifamily building owners and managers in making recycling accessible to all residents in an inclusive and culturally relevant manner. Further, we affirm SPU's review of building code requirements for recycling infrastructure to be designed into new buildings.

Construction & Demolition (C&D)
SPU calculates the C&D sector in a separate recycling rate which has a 70% diversion rate goal by 2020, and in 2019 the C&D recycling rate was 68.4%. We encourage SPU to continue sustained and concentrated efforts in this sector as C&D activities continue at historically high levels for the City. While bans of heavy materials such as concrete have helped raise the recycling rate for C&D, SWAC recommends further opportunities to increase diversion: 1) Strengthen the current salvage assessment requirement for demolitions to incentivize actual salvage for reuse, and 2) Add a requirement for deconstruction (or minimum recovery for reuse) where high recovery potential is identified.

Additionally, we support and encourage SPU to continue the following policies and programs**:**

Embedding racial and social diversity, equity, and inclusion across SPU programming and services continues to remain one of SWAC's highest priorities. SWAC fully supports SPU's (internal and external) efforts that are made to embody a "community-centered utility." SWAC particularly promotes initiatives that seek leadership and insight from community members of underrepresented communities, as well as the transcreation of culturally relevant materials to provide an accessible foundation of knowledge for all residents of Seattle. SWAC further supports the prioritization of recycling and composting educational materials, programming, and infrastructure that are available and affordable to low-income multifamily housing, local businesses, and historically marginalized communities. As SPU continues to support initiatives that align waste prevention and workforce development (creation of jobs and job skills training), SWAC highly recommends the continued integration of RSJ and investment in community-led solutions.

SWAC affirms recent efforts by SPU to engage producers to take greater responsibility for the costs and logistics of reuse, recycling and/or disposal of their products, including their role in state legislation around paint, photovoltaic modules, electronics and mercury lighting. We encourage SPU to continue to co-author and support EPR legislation, especially in the areas of packaging and plastics. Equitable access to programs and enforcement of producer requirements should be provided for new programs.

In the realm of waste prevention, SWAC also supports the continued efforts SPU has committed to education and community-based programs. The community collection events and efforts to re-educate residents on the benefits of "conscious consumption", upcycling, and how to repair items as an alternative to disposal, have aided in the critical efforts to focus on upstream solutions. SWAC additionally supports the unabridged advocacy SPU has provided to community-led waste prevention efforts through the Waste Free Communities Grant. This

program has helped its diverse pool of recipients develop, expand, and continue their initiatives that bring unique solutions and benefits to their respective communities and partners. SWAC highly recommends the continued efforts dedicated to its recipients this year and for years following, to help projects persevere through challenges that have arisen due to COVID-19.

SWAC appreciates the significant strides SPU has taken to increase waste prevention and diversion of organics, including food waste and landscape materials. The Pacific Coast Collaborative efforts with food retailers, Love Food, Stop Waste efforts with residents and Food Rescue Innovation Lab efforts with multiple stakeholders have expanded potential prevention and recovery of food waste. Meanwhile, Sustainable Landscape training, Master Composter Sustainability Steward program, and the Garden Hotline have supported increased reuse of organic wastes, conservation of water and reduced toxics pollution. We encourage this work to continue.

Thank you for considering our comments and we look forward to providing additional feedback upon your request.

Sincerely,

Dirk Wassink, co-Chair SWAC

Nico Onoda-McGuire, co-Chair SWAC

Alessandra Pistoia, Secretary SWAC

SWAC is one of Seattle Public Utilities' Community Advisory Committees. Its members are appointed by the SPU CEO/General Manager. It is administered and staffed by SPU. This letter reflects the opinions of Committee Members, independent of SPU.

Cc: Lorena Gonzalez, President, Seattle City Council
Sego Jackson, Solid Waste Policy Liaison
Stephanie Schwenger, Solid & Hazardous Waste Lead Planner
Katie Lynd, SWAC Coordinator and Solid Waste Community Affairs Strategic Advisor