2018 Waste Prevention & Recycling Report

Seattle Public Utilities

July 1, 2019

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EXECUTIVE SUMMARY

Seattle City Council Resolution 30990 requires SPU to report annually to the City Council by July 1st on the previous year's progress toward recycling goals, as well as further steps to meet goals in the current and upcoming years. The 2018 City of Seattle Waste Prevention & Recycling Report describes how the City's recycling rate is calculated, provides sector-specific recycling rates for 2018, highlights factors impacting the various recycling rates, and provides additional background on Seattle's waste prevention, reuse, and recycling programs. The four sectors that contribute to the Municipal Solid Waste (MSW) recycling rate include: Single-family Residential, Multifamily Residential, Commercial, and Self-haul. Materials generated in the Construction & Demolition (C&D) sector are tracked and reported separately. A separate C&D recycling rate also is calculated.

Waste prevention is Seattle's top priority in reducing the amount of waste sent to landfills. Seattle's residents continue to make the shift away from generating more waste to increased waste prevention, showing their commitment through the decrease in the residential per capita waste generation rate, which has dropped to an all-time low of 2.16 pounds per person per day in 2018. The continued commitment of Seattle's residents to reducing generation and doing their part to prevent waste is something to celebrate!

Seattle's commitment to waste prevention aligns with the state priorities of waste prevention first, followed by reuse, and then recycling. The Department of Ecology announced in May 2019 that they are changing their key metrics from tracking the state-wide recycling rate to tracking the overall waste generation to encourage waste prevention. At the Washington State Solid Waste Advisory Committee, Ecology stated that: "*Focusing on the recycling rate is not helping reach waste reduction goals. While recycling has many environmental benefits and remains a key part of any waste management strategy, waste reduction, or not producing waste in the first place, is far more impactful.*"

Seattle's recycling rate is weight-based and calculated by determining the percentage of Municipal Solid Waste (MSW) diverted from the landfill through reuse, recycling, and composting. The 2018 estimated recycling rate is 56.5%, with Seattle recycling 450,500 tons of material, which is 5,958 less recycled tons when compared to 2017. Although Seattle recycled less tons in 2018, the City's MSW recycling rate only decreased by half of a percentage point from the adjusted 2017 recycling rate. While the 2018 estimated recycling rate dropped slightly, Seattle still managed to generate 3,558 less total tons of MSW in 2018, as compared to 2017. This is good news when considered in the context of the continued population growth and strong economic activity. Seattle's population has grown by over 121,000 new residents since 2010.

The reasons for the slight decrease in Seattle's 2018 recycling rate are not definitively clear. We know that an adjustment in how Seattle calculates the amount of organic materials diverted from residential households through on-site or backyard composting resulted in a downward recalculation of the tonnage attributed to Single-family Residential recycling contributed to the overall reduction. We also speculate that a combination of the following factors may have contributed to the decrease, but Seattle will need to do additional research over the coming year to verify:

- Light-weighting of recyclables may have resulted in the overall weight of recyclables to decrease though the volume of materials being diverted remained the same or increased.
- Improved messaging throughout 2018 on how to properly recycle may have increased disposal tonnage as a result of residents correctly disposing of non-recyclable items in the trash – following the mantra of "*When in doubt, throw it out*."
- Media coverage of China's restrictions on accepting mixed waste paper and mixed plastics and the landfilling of these materials by some jurisdictions may have impacted customers' perception of recycling and depressed Seattle's recycling participation levels.

The good news is that the impacts of China's restrictions on recyclable materials and the fluctuating markets had minimal impact on Seattle's 2018 recycling rate. Seattle, unlike other municipalities, was able to adapt quickly to the impacts of fluctuating markets and none of our recyclable materials were landfilled. Unfortunately, other jurisdictions around the country, including some in Washington State, have had to landfill recyclables. Seattle was also uniquely positioned to improve the quality and marketability of collected recyclables by adapting its communications strategies and implementing an innovative educational campaign that improved messaging on what is and isn't actually recyclable. Finally, some of these impacts were offset by growth in the recovery of organics, specifically food waste in the commercial sector.

2018 HIGHLIGHTS

While there have been many challenges presented in 2018, there continues to be news to celebrate:

- Seattle's 2018 recycling rate dropped less than half a percentage point from 2017 despite the drastic changes in recyclable material markets and customer perceptions of what is recyclable.
- The overall waste generation rate, which includes garbage, recycling, and composting, dropped by 0.4% over the previous year, even though population continues to increase, housing continues to shift away from single-family to multifamily, and economic activity remains strong.
- The residential per capita waste generation rate (i.e., pounds of waste per person per day generated) is at an all-time low of 2.16 pounds.
- The residential per capita disposal (i.e., materials going to landfill) has maintained at the all-time low of 0.81 pounds per person per day.
- The benefits of waste prevention and product stewardship programs continue to be realized.
- Disposal is not increasing at a rate that would be expected with Seattle's continued population growth and economic activity, with disposal only increasing by 2,400 tons, a 0.7% increase.
- The impacts of China Blue Skies and fluctuating international recycling markets were minimized by Seattle's ability to respond quickly, resulting in none of Seattle's recyclable materials collected for recycling needing to be landfilled and all of the materials being recycled.
- Seattle retail food businesses and food manufacturing businesses diverted 18,000 tons of food wastes to animal feed and donated over 3,500 tons of safe, nutritious, and edible food to local agencies addressing food insecurity in Seattle.

NEXT STEPS

Seattle continues to step up to the challenges presented, serving as a nationwide leader in the solid waste industry to encourage innovation and change, and customers are doing their part to reduce the waste they generate every day. However, Seattle has much more to do to achieve its recycling goals and continue its progress toward preventing waste. Some of the next steps include:

- Working with regional partners to target contamination and improve the quality of recyclables.
- Working with State and Industry leaders to expand and improve domestic markets for recyclables.
- Expanding outreach and educational efforts regarding how to properly recycle and compost through direct mailings, online tools, community outreach, and targeted recycling campaigns.
- Working closely with property owners and managers to increase accessibility to recycling and composting in both multifamily and commercial buildings.
- Expanding programs for food rescue of safe, nutritious, and edible food.
- Assisting in the development of programs that divert inedible food waste to businesses that recycle it into animal feed or transform it into energy through anaerobic digestion and other conversion technologies.
- Coordinating recycling and composting messaging to ensure customers across all sectors receive consistent messages that are culturally relevant regarding responsible recycling, waste prevention, and composting at home, work, school, and out in the community.

INTRODUCTION

The 2018 City of Seattle Waste Prevention & Recycling Report describes how the City's recycling rate is calculated and provides overviews of Seattle's waste prevention, reuse, and recycling programs.

This Report also provides information on factors that impact the amount of waste generated, recycled, composted, and disposed of for each of the four primary Municipal Solid Waste (MSW) sectors: Single-family Residential, Multifamily Residential, Commercial, and Self-haul.

This Report highlights Seattle's waste prevention and product stewardship efforts, progress in achieving its city-wide recycling goal of 70%, and includes the progress on achieving individual recycling goals for each sector of Seattle's MSW stream. Also included is information on future activities for each sector that will help Seattle reach the sector-specific recycling goals and the overarching city-wide recycling goal, and highlights of Seattle's waste prevention, product stewardship, and social equity work, which play a critical part in any future success.

This Report concludes with Seattle's progress on reaching the recycling goal for Construction and Demolition (C&D) materials.

SCOPE OF THE REPORT

Background on the Reycling Rate (pg. 5)
This section includes background on how the City's weight-based recycling rate is calculated, definitions, and factors that impact waste generation, recycling, and disposal rates in the City, including the impacts of population and economic growth.

This section also provides information on the City's overall recycling rate, the overall performance of the combined residential recycling rate, and the amount of waste generated, recycled, composted, and disposed.

ANNUAL WASTE PREVENTION & RECYCLING REPORT BACKGROUND

2007 Seattle City Council Resolution 30990 requires SPU to report to the City Council by July 1st of each year on the previous year's progress toward recycling goals, as well as further steps to meet goals in the current and upcoming years.

Resolution 30990 also set Seattle's recycling goal to reach 60% recycling of Municipal Solid Waste (MSW) by the year 2012, and 70% by 2025.

In February 2013, the City Council adopted revised recycling goals by adopting "Seattle's Solid Waste Plan 2011 Revision." The revised goals for MSW are to recycle 60% by 2015, and 70% by 2022. In addition, Seattle set a goal to recycle 70% of construction and demolition debris by the year 2020.

This is the twelfth City of Seattle Annual Report.

SECTOR-SPECIFIC RECYCLING GOALS

By 2022

City-wide = 70%

Single-family Residential = 83%

Multifamily Residential = 54%

Commercial = 75%

Self-Haul = 46%

By 2020

Construction and Demolition Debris = 70%

Single-family Residential (pg. 11)
This section provides information on the amount of waste generated, recycled, and disposed of in the Single-family Residential sector and includes 2018 program highlights.

Multifamily Residential (pg. 14)
This section provides information on the amount of waste generated, recycled, and disposed of in the Multifamily Residential sector and includes 2018 program highlights.

Commercial (pg. 17)
This section includes information on the amount of waste generated, recycled, and disposed of by Commercial businesses and includes 2018 program highlights.

Self-haul and Transfer Stations (pg. 20)
This section covers material delivered (or "self-hauled") to the City's two transfer stations, excluding material delivered by the City's contracted collection haulers. Information is included regarding the amount of waste generated, recycled, and disposed of by self-haulers, along with 2018 program highlights.

Waste Prevention and Product Stewardship (pg. 25)
This section covers Seattle's waste prevention programs, which are designed to reduce the amount of waste generated and toxics in manufactured products. It also covers product stewardship programs that engage producers of products and packaging to reduce waste through improvements in design and labeling and by taking responsibility for financing the collection and processing of their own products. These programs often include reduction, reuse, and recycling elements.

This section also describes how the City quantifies the impact that waste prevention and product stewardship programs have on waste generation, reuse, and recycling, acknowledging the difficulty in measuring what isn't produced.

Construction and Demolition Debris (pg. 31)
This section provides an overview of Construction and Demolition (C&D) debris, which are typically self-hauled by construction or demolition contractors, a third-party drop box service, or dump trucks to private recycling facilities or private transfer stations for disposal. C&D materials are not considered MSW and are not included in how Seattle calculates the overall MSW recycling rate.

NOTE: *2018 Waste Prevention & Recycling Report Tonnage Data is included as Attachment A (beginning on pg. 35) and a Letter from SPU's Solid Waste Advisory Committee is included as Attachment B (pg. 45).*

BACKGROUND ON THE RECYCLING RATE

Seattle's recycling rate is based on the weight of materials and is calculated by determining the percentage of Municipal Solid Waste (MSW) diverted from the landfill by reuse, recycling, and composting. Seattle's MSW includes:

- All garbage, recycling, and composting (e.g., yard waste, food waste, and compostable paper/packaging) residents and businesses set out for collection;
- All garbage, recycling, and composting self-hauled to the City's two transfer stations; and,
- Composting managed on-site by Seattle residents.

TAKE A CLOSER LOOK

The per capita waste generation rate (i.e., pounds of waste per person per day generated) in the combined Single-family and Multifamily Residential sectors has decreased, dropping from the peak of 2.74 pounds per person per day in 2007 to a low of 2.16 pounds per person per day in 2018. That's a 21% reduction over the last decade, and a continued drop from 2017's low of 2.23 pounds per person per day!

DEFINITIONS:

- **Solid Waste** – A combination of materials that have traditionally been collected for disposal at a landfill (i.e., garbage), as well as recycling and composting.
- **Recycling** – A combination of materials that have been placed in a recycling container, collected, sorted, processed, and shipped to an end-user, who uses the materials as feedstock in the production of new products. Recycling includes bottles, cans, plastic containers, packaging, metals, clothing, cardboard, newspaper, and several categories of paper.
- **Reuse** – Includes items that have been reused or donated for others to use.
- **Composting** – Includes yard waste, food waste, and compostable paper/packaging.
- **Rescued or Recovered Food** – Includes food that has been retrieved mostly from food industry businesses and donated to local organizations, feeding people in need.
- **Construction and Demolition (C&D) Debris** – Includes debris and waste materials from construction, demolition, and land clearing activities.

MATERIALS NOT INCLUDED IN CALCULATING RECYCLING RATES

The MSW recycling rate excludes the vast majority of C&D debris, along with 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.

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.

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

FACTORS THAT IMPACT 2018 RECYCLING RATES

~121,000 new residents since 2010

Significant economic activity

Over 18,000 tons of Food Waste Diverted and 3,500 tons of Food Rescued

Numerous factors contribute to a slight decline in recycling rates

WHAT COUNTS?

Seattle counts only what is actually recycled, composted, or reused and not just "diverted" from landfills.

If materials have historically not been landfilled or are not recycled or converted into another product for use, Seattle doesn't count it towards its recycling rate.

Recycling from automobile wrecking are excluded from Seattle's recycling rate calculations because they never enter 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 a source of fuel. Seattle also excludes materials that other municipalities may consider recycled such as those used for "beneficial use," which includes waste materials used to cover garbage at the landfill, commonly known as Alternative Daily Cover.

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

SUCCESSFULLY MANAGING CHANGE

Growth in Population and Economic Activity

Waste generation rates are influenced by changes in population and economic activity, typically increasing with population or economic growth and decreasing when population decreases or economic activity slows. In late 2007, Seattle was impacted by the "Great Recession," which resulted in a significant reduction in the amount of waste generated in Seattle. By 2009, as economic activity was continuing to slow across the nation, Seattle was beginning to experience some of the fastest population growth in its history. Since 2010, Seattle has gained approximately 121,000 new residents. This population boom is partly due to Seattle being home to some of the fastest growing companies in the nation. Many of these new residents are unfamiliar with Seattle's recycling programs and require education and training on how to recycle properly. However, the impacts of growth in population and economic activity has been lessened by broad participation in waste prevention and food waste diversion programs.

Container Light-weighting

Packaging materials are constantly changing. Plastic and aluminum containers have continued to become lighter due to improved design and engineering, which impacts a weight-based recycling rate. "Light-weighting" of containers can result in decreasing recycling rates even when volumes and the individual number of containers in a ton of recyclables have increased.

TAKE A CLOSER LOOK

As containers continue to get lighter, Seattle must recover significantly more each year in order to recycle the same weight of materials as recycled the previous year.

Housing Shifts

Seattle's recent population growth has caused a significant shift from single-family to multifamily residential units. In 2018, Seattle's housing market included about 180,000 multifamily units and even more are under construction. Traditionally, multifamily residential units experience service barriers that impact recycling programs, mainly because garbage and recycling services are provided by dumpsters instead of carts or cans commonly used in single-family collection services. Dumpsters require additional space in an already tight space and are often not located conveniently to residents, which limits participation levels in recycling and composting programs. Multifamily buildings also experience higher levels of recycling contamination for a variety of reasons, including lack of space for and ability to conveniently site recycling and composting containers.

Demographics

Seattle residents embrace our cultural diversity and SPU recognizes that eliminating racial, social, and cultural barriers are vital to reaching waste prevention and recycling goals. Seattle has adopted service equity goals to ensure waste prevention and recycling goals are met by working together as a community. Service equity seeks to provide all residents with equal access to City programs and with educational and outreach information in several languages. SPU's goal is to provide educational and outreach services including materials that are not only translated into several languages, but "transcreated" so that they are culturally relevant to each member of our diverse community, encouraging increased waste prevention, reuse, and recycling. In addition, as people move to Seattle from locations with different recycling programs, education on how to recycle correctly is critical.

IMPROVING RECYCLING RATE CALCULATIONS

Seattle's solid waste (i.e., garbage, recycling, and compost) collection systems are complex and calculating the recycling rate for specific sectors involves the collection of data from businesses, contractors, and non-governmental entities that are required to self-report what they collect for recycling. Seattle is continually improving the process used to collect and analyze the data collected and calculate the recycling rates for each sector and overall. This includes working closely with local recycling and reuse service providers to help them better calculate their own recycling and reuse rates. While great efforts are taken to ensure complete reporting, prevent double counting, and ensure materials are correctly assigned to the appropriate sector, there is always the possibility that adjustments will need to be made to more accurately reflect the true recycling rate for each sector. When new data is brought to the City's attention, it may result in going back to update previously reported totals and rates calculated based on those totals. The City is constantly striving to improve the quality of the data it reports, but it is important to keep in mind that totals and rates reported are estimates based on the understanding of the data available at the time.

Homelessness

Seattle continued responding to the needs of homeless individuals living outdoors. The 2018 homelessness response included collecting over 1,000 tons of material from unsanctioned homeless encampments throughout the City. The waste from the city-wide homelessness response was applied to the Self-haul sector totals and accounted for ~1% of the City's Self-haul waste disposed. Approximately 20 unsanctioned encampments in the City were provided direct collection of their garbage. Recycling services are unable to be offered due to the risks associated with contamination from hazardous and bio-wastes.

Markets for Recyclables and China's Operation Blue Skies

Seattle, as well as communities throughout the world, continues to face significant challenges from changes and limits in international markets for recyclables, most notably with China's import restrictions on mixed waste paper and mixed plastics. Although China's restrictions impacted Seattle, the impact was not as drastic on Seattle's recycling programs as it was for other cities throughout the nation. This is because Seattle's processing and marketing contracts for recyclables have been designed to allow Seattle to quickly respond to drastic market changes and ensure what is collected for recycling is actually recycled and not landfilled. Under the terms of the City's processing contract, Seattle receives full market value of the recyclables each month. This revenue sharing arrangement allows Seattle to gain or lose revenue based on fluctuations in the markets and allows Seattle to quickly respond to volatile recycling markets and not resort to landfilling lesser valued recyclables like other cities were forced to do. The City's ownership of "market risk" protects Seattle from contractor appeals or protests, as neighboring Cities faced due to recent market fluctuations.


Hundreds of US cities are killing or scaling back their recycling programs

China stopped importing trash from other countries. Now, many cities in the US are facing a recycling crisis.

By Chavie Lieber | @ChavieLieber | Chavie.Lieber@Vox.com | Mar 18, 2019, 4:30pm EDT

Seattle's recyclables are currently processed and marketed through a sorting contract with Republic Services that requires Republic to broker the recyclables to the most profitable market, whether international or domestic. In 2018, approximately two-thirds of Seattle's recycled materials were processed domestically and a third internationally. Republic engaged with domestic markets for all glass bottles and jars, all metals and cans, and about half of the City's waste paper. As a response to China's ban on mixed plastics, Republic was able to secure domestic processing of its mixed plastics at a Northwest processing facility. Seattle was also able to secure new domestic markets for some grades of waste paper.

Seattle continues to work with Republic to further identify domestic processing opportunities and markets for both mixed waste paper and mixed plastics, but continues to use both domestic and international markets for its higher valued recyclables. For example, source separated plastics with a higher value, such as bottles, milk jugs, and other packaging is marketed using both domestic and international markets, depending on which market is most profitable. Republic also ships some grades of waste paper and higher value source separated plastics to a variety of Asian ports for processing. The exact country or destination for some grades of waste paper and higher valued source separated plastics changes monthly, depending on available shipping and markets.

China continues to directly receive and process some cardboard from U.S. cities, but they have been receiving little mixed waste paper directly from U.S. sorting facilities. China is still a major purchaser of waste paper and plastics, since they need it as feedstock to their manufacturing processes; however, they currently receive and process much of their waste paper and source separated plastics after it has been initially processed in other Asian cities.

Although Seattle managed to avoid landfilling recyclables like other cities, Seattle's overall MSW recycling rate experienced a slight drop of less than half a percentage point. While not definitively known, it is thought that the media attention given to China's restrictions on receiving recyclable materials and other cities' cutting of their recycling programs or landfilling recyclable materials may have negatively impacted recycling here in Seattle. Such media coverage may have given Seattle's customers the impression that Seattle's recyclables were being sent to the landfill, when in fact, Seattle was one of the only cities to avoid sending recyclables to the landfill because of its innovative processing contract. By planning for future and potential market fluctuations, Seattle was able to quickly respond to China's restrictions and secure new domestic and alternative international markets for its recyclables.

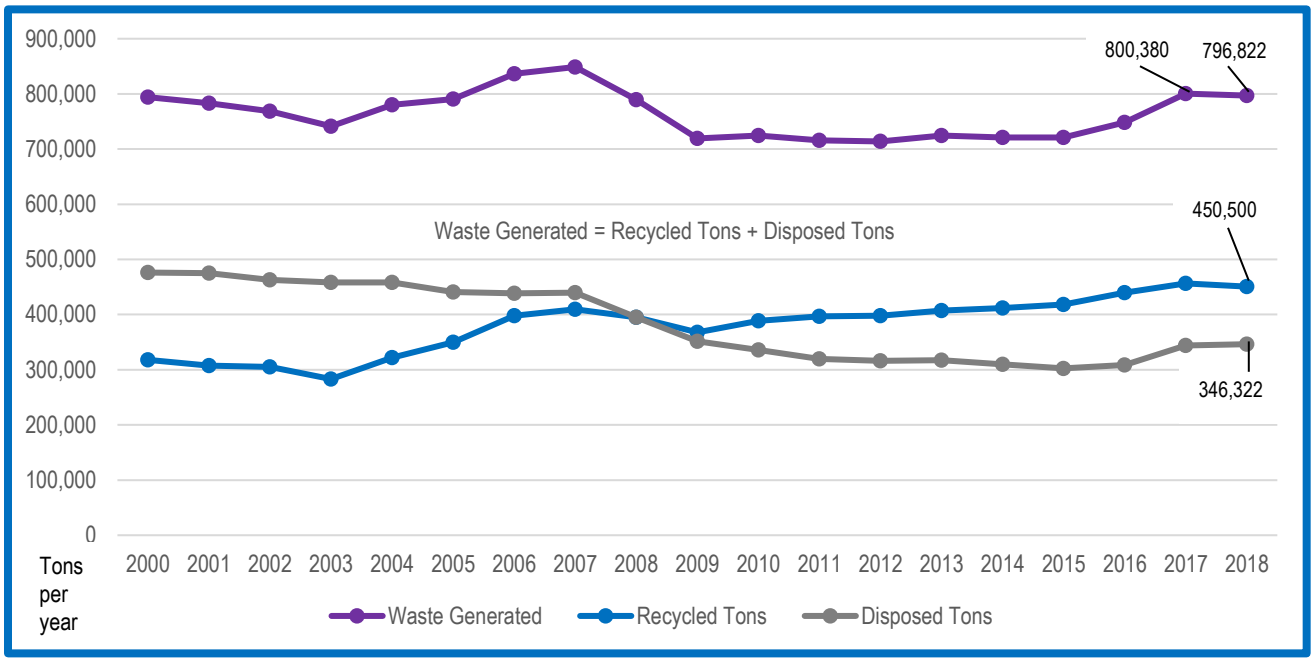
Overall MSW Recycling Rate

Seattle recycled 450,500 tons of material in 2018, a decrease of 5,958 tons of material from 2017 (a 1.3% reduction). Overall disposal increased in 2018 by 2,400 tons over 2017 (a 0.7% increase), and overall MSW generation decreased in 2018 by 3,558 tons (a 0.4% decrease). As a result, the City's MSW recycling rate decreased from 57% in 2017 to 56.5% in 2018 (less than half percentage point drop before rounding). The reasons for the slight decrease in Seattle's 2018 recycling rate are not definitively clear. We know that an adjustment in how Seattle calculates the amount of organic materials diverted from residential households through on-site or backyard composting resulted in a downward recalculation of the tonnage attributed to Single-family Residential recycling contributed to the overall reduction. We also speculate that a combination of the following factors may have contributed to the decrease, but Seattle will need to do additional research over the coming year to verify:

- Light-weighting of recyclables may have resulted in the overall weight of recyclables to decrease though the volume of materials being diverted remained the same or increased.
- Improved messaging throughout 2018 on how to properly recycle may have increased disposal tonnage as a result of residents correctly disposing of non-recyclable items in the trash – following the mantra of "*When in doubt, throw it out*."
- Media coverage of China's restrictions on accepting mixed waste paper and mixed plastics and the landfilling of these materials by some jurisdictions may have impacted customers' perception of recycling and depressed Seattle's recycling participation levels.

Figure 1 below combines data from all MSW sectors and shows that despite significant population and economic growth over the last ten years, as well as the negative media regarding China's restrictions on importing recyclables and the impact that may have had on customer recycling habits, Seattle still generated less waste in 2018.

2000-2018 OVERALL MSW TONS
TOTAL WASTE GENERATION, RECYCLING, AND DISPOSAL
FIGURE 1



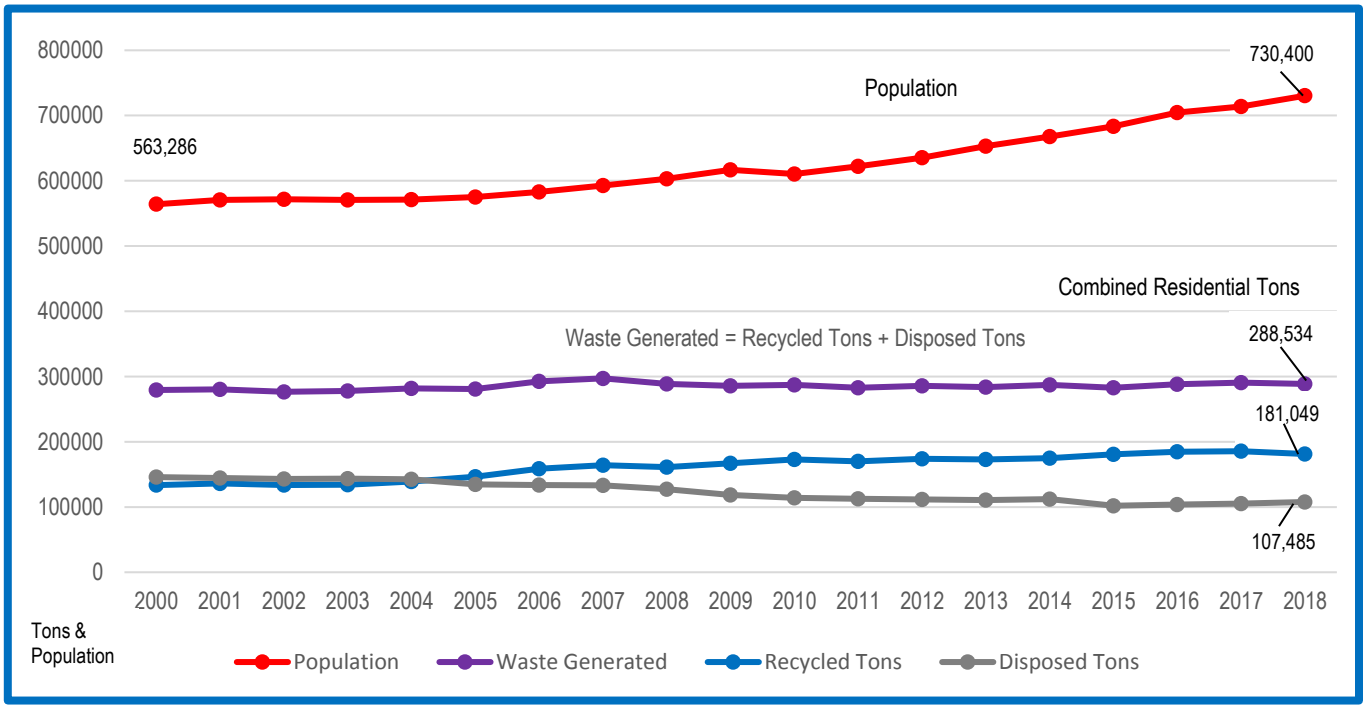
TAKE A CLOSER LOOK

Developments in 2018 pointed to the need for regional cooperation and actions to achieve a sustainable and responsible recycling system. King County, with assistance from Seattle, formed the Responsible Recycling Task Force (RRTF) to conduct a deep dive into impacts and opportunities and develop recommendations. The RRTF met throughout 2018 and published its findings and recommendations in January 2019, which includes recommended policy and programmatic changes, such as legislating packaging stewardship, developing local infrastructure, harmonizing recycling programs, and increasing demand for recycled materials. The RRTF Final Report can be viewed at https://kingcounty.gov/depts/dnrp/solid-waste/about/advisory-committees/recycling-task-force.aspx.

Figure 2 compares Seattle's combined single-family and multifamily residential population growth to the amount of waste generated, recycled, and disposed of from 2000 through 2018 in these two residential sectors. Seattle's substantial growth in population and development activities has not resulted in a significant increase in either the waste generation or disposed tons. Seattle's Residential per capita waste generation rate declined to 2.16 pounds per person per day – one of the lowest rates in the country. Seattle's combined residential recycling rate has risen over this time period from 48% in 2000 to 63% in 2018, despite a 30% increase in the population, new residents moving from areas that have different recycling programs, and an ever-increasing share of households living in the Multifamily sector. While the overall residential recycling rate has dropped a bit (down 1%) over the last year, this drop is primarily associated with an adjustment in how Seattle calculates the amount of organic materials diverted from residential households through on-site or backyard composting. This adjustment resulted in a downward recalculation of the tonnage attributed to Single-family Residential sector recycling (2,500 tons). It may also be related to other factors, such as residents' perception of what is recyclable as a result of negative media coverage of the impacts of China's restrictions on recyclables.

2000-2018 OVERVIEW OF POPULATION GROWTH AND RESIDENTIAL WASTE GENERATION, RECYCLING, AND DISPOSAL TONS

FIGURE 2

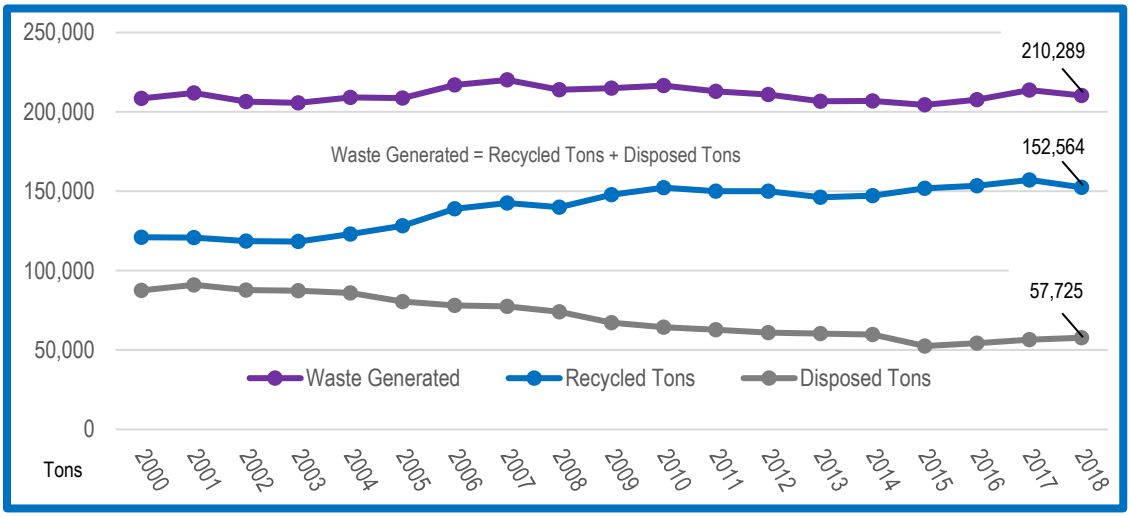


Single-family Residential

The Single-family (SF) Residential sector are households with can or cart service (as opposed to dumpsters). The majority of households are SF dwellings but also include duplex to 4-plex dwellings. SF Residential customers set out garbage, recycling, and food and yard waste for collection. A number of households compost some yard and food waste themselves on-site.

SINGLE-FAMILY RESIDENTIAL TONS WASTE GENERATION, RECYCLING, AND DISPOSAL

FIGURE 3



The 2018 SF recycling rate decreased by less than one percentage point from 73.5% in 2017 to 72.6% in 2018. SF residents recycled 4,604 less tons in 2018 than in 2017. This reduction can be attributed to an overcalculation of the tons diverted through backyard composting. On-site composting data is gathered through the *Home Organics Survey*, completed every 5 years. In February 2018, the survey results showed that fewer SF customers are composting their own organics on-site than previously projected. For 2018, backyard composting was actually 2,500 tons less than anticipated. Other factors, such as the light-weighting of recyclables and customers' perceptions of recycling due to the media coverage of China's restrictions depressing recycling participation levels, may have also played into the decrease in the SF recycling rate. Seattle's improved messaging throughout 2018 on how to recycle correctly also may have increased disposal tonnage as a result of residents properly disposing of non-recyclable items in the trash – following the mantra of "*When in doubt, throw it out*."

SINGLE-FAMILY RESIDENTIAL RECYCLING RATE

2022 SF Recycling Goal of 83%

2018 SF Recycling Rate = 72.6%

Down 0.9% from 2017

2018 PROGRAM HIGHLIGHTS – SINGLE-FAMILY

Community Outreach and Education

Outreach for SF residents focuses on meeting people where they are. Being out in communities allowed greater interaction and easier access to the latest customer information. SPU reached over 9,000 residents at 25+ community events including: Umoja Fest, Pride Fest, Fiestas Patrias, farmers markets, and local grocery stores.

Compost Giveaways

In their 5th year, these events connect food waste composting at home with the creation of compost by giving customers compost made from their food and yard waste. Done in partnership with community organizations, the three events gave back over 180 cubic yards of compost to 350 households of 600+ individuals. These events help close the organics recycling loop by turning valuable organics into soil nutrients for Seattle gardens.

Recycling and Reuse Events

SPU partners with contractors Waste Management and Recology to host community collection events to provide customers with ways to bring harder to recycle items and useable materials for reuse. This year events were held in Chinatown/International District, Wallingford, Wedgewood, West Seattle Junction, Central District, and Rainier Valley. The reuse events collected appliances, reusable household goods, batteries, electronics, and styrene foam from over 600 households

Distribution of Solid Waste Information

To keep customers informed about current solid waste efforts and sorting guidelines, all ~150,000 SF households received:

- An Annual *Collection Calendar* with the updated sorting guidelines, information on how to deal with harder to recycle items, and information on how to properly dispose of bulky items.
- The 2018 *Curbwaste & Conserve Newsletter*, which was mailed in the Spring and Fall to all single family and multifamily households highlighted recycling, composting, and waste prevention programs.

Recycle It App Lauched for Mobile Devices

The *Recycle It* app launched in late 2018. It is a quick and convenient way for customers to get common solid waste service needs met, such as requesting notifications concerning their collection day the night before, so they won't miss a recycling day. Customers can also report common service issues through SPU's online webforms and get answers to recycling and disposal questions on the *Where Does it Go* tool. The ap is available for Apple and Android devices.

REACHING THE 2022 RECYCLING GOAL

The SF sector must increase recycling by slightly over ten percentage points to achieve the sector-specific recycling rate goal of 83% by 2022. This is challenging given the changing markets for recyclables, customer perceptions of changes to the recycling industry, and the increasing cost of diverting the more difficult materials. However, as mentioned in the highlights above, outreach and education efforts are focused on increasing recycling. SPU is committed to the actions listed below to help achieve the SF sector recycling goal by 2022.

IN 2019, SEATTLE WILL:

- Provide information on recycling and composting guidelines through a variety of vehicles, including direct mailings, online tools, community outreach, and a targeted recycling campaign.
- Create consistent messaging on waste prevention, recycling, and composting that will reach all customers in an equitable and culturally relevant way.
- Continue to partner with community groups to increase residents' ability to recycle and compost more materials through recycling and reuse events.
- Finalize transcreation of recycle, compost, and garbage guidelines into Chinese and Spanish.
- Focus on SF customers increasing the diversion of organics from the landfill by composting more yard waste, food waste, and compostable paper and packaging
- Raise customer awareness around contamination and how to Recycle correctly to ensure the materials that are put into the recycling cart can ultimately be recycled.
- Emphasize the expansion of participation in waste prevention programs, specifically food waste prevention and food rescue programs.
- 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 Skies.
- Work with other stakeholders to begin the process to plan, site, and permit new recycling processing facilities to expand domestic processing of recyclables.

Multifamily Residential

MULTIFAMILY RESIDENTIAL RECYCLING RATE

2022 MF Recycling Goal of 54%

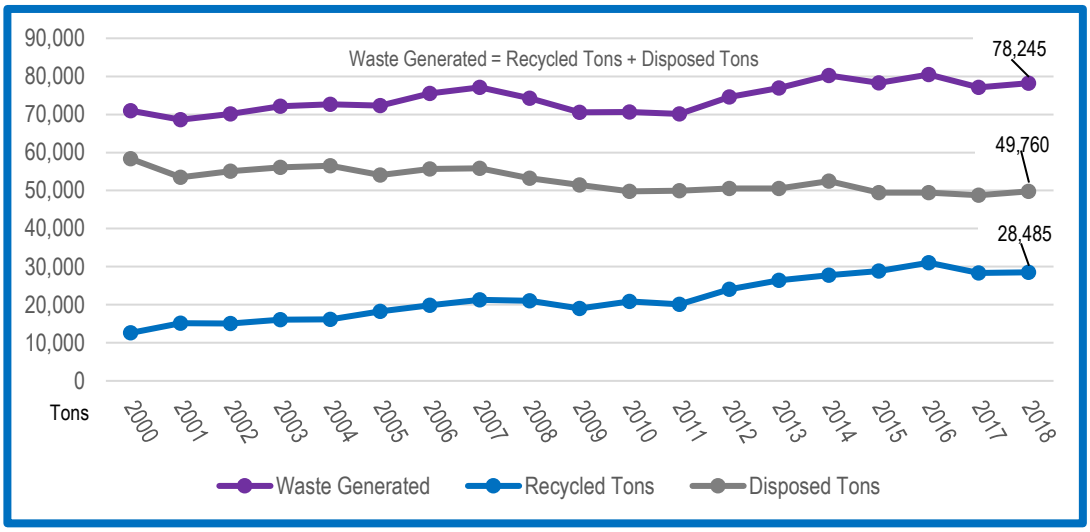
2018 MF Recycling Rate = 36.4%

Down 0.4% from 2017

The Multifamily (MF) Residential sector includes apartment and condominium buildings. These buildings normally use dumpsters for garbage and generally have five or more housing units. Materials collected include garbage, recycling, and composting (i.e., yard waste, food waste, and compostable paper and packaging). To improve the MF recycling rate, Seattle continues to work to identify and remove recycling and composting participation barriers, such as collection containers that are inconveniently located, constraints in common areas that don't allow enough space for recycling and composting containers, and living areas that create space constraints for sorting of recycling and food waste inside the apartment units. To address the recycling and composting infrastructure barriers experienced by many MF buildings, Seattle continues to provide residents and building managers with the tools and information necessary to improve residents' accessibility to recycling and composting.

MULTIFAMILY RESIDENTIAL TONS WASTE GENERATION, RECYCLING, AND DISPOSAL

FIGURE 4



In 2018, recycling in the MF sector generation increased by 1,095 tons, with disposal contributing 987 tons to that increase, leading to an overall decline in the recycling rate of 0.4% (from 36.8% in 2017 to 36.4% in 2018). The overall waste generation in the MF sector increased by 1.4% while the number of residents living in MF residential buildings has been increasing at a much faster pace. For example, the number of Seattle residents living in MF buildings increased by 5% between 2016 and 2017 according to the American Community Survey 5-year Estimate. It is assumed that some of the factors impacting the Single-family recycling rate also impacted the MF recycling rate.

2018 PROGRAM HIGHLIGHTS – MULTIFAMILY

Culturally Relevant Outreach and Education

SPU expanded the scope and reach of the MF recycling programs through innovative multi-lingual and multi-cultural education and outreach programs that reached customers in an equitable and inclusive manner. The City's MF outreach team provided education and outreach information in many different languages and educational materials were designed to reach Seattle's diverse communities in a culturally relevant manner.

Tailored Technical Assistance

SPU provided technical assistance on recycling services and container placement to 414 apartment and condo buildings, serving 58,568 households. It also delivered 10,645 free kitchen food scrap containers to MF residents and conducted resident trainings at 75 apartment buildings or community sites, where 3,424 residents were trained. In addition, 27 of these trainings were multilingual, where 590 residents were trained in a language other than English. The SPU MF team responded to 987 recycling education messages and calls and supported 529 buildings with recycling and composting information and signage.

Reaching Customers

SPU reached out to all 7,184 MF accounts in 2018 with a direct mailing about waste reduction tools and resources, in addition to providing recycling and composting guidelines to all 180,000 MF households. In addition, the *Recycle It* app for mobile devices on the Apple and Android platforms provides a way for customers to get their most common solid waste recycling and disposal questions answered via the *Where Does it Go* tool.

TAKE A CLOSER LOOK

SPU partners with Architects and developers during the building design phase of future MF residential buildings to ensure recycling, composting, and solid waste services are integrated into the building's design. Partnering with and educating architects and developers early in the design and development process is one of the direct ways SPU works to increase the amount of food waste and recyclables captured from new buildings by making sure new developments not only meet municipal code requirements but that recycling, composting, and solid waste services have been thought out and are accessible and easy for residents to use. SPU also partners with SDCI to review plans for commercial developments to ensure recycling services are also integrated into the design and function of new commercial developments.

REACHING THE 2022 RECYCLING GOAL

The MF sector needs over a seventeen percentage point increase to achieve its sector-specific recycling goal of 54% by 2022. As Seattle's population and number of MF residential buildings increase, new buildings must be designed to include recycling and composting systems that are convenient to residents. Also, existing MF buildings that experience service barriers and constraints must also be modified or adapted to improve convenience and address accessibility issues.

SPU will continue its efforts in recycling and waste prevention by training residents in a way that is culturally relevant and providing the necessary tools to divert recyclables and food waste from the garbage. In addition, SPU will use solid waste metrics that were designed to track baseline building information to target outreach efforts and to assess building performance. SPU is committed to the following actions.

IN 2019, SEATTLE WILL:

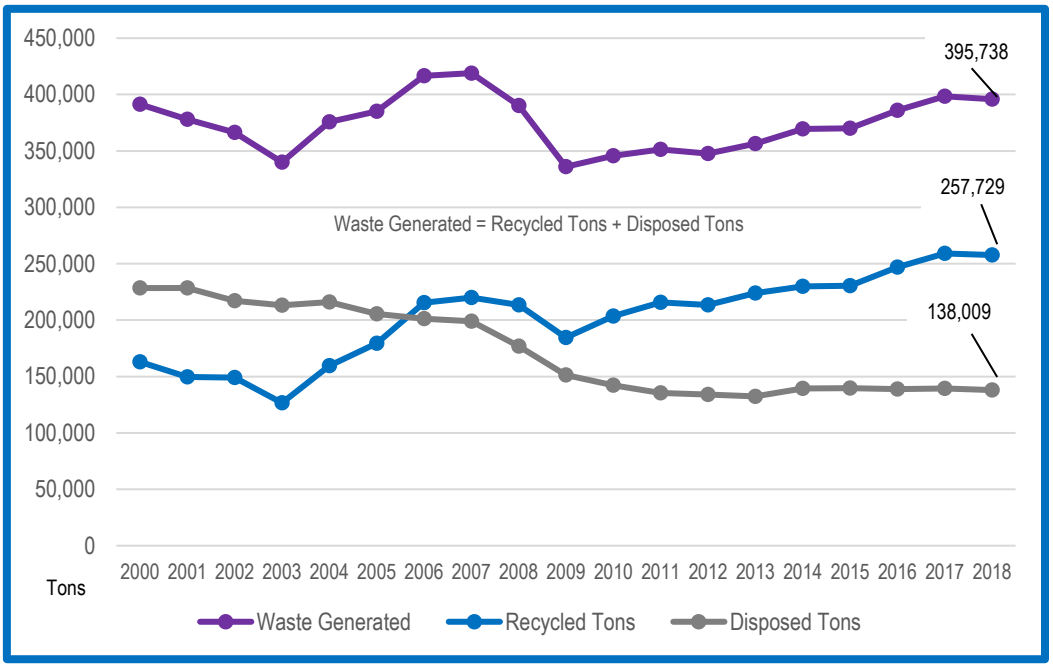
- Develop easy-to-us tools to help educate property owners and managers on how to lower garbage collection costs by recycling and composting more.
- Assist property owners and managers on where to place recycling and composting containers to improve residents' access and improve participation.
- Use metrics to improve educational and outreach efforts.
- Increase awareness of the impact and cost of food waste and promote strategies for residents to improve food storage to prevent wasted food.
- Expand efforts to reach more residents with on-site educational information in several languages, increasing cultural relevance.
- Transcreate educational materials into several languages.
- Provide property owners and managers with transcreated information to increase participation in recycling and composting programs.
- Work with architects, designers, and planning agencies to ensure MF buildings are designed to include easy to use and accessible recycling and composting systems.
- 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 recycling markets to mitigate market impacts and disruptions caused by China's Operation Blue Skies.
- Work with other stakeholders to begin the process to plan, site, and permit new recycling processing facilities to expand domestic processing of recyclables.

Commercial

The Commercial sector includes garbage, recycling, and composting collected from businesses. While Seattle provides the collection of garbage, recyclables, and compost, commercial businesses can contract independently for the collection of their recyclables and organic materials. Therefore, to gather data on the amount of materials recycled and composted in the Commercial sector, Seattle must rely on businesses, contractors, and non-governmental entities that are required to self-report what they collect for recycling and composting.

COMMERCIAL TONS
WASTE GENERATION, RECYCLING, AND DISPOSAL

FIGURE 5



In 2018, the Commercial sector's recycling rate increased by 0.1 percentage point to 65.1%. This increase is most likely attributable to the increased collection of organic materials for composting. Total generation of MSW in 2018 for the Commercial sector decreased by 2,684 tons (from 398,422 tons in 2017 to 395,738 tons in 2018), with disposal decreasing by 1,308 tons and recycling decreasing by 1,376 tons from the previous year. Due to the self-reporting nature of the Commercial sector, the actual recycling and composting data is more of an art than a science, and every effort is made to track down the materials that are being diverted from disposal. The good news is that the Commercial sector's recycling rate in 2018 did not seem to be significantly impacted by China's restrictions on recyclable materials.

COMMERCIAL RECYCLING RATE

2022 Commercial Recycling Goal of 75%

2018 Commercial Recycling Rate = 65.1%

Up 0.1% from 2017

2018 PROGRAM HIGHLIGHTS – COMMERCIAL

Food Waste Diversion

Seattle businesses diverted approximately 18,000 tons of commercial food wastes by teaming with other businesses that recycle inedible food waste into animal feed.

Food Rescue

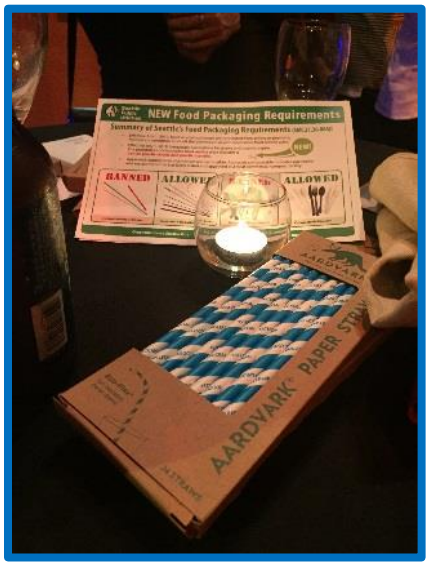
Seattle hunger relief organizations retrieved (or "rescued") at least 500 tons of surplus food that would otherwise have gone to waste and redistributed that food to Seattle's growing population of food insecure residents.

Food Rescue Innovations Lab

SPU and Mary's Place, a local non-profit helping Seattle's food insecure residents, hosted the first Food Rescue Innovations Lab to reimagine food rescue and its impact on the significant amount of food waste and excess food that is generated in Seattle. The event was a collaboration of food industry leaders and community agencies feeding Seattle's food insecure populations and provided a forum to discuss barriers and ideas to divert safe, edible food to agencies serving those in need.

Outreach, Education, and Technical Assistance

SPU provided recycling education and outreach at business community events and tradeshows, and supported efforts by the public to divert food waste and recycling at special events.



SPU also provided technical assistance to local businesses on compliance with the ban on single-use plastic utensils and straws, and plastic bag ban, and offered assistance to help businesses comply with all recycling and solid waste codes. Some of the key events in 2018 included:

- Partnering with the Washington Hospitality Association's (WHA) annual Seattle Summit to provide information to attendees and show alternatives. SPU coordinated a "packaging showcase" vendor area at the conference with participation of over 12 food packaging suppliers and manufacturers of compostable straws, utensils, and packaging.
- Participated in the Restaurant Road Show that provides access to new food business entrepreneurs to City of Seattle and other agencies.
- Met with the senior management and account executives of numerous large distributors of food service packaging in Washington and supply managers from major retail food suppliers to help them comply and find alternatives to plastic service ware and packaging, and ways to inform customers.

REACHING THE 2022 RECYCLING GOAL

Reaching the 2022 Commercial sector recycling goal of 75% will require further development of composting options for organics, food wastes, and compostable packaging. To help move the Commercial sector towards the recycling goal, SPU is committed to doing the following in 2019.

IN 2019, SEATTLE WILL:

- Educate business owners on how to lower garbage collection costs by recycling, composting, switching to compostable packaging, and engaging in additional waste prevention activities.
- Provide in-language education and technical assistance to immigrant and refugee-owned businesses, supporting 12 languages.
- Continue to transcreate commercial educational materials into additional languages.
- Conduct Sustainable Landscaping trainings for landscape professionals, including classes in Spanish.
- 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 home or at work.
- 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.
- Continue to support legislation that promotes the development of sustainable packaging alternatives.
- 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 recycling markets to mitigate market impacts and disruptions caused by China's Operation Blue Skies.
- Continue to develop new partnerships with organizations working to address food insecurity and identify solutions to reduce wasted surplus food from food businesses.
- Identify new ways food manufacturing businesses can divert food production by-products to businesses who recycle these by-products into animal feed or compost products.
- Promote the availability of the Hazardous Waste Management Program's business and technical services for disposal of small quantities of hazardous or toxic wastes.
- Provide in-language guides online to educate business owners and employees of safer alternatives to toxic pesticides, fertilizers, solvents, and cleaning supplies.

Self-haul and Transfer Stations

SELF-HAUL RECYCLING RATE

2022 Self-haul Recycling Goal of 46%

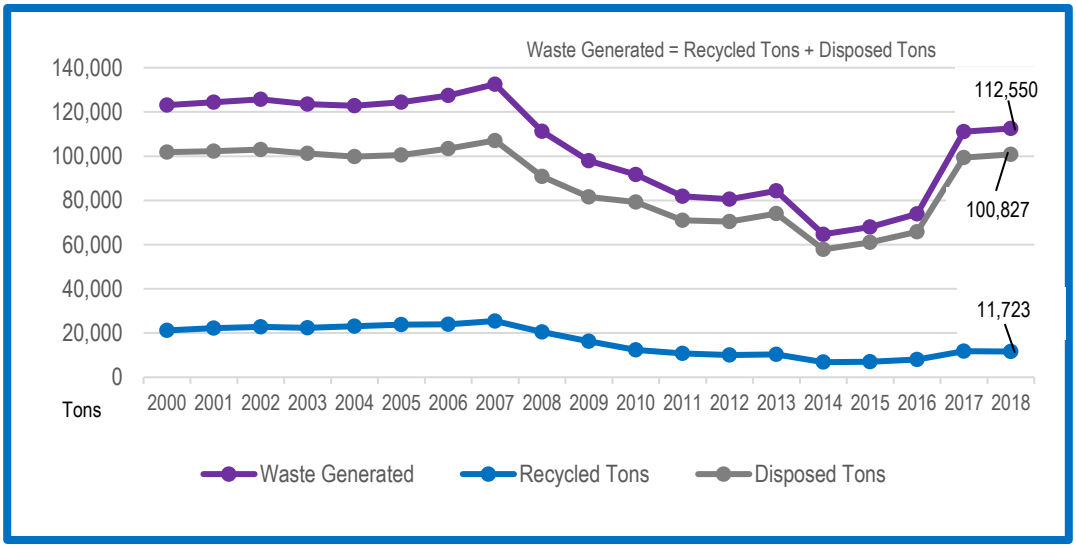
2018 Self-haul Recycling Rate = 10.4%

Down 0.2% from 2017

The Self-haul sector includes material delivered (or "self-hauled") by residents, businesses, and governmental agencies to the City's two transfer stations. Recycling in the Self-haul sector refers to recycling brought to the City's transfer stations and includes composting (i.e., yard waste, food waste, and compostable paper and packaging), appliances, metals, items that can be donated for reuse, and other recycling. Self-haul loads containing recyclable materials mixed with garbage are virtually impossible to separate out for recovery if not sorted before arrival at the station. Waste from the City's homeless encampments is also captured as Self-haul. While most C&D debris is hauled for recycling or disposal to private C&D transfer facilities, some of this material is self-hauled to the City's transfer stations. C&D debris received at the City's transfer stations is counted as Self-haul MSW and not in the C&D waste category.

SELF-HAUL TONS
WASTE GENERATION, RECYCLING, AND DISPOSAL

FIGURE 6



Seattle's Self-haul recycling rate does not include recycling and composting that is self-hauled by customers to private waste and recycling facilities. Seattle works to capture materials taken to private waste and recycling facilities by requiring annual reports of businesses located within Seattle. However, not all the material generated in the City is hauled to facilities within the City, and not all the materials being hauled to in-City facilities is being generated within the City. Along with private operators, King County runs transfer facilities similar to Seattle's just outside the City that also receive self-hauled materials, some of which may originate from Seattle.

Seattle also regularly goes back to do quality checks on the data received. In 2018, it was determined that ~2,000 tons of recycling were not accounted for in the 2017 data, and as a result, the 2017 Self-haul sector data has been revised, increasing the recycling rate for 2017 to 10.6% from the 8.9% that was previously reported. This is an important aspect of gathering and tracking data such as this – continuously checking to determine quality and accuracy, and a reminder that the numbers reported throughout this Report are estimates and subject to revision.

In 2018, overall generation, disposal, and recycling remained flat in comparison to the previous year's tonnage. Recycling tonnage went down slightly (i.e., from 11,808 tons in 2017 to 11,723 tons in 2018, an 85 ton reduction) and garbage tonnage went up slightly (i.e., from 99,290 tons in 2017 to 100,827 in 2018, a 1,537 ton increase). This adds up to a slight increase in overall generation of 1,451 tons in 2018. As a result, the Self-haul sector recycling rate for 2018 was 10.4%, a 0.2 percentage point decline from the recalculated 2017 recycling rate.

Self-haul tonnage flowing through the City's transfer stations peaked in 2007 at 132,545 tons. From 2007 to 2014, tonnage declined due to the recession that started a decade ago 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 the low of 64,681 tons generated in 2014. Self-haul generation rebounded in 2018 to about 85% of the 2007 peak.

2018 PROGRAM HIGHLIGHTS – SELF-HAUL AND TRANSFER STATIONS

Expanded Recycling and Donations Drop-off at NTS

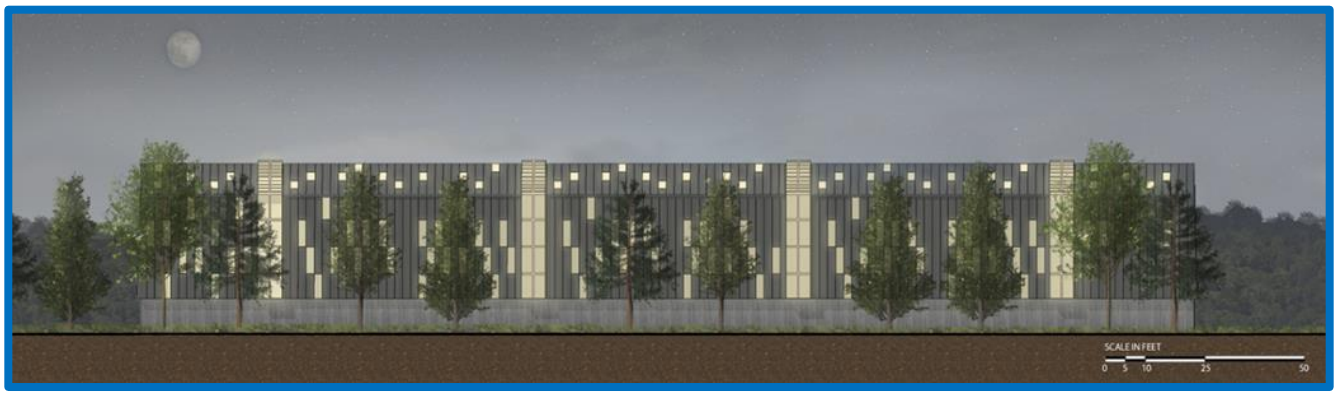
The *Recycling and Reuse Drop-off Center* provides an opportunity for customers to drop-off certain recycling and reusable items and was designed to improve customer traffic flows and make it easier to recycle at NTS. A donations drop-off site is managed by Seattle Goodwill and complements the recycling drop-off area of NTS, expanding customers' opportunities to divert items from the waste stream by allowing customers to drop-off certain reusable items for free before they cross the scale. In 2018, the donations drop-off site added an electronics drop-off service to expand and improve customer convenience.

North Transfer Station Wins Award

SPU's NTS project was awarded the 2018 American Institute of Steel Construction (AISC) Innovative Design in Engineering and Architecture with Structural Steel (IDEAS^2) Award for projects from across the United States within its cost range. The IDEAS^2 Award recognizes projects where structural steel has been utilized in an innovative manner. There were over 100 projects nominated for this award. The AICS sets industry standards for steel construction and has over 35,000 members nationwide. The NTS project was selected for the use of tri-cord trusses constructed with a new grade of steel tubing to meet height restrictions negotiated to reduce view impacts for the neighborhood.

South Recycling Center

SPU is in the process of designing the South Recycling Center, which will be located where the old South Transfer Station sat. The new facilities will include retaining the South Household Hazardous Waste Collection Facility, a recycling and reuse facility like that developed for the NTS, trailer parking to support STS operations, crew facilities, and 2.5 acres of space held for future Solid Waste Line of Business needs to support future waste diversion operations. In 2018, facility design reached 60%. Facility construction is planned to begin in 2020 with a 2022 completion date.



Rendering of the New South Recycling Center's Recycling and Reuse Facility.
Construction is planned to begin in 2020, with grand opening expected in 2022

REACHING THE 2022 RECYCLING GOAL

To reach the Self-haul 2022 Recycling Goal of 46%, significant efforts will need to be made to identify opportunities to increase recycling, such as encouraging the separation of organics and recyclables, like wood, metal, and cardboard, from incoming loads and encouraging customers to use the recycling and reuse opportunities available. Seattle is committed to doing the following in 2019.

IN 2019, SEATTLE WILL:

- Incentivize recycling by allowing customers to drop-off recyclables and reusable items for free.
- Improve recycling opportunities at transfer stations for metal, clean wood, and cardboard.
- Increase reuse opportunities by educating residents on the reuse and donation opportunities at both transfer stations.
- Complete the design for the new South Recycling Center, which will include new transcreated signage for the South Household Hazardous Waste Collection Facility and a new recycling and reuse area.
- 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.
- Continue to identify non-Seattle customers bringing materials to the transfer stations from other jurisdictions and devise a process to remove these waste amounts from recycling rate calculations.
- Improve tracking and reporting systems to capture self-haul of recycling to private recycling facilities and include this data in the self-haul recycling rate and not the C&D recycling rate, where it is currently applied.
- Update Continuity of Operations Plans for all Solid Waste functions to ensure uninterrupted services during an emergency or natural disaster.
- Maintain the Disaster Debris Management Plan to shorten the recovery phase following a debris producing disaster.

2018 SPOTLIGHT

SPU Waste-Free Community Matching Grant Program

In 2018, SPU launched the new Waste-Free Community Matching Grant Program to fund community-initiated waste prevention projects. SPU awarded $114,500 in total funds to 10 projects that will take place from June 2018-November 2019. Through the financial matching requirement, award recipients are contributing more than $60,000 of additional time and resources to implement their grant projects.

Projects include:

- Youth education
- Fruit tree harvesting
- Workshops to repair items
- On-site anaerobic digestion
- Multifamily waste prevention
- Reducing single-use plastic bottles
- Reusable food takeout containers
- Sewing workshops for immigrant and refugee communities
- Increasing accessibility to waste prevention opportunities in the Somali community

In 2018 the Grants:

- Facilitated 125 items being repaired
- Resulted in 7,009 pounds of food being rescued
- Expanded resources for low-income and homeless communities
- Provided new jobs, job training skills, and opportunities for developing youth leadership

The Waste-Free Communities Matching Grant Program used the following methods to increase equitable access, participation, and outcomes:

- Collected feedback from the community to help in the design of the program, including the application process.
- Allowed for print or video applications, both of which could be submitted in-language.
- Made grant documents available in 10 languages.
- Mailed and delivered in-language grant documents and fliers to community organizations and gathering places.
- Partnered with ECOSS to respond to in-language phone and email questions in 11 languages.
- Incorporated equity into the grant selection criteria.
- Included community members on the committee responsible for making grant award recommendations.

Waste Prevention and Product Stewardship

POUNDS PER PERSON PER DAY SOLID WASTE RESIDENTIAL SECTOR

Seattle's waste prevention programs are designed to reduce waste volumes from residential households and businesses and also to minimize toxics used in the manufacturing of the products and packaging used by residents and businesses.

Product stewardship programs engage producers of products and packaging to reduce waste and toxicity through improvements in design and labeling, and when producer responsibility is legislated, by taking responsibility for financing the collection and processing of their products. These programs often include reduction, reuse, and recycling elements.

Whenever possible, Seattle seeks to include waste prevention tons if they can be estimated, such as on-site composting and food rescue programs. In addition, it is informative to compare the pounds per person generation of waste with previous years data, which is shown in *Figure 7* below. Reductions in waste generation can occur for a variety of reasons, such as modifications in products and packaging or changes in residential or business practices, as well as due to specific waste prevention and product stewardship activities. These all combine to allow Seattle to generate and dispose of less waste, despite increasing population and economic activities.

FIGURE 7

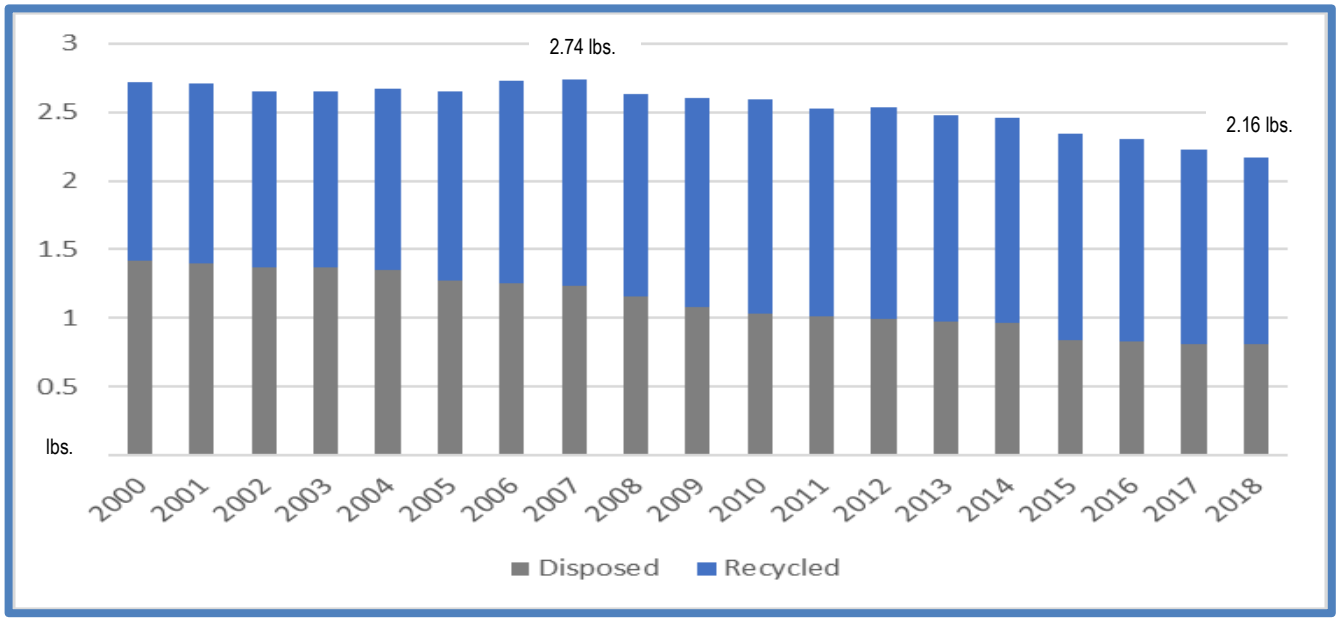


Figure 7 above shows the pounds per person per day of waste generated in the combined Single-family and Multifamily Residential sectors, which has decreased since peaking in 2007, dropping from 2.74 pounds per person per day in 2007 to a low of 2.16 pounds per person per day in 2018. This is a 21% drop over the last decade in what residents are generating per day.

2018 PROGRAM HIGHLIGHTS – WASTE PREVENTION AND PRODUCT STEWARDSHIP

Packaging

SPU rolled out the implementation of the first ban of single-use plastic straws and utensils of any major city in the US by removing temporary exemptions for single-use straws and utensils to the City's 2008 ordinance on food service packaging. Local, national, and international media attention resulted in many other jurisdictions contacting Seattle and implementing their own policies.

SPU also worked with the Northwest Product Stewardship Council to develop a legislative proposal to establish producer responsibility for all plastic packaging. Brands whose products are packaged in plastic would finance all aspects of its management, including waste prevention, recycling, disposal, along with litter and marine debris clean-up. Certain plastics would be required to have minimum post-consumer recycled content. The proposal was introduced in the 2019 legislative session.

Electronics and Mercury Lighting

SPU continued promotion of manufacturer financed take-back, recycling, and reuse programs. The E-Cycle WA program collected approximately 1,678 tons of televisions, computers, laptops, and monitors within Seattle. 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. The Light Recycle Washington program collected approximately 416,901 mercury containing fluorescent tubes, compact fluorescent lamps, or other mercury-containing bulbs, totally about 68 tons, from Seattle residents and businesses at 49 locations. As moderate risk waste, mercury lighting is not included in this Report's calculations.

Solar Photovoltaic Modules

SPU participated on an advisory group to assist the Department of Ecology to develop guidance to producers for complying with the Nation's first producer responsibility law for photovoltaic modules. 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.

Love Food, Stop Waste

More than 1,000 residents were educated about ways to prevent wasted food and save money through 21 education events that included presentations, classes, and tabling at community events, farmer's markets, and grocery stores. A marketing campaign resulted in 656,965 impressions via Cable TV, 1,702 clicks through digital ads, and 1,872 clicks through social media ads. The work to transcreate *Love Food, Stop Waste* content into Chinese was completed, and work to transcreate it into Spanish began.

Secure Medicine Return

SPU continued promotion of the manufacturer financed Secure Medicine Return. In 2018, 37 Secure Medicine Return locations collected unused prescription medications throughout Seattle and the most recent data shows 11,621 pounds of pharmaceuticals were collected.

Food Waste Prevention

Seattle is committed to the West Coast goal of reducing wasted food by 50% by 2030. The City joined other Pacific Coast Collaborative (PCC) partners – Washington, Oregon, California, British Columbia, Portland, San Francisco, Oakland and Vancouver, BC – in this commitment, which was announced at the Global Climate Action Summit in San Francisco, CA. PCC partners will develop city and state-specific strategies to reduce waste. A central part of this work in 2019 will focus on engaging the food industry, retailers, and brand manufacturers to measure and cut their wasted food by 50% by 2030.

Greener Gardening

The Garden Hotline made 8,529 public contacts. Additional education was provided through community events and classes, with 78% of those events being held in diverse communities. Volunteers with the Master Composter Sustainability Steward program provided over 1,099 hours of volunteer time. Outreach also included new online videos that educate residents on common yard care problems and environmentally safe solutions. Integrated Pest Management trainings were attended by 258 landscape professionals, including those who attended the trainings conducted in Spanish.

Clothing Waste Prevention

Textiles comprise approximately 4% or over 35,000 tons in Seattle and King County's combined waste streams. While donating used and damaged textiles for reuse and recycling ("Threadcycling") is one part of the solution, greater impacts could come from fostering more localized repair, reuse, and upcycling. SPU teamed up with King County Solid Waste, Zero Waste Washington, and Washington State Recycling Association to host "The State of Textile Recycling, Reuse, and Repair Today" at REI's flagship store in 2018. The event brought together over 100 solid waste professionals with designers, repair, and retail businesses (including REI), along with community-based organizations and researchers. Presentations and a panel discussion pointed to the challenges of finding industrial sewers (as in people who sew, not wastewater drains) in Seattle, the inherent difficulties of addressing inexpensive, high-volume fast fashion, and the opportunities in working together.

REACHING THE GOAL OF ZERO WASTE

Waste prevention is Seattle's top priority in reducing the amount of waste sent to landfills, and Seattle customers continue to embrace waste prevention. This aligns with the state priorities of waste prevention first, followed by reuse, and then recycling. The Department of Ecology announced in May 2019 that they are changing their key metrics from tracking the state-wide recycling rate to tracking the overall waste generation to encourage waste prevention. At the May 2019 meeting of the State Solid Waste Advisory Committee, Ecology stated that: "*Focusing on the recycling rate is not helping reach waste reduction goals. While recycling has many environmental benefits and remains a key part of any waste management strategy, waste reduction, or not producing waste in the first place, is far more impactful.*" Seattle is committed to doing the following in 2019 to promote waste prevention across customer sectors.

IN 2019, SEATTLE WILL:

- Educate residents on how waste prevention, repair, reuse, buying used, and conscious consumption can reduce costs of material goods for residents and businesses.
- Educate business owners on how to lower garbage collection costs by developing partnerships with food rescue agencies, switching to durable service ware, and engaging in other waste prevention activities.
- Educate business owners and employees on how reusing materials, simplifying procedures, eliminating single-use items, and simplifying their approach to materials management can reduce direct costs and foster a more efficient business model to reduce costs.
- Educate business owners around the benefits of providing straws, utensils, condiments, and other single-use items only if requested, including how they can save money and offset increased costs of compliance with single-use food service packaging rules.
- Fund community waste prevention and reuse efforts that result in free and low-cost resources for low-income and homeless community members.
- Increase rate payer value through leveraging community partnerships.
- Support the creation of jobs and job skills training aligned with waste prevention.
- Develop new partnerships and explore innovative solutions to reduce wasted surplus food from food businesses. These efforts will be in partnership with organizations working to address food insecurity in Seattle.
- Provide in-language education and technical assistance, including waste prevention, to immigrant and refugee-owned businesses, supporting 12 languages.
- Continue to transcreate waste prevention educational materials into additional languages.
- Conduct Sustainable Landscaping trainings for landscape professionals, including classes in Spanish.
- Post in-language guides online to educate business owners and employees of safer alternatives to toxic pesticides, fertilizers, solvents and cleaning supplies.
- Reach more business owners and their employees in all Seattle's neighborhoods and communities with educational information provided in several languages, increasing the cultural relevance of waste prevention at home or at work.
- Continue to advocate for product stewardship programs that provide more accessible and convenient services across the city.
- Work with community partners to provide in-language and culturally appropriate food waste prevention education to immigrant and refugee and African American communities.
- Fund community organizations and businesses to increase equitable access to waste prevention opportunities and benefits.
- Support legislation that promotes waste prevention approaches.

2018 SPOTLIGHT

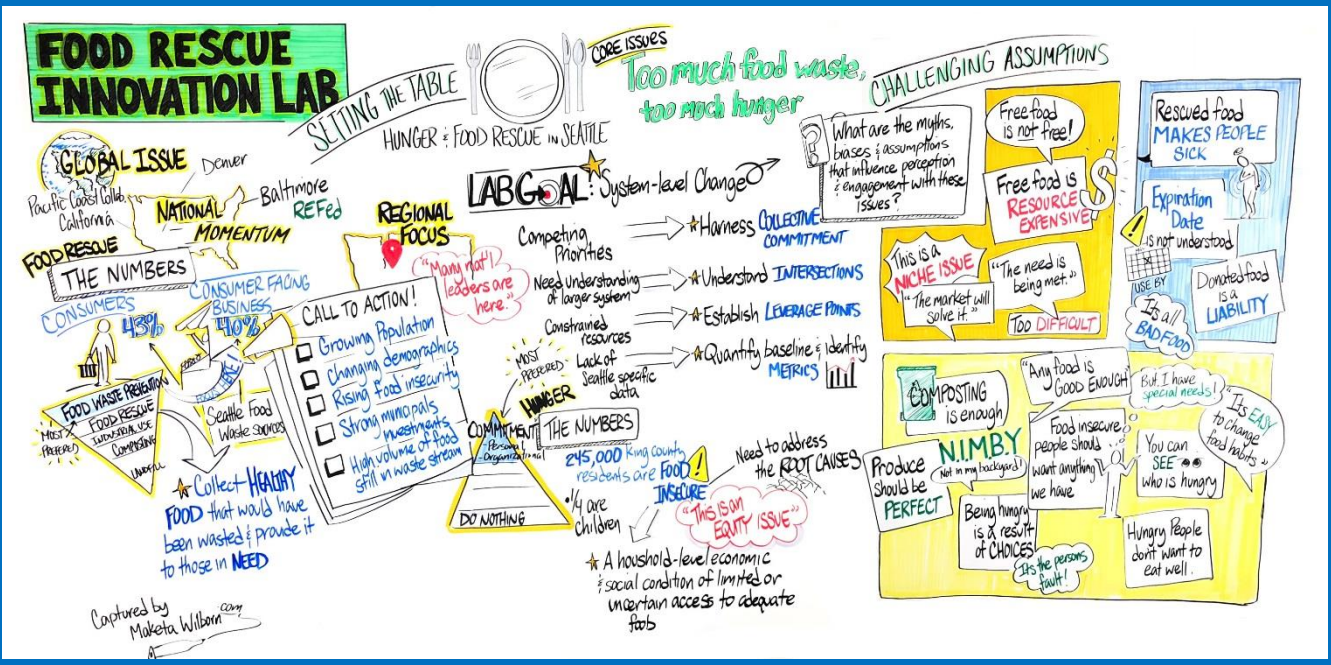
FOOD RESCUE INNOVATION LAB

While composting has become a well-established ethic in Seattle, it is just one solution to how we manage food waste. Some of the food that goes uneaten doesn't belong in the compost just yet – it is still edible, safe, and nutritious. Some part of this food is surplus – food that was never sold at restaurants, grocery stores, hospitals, schools, or dining facilities.

That is where food rescue comes in. Rather than compost, many Seattle-area businesses are donating edible, safe, and nutritious foods to those experiencing food insecurity. It's estimated that one in eight Washington residents are food insecure; meaning they routinely run out of food or money for food. Food rescue not only keeps edible, safe food out of the waste stream, it allows local businesses to re-distribute food to local food programs.

In 2018, SPU and Mary's Place, a local non-profit organization that provides shelter and services to support women, children, and families on their journey out of homelessness, hosted the first *Food Rescue Innovation Lab Invitational*. This one-day event brought together some of the region's most diverse expertise into one room to better understand the human impact of hunger in our community. The *Food Rescue Innovation Lab* explored opportunities to collaborate and identify areas where innovation and partnerships could further develop food rescue in Seattle.

SPU and Mary's Place will host more Labs in 2019 and continue to deepen partnerships around food rescue and food security.



2018 SPOTLIGHT

Innovator of the Year: Seattle Public Utilities

SPU won the Waste Dive Innovator of the Year Award for the new solid waste collection contracts that introduced all 100% renewable fuel vehicles. The new 10-year collection contracts are worth over $850 million and save $5M a year over the term of the collection contracts. The new services, with Waste Management and Recology, went into effect on April 1st of 2019. Waste Management's new collection fleet uses only renewable natural gas and Recology uses all renewable diesel. SPU contractors will also pilot electric vehicles, including two Class 8 heavy duty electric route trucks, four Class 6 midsize electric trucks for small routes and container delivery, and 10 electric supervisor pick-up trucks and support vehicles. Seattle will become one of the first cities in the country to have regular route services by electric trucks.

CONSTRUCTION & DEMOLITION DEBRIS (C&D)

The Construction and Demolition (C&D) sector is comprised of C&D materials that are either self-hauled by C&D contractors or hauled by a third-party drop box service, the City's contracted C&D waste hauler, or in intermodal containers to private recycling facilities for sorting or to private transfer stations operated by Waste Management or Republic Services for transport to disposal.

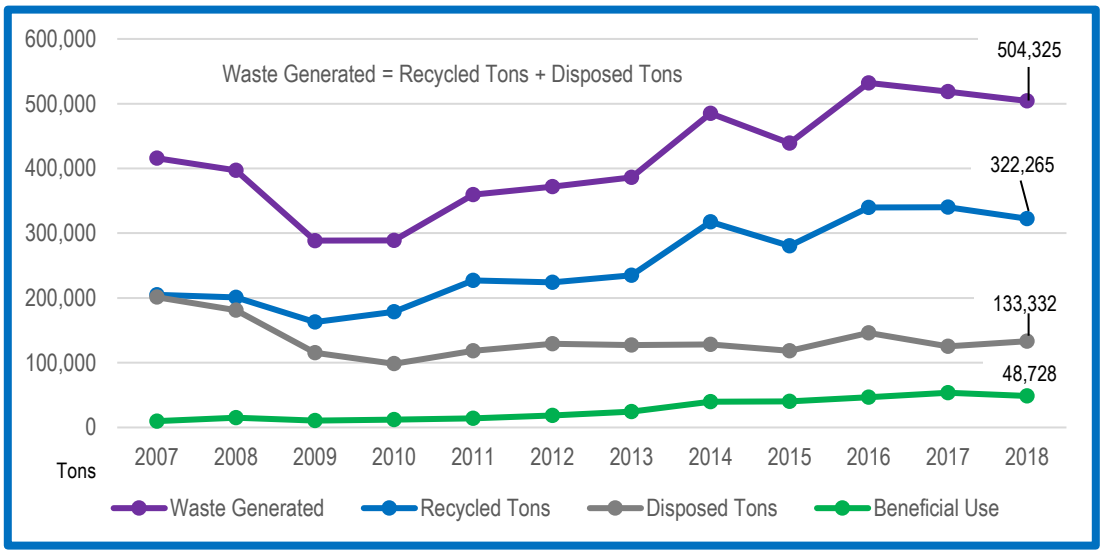
C&D MATERIALS DEFINED:

- **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.
- **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.

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.

CONSTRUCTION AND DEMOLITION DEBRIS TONS WASTE GENERATION, RECYCLING, AND DISPOSAL

FIGURE 8



2020 C&D Recycling Goal of 70%

2018 C&D Recycling Rate = 63.9%

Down 1.7% from 2017

C&D WASTE RECYCLING AND DIVERSION RATES

C&D generation generally correlates closely with economic and building activity cycles and has increased significantly over the last decade. However, in 2018 total C&D tonnage generated declined from 2017 by 14,386 tons, with both Recycling and Beneficial Use tonnages decreasing. Unfortunately, C&D debris requiring disposal increased in 2018 by 8,258 tons. As a result, the 2018 C&D sector Recycling Rate decreased by 1.7 percentage points to 63.9% and the 2018 C&D sector Diversion Rate decreased by 2.3 percentage points to 73.6%.

The current recycling goal for the C&D sector only considers materials diverted to recycling end markets and does not consider Beneficial Use end markets, such as clean wood to hog and boiler fuel as being recycled. The C&D sector will need to increase recycling by over six percentage points to achieve its sector-specific recycling goal of 70%. In terms of 2018 C&D tons, customers would have needed to recycle more than 30,000 extra tons to reach the 2020 sector's recycling goal of 70%.

2018 PROGRAM HIGHLIGHTS – C&D DEBRIS

Facility Certification Program

Eleven mixed C&D recycling facilities in the region participated in the City's facility "certification" and King County's "designated" facility programs, which include monthly reporting and quarterly residual sampling for compliance with material disposal bans. Three of the facilities are located within Seattle city limits, providing in-City drop-off opportunities for processing of commingled C&D. Seattle continues to post the quarterly and annual recycling rates for participating facilities on the SPU website.

Waste Diversion Reports

Permit holders for projects valued at more than $75,000 and greater than 750 square feet are required to submit a Waste Diversion Report following completion of their construction or demolition project. The report lists quantities and destination of materials generated during the project. Seattle now has a Waste Diversion Reporting compliance rate of 62% and has documented increased amounts of materials that are being salvaged and recovered from construction projects.

Salvage Assessment and Monitoring

SPU continued to receive Salvage Assessments prior to building demolition to identify additional salvage and reuse opportunities. Completing these reports builds awareness amongst building owners and construction professionals about opportunities to save money and divert materials through salvage and, in the case of whole building demolitions, connects them to salvage retailers who can resell the reusable items.

REACHING THE 2022 RECYCLING GOAL

It is challenging to make gains in the C&D sector given the high level of construction activity our region continues to support, the low value and volatile markets for C&D materials, and time and space constraints at jobsites. Seattle plans the following activities in 2019 to increase C&D recycling.

IN 2019, SEATTLE WILL:

- Restart field monitoring of job sites for compliance with disposal bans. Jobsite monitoring will include visits to demolition sites that use intermodal containers for direct transfer to trains for disposal.
- Coordinate with King County on enforcement of disposal bans at solid waste transfer stations.
- Monitor local processing infrastructure and end markets for plastic film, carpet, and asphalt shingles to determine whether it is possible to implement disposal bans in 2020, as is now planned.
- Send reminder letters to local hauling companies that only Waste Management can haul C&D waste (i.e., garbage) in drop boxes, that they are required to provide for the collection of garbage on-site, and that recycling drop boxes should have low amounts of non-recyclable materials.
- Work with King County and a newly established Deconstruction Advisory Group to investigate ways to increase deconstruction for single-family homes as an alternative to traditional demolition.
- Work with King County to support markets for salvaged lumber, including incorporating in new construction, and the establishment of a salvaged lumber warehouse.

CONCLUSION

While there have been many challenges presented in 2018, especially those arising from China's restrictions on the import of mixed waste paper and mixed plastics, there continues to be news to celebrate, including:

- Seattle's 2018 recycling rate dropped less than half a percentage point from 2017 despite the drastic changes in recyclable material markets and customer perceptions of what is recyclable.
- The overall waste generation rate, which includes garbage, recycling, and composting, dropped by 0.4% over the previous year, even though population continues to increase, housing continues to shift away from single-family to multifamily, and economic activity remains strong.
- The residential per capita waste generation rate (i.e., pounds of waste per person per day generated) is at an all-time low of 2.16 pounds.
- The residential per capita disposal (i.e., materials going to landfill) has maintained at the all-time low of 0.81 pounds per person per day.
- The benefits of waste prevention and product stewardship programs continue to be realized.
- Disposal is not increasing at a rate that would be expected with Seattle's continued population growth and economic activity, with disposal only increasing by 2,4000 tons, a 0.7% increase.
- The impacts of China Blue Skies and fluctuating international recycling markets were minimized by Seattle's ability to respond quickly, resulting in none of Seattle's recyclable materials collected for recycling needing to be landfilled and all of the materials being recycled.
- Seattle retail food businesses and food manufacturing businesses diverted 18,000 tons of food waste to animal feed and donated over 3,500 tons of safe, nutritious, and edible food to local agencies addressing food insecurity in Seattle.

Seattle continues to step up to the challenges presented, adapting to changes in the solid waste industry, serving as a nationwide leader to encourage innovation and change, and customers are doing their part to prevent waste and recycle every day. However, Seattle has much more to do to achieve its recycling goals and continue its progress toward preventing waste.

Please see Seattle's Solid Waste Plan for more background on waste prevention and recycling planning. More detailed sector and historical information may be found on Seattle's web site at Solid Waste Reports--Seattle Public Utilities, including: Prior annual recycling reports; composition studies by sector/garbage/recycling; quarterly and yearly tons for garbage, recycling, composting, and C&D; recycling market and Seattle recycling value; and, surveys.

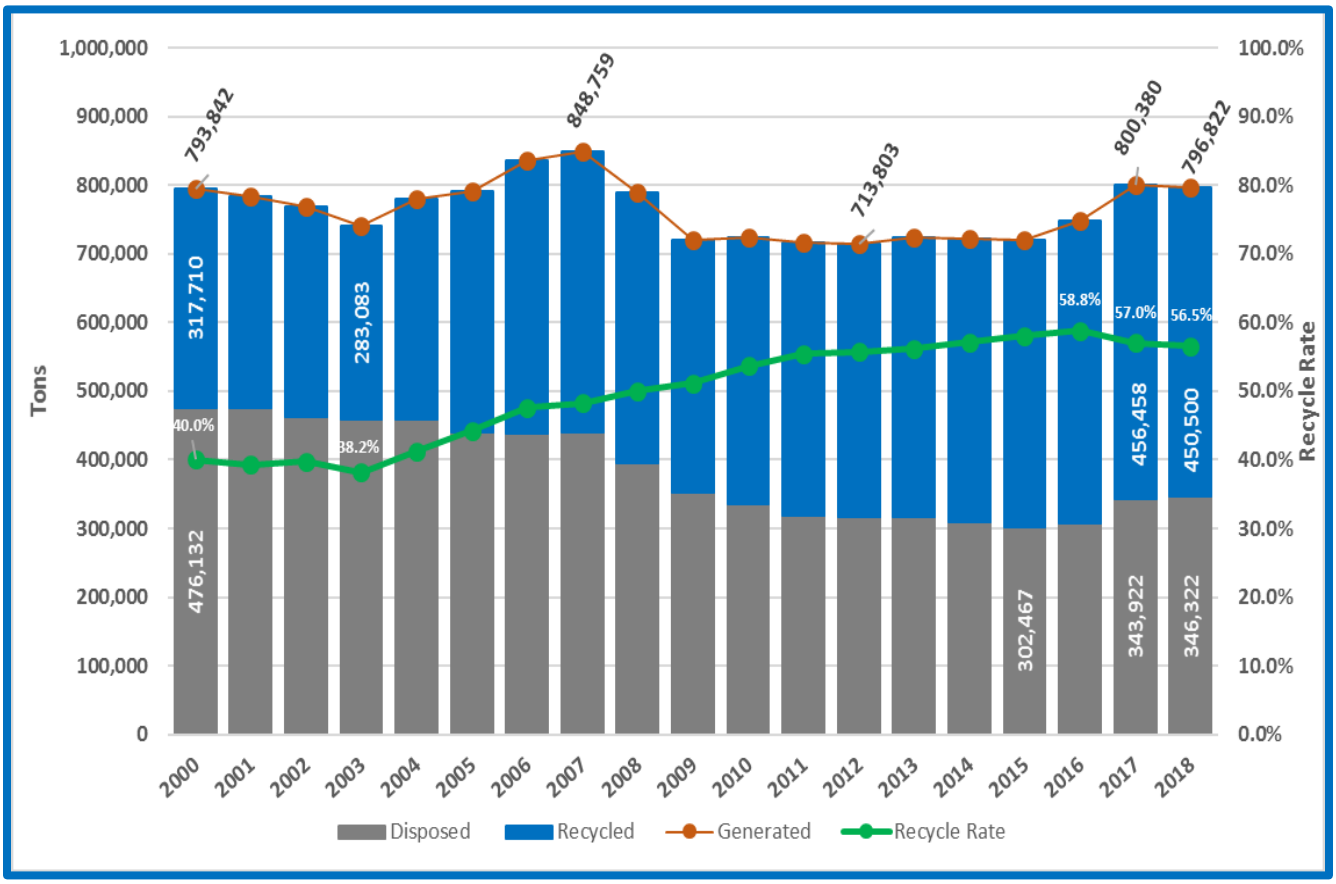
Waste Prevention and Recycling continue to be sound investments by Seattle, as well as key parts of Seattle's climate action strategy.

Attachment A

2018 Waste Prevention & Recycling Report Tonnage Data

2000-2018 Overall MSW Tons & Recycling Rate
Total Waste Generated, Disposed, & Recycled

Figure 9



2000-2018 MSW Tons & Percentage Change
Overall Generated & Disposed

Table 1

Year	Generated	Percent Change	Disposed	Percent Change
2000	793,842	NA	476,132	NA
2001	782,809	-1.4%	475,270	-0.2%
2002	768,346	-1.8%	462,996	-2.6%
2003	741,094	-3.5%	458,011	-1.1%
2004	780,044	5.3%	458,405	0.1%
2005	790,457	1.3%	440,693	-3.9%
2006	836,499	5.8%	438,381	-0.5%
2007	848,759	1.5%	439,407	0.2%
2008	789,607	-7.0%	394,845	-10.1%
2009	719,424	-8.9%	351,689	-10.9%
2010	724,468	0.7%	335,570	-4.6%
2011	715,996	-1.2%	319,341	-4.8%
2012	713,803	-0.3%	315,983	-1.1%
2013	724,383	1.5%	317,201	0.4%
2014	721,269	-0.4%	309,515	-2.4%
2015	720,904	-0.1%	302,467	-2.3%
2016	747,964	3.8%	308,304	1.9%
2017	800,380	7.0%	343,922	11.6%
2018	**796,822**	**-0.4%**	**346,322**	**0. 7%**

2000-2018 Recycling Rates
MSW All Sectors

Table 2

Year	Single-family	Multifamily	Res Total	Self-haul	Commercial	Overall
2000	58.00%	17.80%	47.81%	17.20%	41.60%	40.00%
2001	57.00%	22.00%	48.48%	17.80%	39.60%	39.30%
2002	57.50%	21.50%	48.34%	18.10%	40.70%	39.70%
2003	57.50%	22.20%	48.35%	18.10%	37.30%	38.20%
2004	58.90%	22.20%	49.42%	18.80%	42.50%	41.20%
2005	61.40%	25.20%	52.11%	19.20%	46.60%	44.20%
2006	64.00%	26.30%	54.28%	18.80%	51.70%	47.60%
2007	64.80%	27.60%	55.14%	19.20%	52.50%	48.20%
2008	65.40%	28.30%	55.86%	18.40%	54.70%	50.00%
2009	68.70%	27.00%	58.42%	16.70%	54.90%	51.10%
2010	70.30%	29.60%	60.27%	13.50%	58.90%	53.70%
2011	70.50%	28.70%	60.15%	13.10%	61.40%	55.40%
2012	71.10%	32.20%	60.98%	12.50%	61.40%	55.70%
2013	70.80%	34.30%	60.91%	12.20%	62.90%	56.20%
2014	71.10%	34.60%	60.93%	10.60%	62.20%	57.10%
2015	74.30%	36.80%	63.93%	10.40%	62.30%	58.00%
2016	73.87%	38.57%	64.02%	10.95%	64.03%	58.78%
2017	73.54%	36.78%	63.79%	10.63%	65.03%	57.03%
2018	**72.55%**	**36.40%**	**62.75%**	**10.42%**	**65.10%**	**56.54%**
2022 Goal	**83%**	**54%**	**75%**	**46%**	**75%**	**70%**

2000-2018 Tons
MSW All Sectors

Table 3

Year	Generated	Disposed	Recycled	Recycle Rate
2000	793,842	476,132	317,710	40.00%
2001	782,809	475,270	307,539	39.30%
2002	768,346	463,086	305,260	39.70%
2003	741,094	458,011	283,083	38.20%
2004	780,044	458,389	321,655	41.20%
2005	790,457	440,693	349,763	44.20%
2006	836,499	438,381	398,118	47.60%
2007	848,759	439,407	409,352	48.20%
2008	789,608	394,748	394,860	50.00%
2009	719,424	351,689	367,735	51.10%
2010	724,468	335,570	388,898	53.70%
2011	715,996	319,341	396,655	55.40%
2012	713,803	315,966	397,837	55.70%
2013	724,383	317,258	407,125	56.20%
2014	721,269	309,515	411,754	57.10%
2015	720,704	302,467	418,237	58.00%
2016	747,964	308,292	439,672	58.78%
2017	800,380	343,922	456,458	57.03%
2018	**796,822**	**346,322**	**450,500**	**56.54%**

2000-2018 Single-Family Tons Generated, Disposed, & Recycled

Table 4

Year	Generated	Disposed	Recycled	Recycling 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**	**72.6%**

2000-2018 Multifamily Tons Generated, Disposed, & Recycled

Table 5

Year	Generated	Disposed	Recycled	Recycling 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%
2018	**78,245**	**49,760**	**28,485**	**36.4%**

2000-2018 Residential Per Capita Disposed, Recycled, & Generated

Table 6

Year	Tons			Recycle Rate	Population	Per Capita Pounds per Person per Day		
	Generated	Disposed	Recycled			Disposed	Recycled	Generated
2000	279,412	145,832	133,580	47.81%	563,286	1.42	1.30	2.72
2001	280,593	144,559	136,034	48.48%	567,491	1.40	1.31	2.71
2002	276,618	142,910	133,708	48.34%	572,854	1.37	1.28	2.65
2003	277,897	143,532	134,365	48.35%	574,530	1.37	1.28	2.65
2004	281,772	142,527	139,245	49.42%	576,906	1.35	1.32	2.68
2005	281,000	134,557	146,442	52.11%	579,779	1.27	1.38	2.66
2006	292,491	133,721	158,770	54.28%	587,755	1.25	1.48	2.73
2007	**297,235**	**133,341**	**163,895**	**55.14%**	**594,339**	**1.23**	**1.51**	**2.74**
2008	288,112	127,160	160,952	55.86%	599,055	1.16	1.47	2.64
2009	285,539	118,725	166,814	58.42%	603,155	1.08	1.52	2.59
2010	287,159	114,097	173,062	60.27%	608,506	1.03	1.56	2.59
2011	283,006	112,772	170,234	60.15%	611,945	1.01	1.52	2.53
2012	285,579	111,420	174,159	60.98%	616,345	0.99	1.55	2.54
2013	283,552	110,839	172,724	60.91%	626,444	0.97	1.51	2.48
2014	287,181	112,211	174,970	60.93%	640,342	0.96	1.50	2.46
2015	282,675	101,972	180,703	63.93%	662,239	0.84	1.50	2.34
2016	288,282	103,735	184,547	64.02%	686,635	0.83	1.47	2.30
2017	290,859	105,315	185,544	63.79%	713,531	0.81	1.42	2.23
2018	**288,534**	**107,485**	**181,049**	**62.75%**	**730,400**	**0.81**	**1.36**	**2.16**

2000-2018 Commercial Tons Generated, Disposed, & Recycled

Table 7

Commercial	Generated	Disposed	Recycled	Recycling 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	**395,738**	**138,009**	**257,729**	**65.1%**

2000-2018 Self-haul Tons Generated, Disposed, & Recycled

Table 8

Year	Generated	Disposed	Recycled	Recycling 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%**

2007-2018 Construction & Demolition (C&D) Tons Generated, Disposed, Recycled, & Beneficial Use

Table 9

Year	Total Generated	Disposed*	Recycled	Beneficial Use	Recycle Rate	Diversion Rate
2007	415,801	201,156	204,907	9,738	49.3%	51.6%
2008	397,053	181,241	200,851	14,961	50.6%	54.4%
2009	288,550	115,446	162,742	10,362	56.4%	60.0%
2010	288,967	98,309	178,794	11,864	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	439,055	118,514	280,205	40,336	63.8%	73.0%
2016	532,126	146,139	339,478	46,509	63.8%	72.5%
2017	518,711	125,074	340,072	53,564	65.6%	75.9%
2018**	**504,325**	**133,332**	**322,265**	**48,728**	**63.9%**	**73.6%**

*** Estimated numbers may be revised based on King County and Department of Ecology Reports*

Attachment B
Letter from SPU's
Solid Waste Advisory Committee

Seattle Public Utilities

Solid Waste Advisory Committee (SWAC)

June 13, 2019

Councilmember Lisa Herbold
Chair, Civil Rights, Utilities, Economic Development & Arts
PO Box 34025
Seattle, WA 98124-4025

Dear Councilmember Herbold and Committee Members,

In June 2019, the Seattle Public Utilities (SPU) Solid Waste Advisory Committee (SWAC) members had the opportunity to review SPU's Draft of the 2018 Annual Waste Prevention and Recycling Rate Report. We commend SPU for altering the name of this annual report to highlight the importance of waste prevention in the City's overall materials management strategy. SPU continues to work towards its goal of 70% landfill diversion by 2022, and SWAC strongly encourages sustaining this effort.

In 2018, the City achieved a 56.5% diversion rate, which is a 0.5% decrease from 2017. While City recycling rates trend an increase over the years, the 2018 recycling rate is still short of the 2022 goal. A few factors likely influence Seattle's most recent recycling rate: market effects from China's Blue Skies Initiative, the decrease in weight for many recyclables, and education and outreach to Seattle's diverse population.

To effectively continue towards the 70% diversion goal, SWAC recommends that SPU focus on the three sectors below:

Self-haul

Given that recycling rates at self-haul facilities (10.4% for 2018) are the lowest of any sector and furthest from the 2022 goal, we recommend evaluation of further opportunities to recover materials for recycling or reuse at the transfer stations.

Multifamily Recycling

Multifamily recycling rates have lagged behind single family recycling rates for many years. We affirm SPU's efforts in 2018 to engage multifamily building owners and managers in making recycling accessible to all residents, and we recommend continuing this outreach to include medium and small size multifamily buildings. Further, we affirm consideration 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 goal by 2020. 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:

- Strengthen recycling and reuse options for C&D materials at self-haul facilities. In 2019, there is opportunity to incorporate reusable building materials collection into the STS II facility design, providing a market for salvaged materials.
- Strengthen the current salvage assessment requirement for demolitions to incentivize actual salvage for reuse.
- Add a requirement for deconstruction (or minimum recovery for reuse) where high recovery potential is identified.

With new and historic challenges influencing materials management, we advise that SPU reconsiders the metrics for waste prevention and generation to help the City achieve its diversion goal and to engage a broader audience. SPU should continue to track, measure, and set goals around waste generation per capita, as it is the single most effective measure of waste reduction efforts. SWAC supports the continuation of waste prevention programs such as Love Food, Stop Waste, E-Cycle WA, Secure Medicine Return, and Food Rescue Innovation Lab. In addition, SPU should continue to play an active role in supporting legislation that bolsters waste prevention strategies and product stewardship policies, like the ban on single-use plastic straws and utensils.

SWAC recommends SPUs ongoing participation and support of the regional Responsible Recycling Task Force and the short and long-term goals it has set out to achieve, especially removing plastic bags from curbside recycling and harmonizing recycling programs regionally to minimize contamination and confusion.

SWAC supports SPU's 2018 achievements and efforts in integrating race and social justice and resiliency frameworks into their planning processes, programs, and projects. SWAC recommends the continued expansion of community collaboration, specifically with underrepresented and marginalized communities in developing relevant and relatable waste prevention knowledge, education, transcreated resources, and economic development opportunities, such as the Waste-Free Communities grant. SWAC encourages the continued use of SPU's Community Connections in the planning process across all sectors.

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

Sincerely,

Dirk Wassink: Chair
Alessandra Pistoia: Vice Chair

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: Bruce Harrell, President, Seattle City Council
Sego Jackson, Strategic Advisor, Waste Prevention & Product Stewardship
Sheryl Shapiro, Program Manager, Community Advisory Committees