

2017 Recycling Rate Report



Credit: Sajad Mohamad



**Seattle
Public
Utilities**

July 1, 2018

2017 RECYCLING RATE REPORT

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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. This 2017 City of Seattle Annual Recycling Rate Report describes how the City's recycling rate is calculated, provides sector-specific recycling rates for 2017, 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 and a separate recycling rate is calculated.

Seattle's residents continue to make the shift 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 from 2.74 pounds in 2007 to an all-time low of 2.23 pounds per person per day in 2017. In addition, city-wide per capita disposal – the materials being sent to the landfill – has been steadily decreasing since 2000 and is at an all-time low of 0.81 pounds per person per day. This is something to celebrate – the continued commitment of Seattle's residents doing their part to prevent waste!

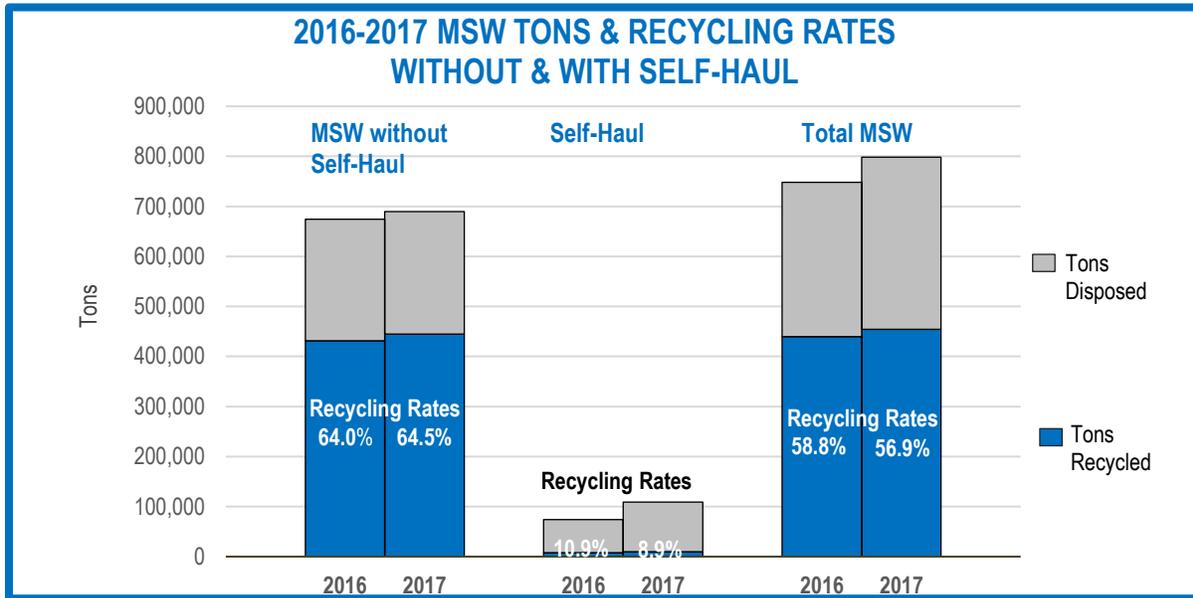
Waste prevention focuses on reducing the amount of waste generated and is Seattle's top priority in reducing the amount of waste sent to landfills. Seattle has embraced waste prevention as indicated above, and this is even more remarkable given the significant population growth and economic activity over the last few years. Seattle has added approximately 120,000 new residents in the last decade, many moving into multifamily units where barriers to recycling and composting are numerous. Economic growth is apparent by the number of cranes dotting the Seattle skyline. Typically, such increases in population and economic activity have an impact on waste generation and disposal rates; however, Seattle's solid waste customers' commitment to waste prevention and recycling has helped keep disposal tonnages down.

Seattle's recycling rate is weight-based and is calculated by determining the percentage of Municipal Solid Waste (MSW) diverted from the landfill by reuse, recycling, and composting. In 2017, Seattle recycled 454,352 tons of material, an increase of 3.3%, or 14,680 more tons recycled than in 2016. Although Seattle set a new recycling tonnage record in 2017, the City's MSW recycling rate decreased from 58.8% in 2016 to 56.9% in 2017, or by 1.9 percentage points. One reason the City's overall recycling rate is lower in 2017 is the increased flow of self-haul tons due to the reopening of Seattle's North Transfer Station (NTS) at the end of 2016. During 2014, 2015, and 2016 while the NTS was rebuilt, most of the self-haul tons that previously flowed through the NTS were diverted out of the City to King County's transfer station in Shoreline, Washington. With the reopening of NTS, this material flowed back into the City in 2017. Additionally, Seattle's economic boom has caused an increase in construction and demolition activities, resulting in additional C&D debris, mixed with garbage, being delivered to City transfer stations instead of privately-owned C&D processing or disposal facilities. Once C&D debris is commingled with garbage, it is difficult to separate out the recycling at the transfer stations. This is evidenced by a self-haul recycling rate of approximately 9% compared with much higher rates in the other three sectors that make up the MSW recycling rate. These C&D waste materials delivered to a City transfer station are captured in the MSW tonnages, not in the C&D tonnages, which impacts the City's overall MSW recycling rate.

Figure 1 below shows the impact that the increased self-haul tonnage has on the overall MSW recycling rate – if the Self-haul sector's tons were removed from the calculation, the overall MSW recycling rate would have increased by half a percentage point.

2017 RECYCLING RATE REPORT

FIGURE 1



2017 HIGHLIGHTS

As mentioned above, there is great news in Seattle's solid waste data, including:

- Seattle set an all-time recycling tonnage record in 2017, diverting 454,352 tons (a 3.3% increase from 2016).
- Seattle's recycling rate has grown 30.1 percentage points from the 1988 recycling rate of 26.8%, when data was first gathered, to the current 2017 recycling rate of 56.9%.
- The residential per capita waste generation rate (i.e., pounds of waste per person per day generated) is at an all-time low, dropping almost 19% over the last decade – from 2.74 pounds in 2007 to 2.23 pounds in 2017.
- City-wide per capita disposal (i.e., materials going to landfill) has decreased steadily since 2000 to an all-time low of 0.81 pounds per person per day.
- Disposal is staying low, even as Seattle experiences significant population and economic growth.
- The benefits of waste prevention and product stewardship programs are being realized.

NEXT STEPS

The achievements listed above are remarkable! Nonetheless, Seattle has much more to do to achieve its recycling goals and continue its progress toward preventing waste. Some of the next steps include:

- Coordinating recycling and composting messaging for customers across sectors, so all customers get consistent messages about responsible recycling, waste prevention, and composting.
- Partnering with community groups to increase customers' ability to recycle and compost.
- Expanding outreach and educational efforts on responsible recycling and composting 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.
- Improving recycling opportunities and outcomes for specific waste categories at the City's transfer stations, such as clean wood, cardboard, and C&D waste.

Seattle's continued commitment to environmentally responsible solid waste management will help the City achieve the recycling goals, as well as continue to show national leadership in waste prevention.

INTRODUCTION

This 2017 City of Seattle Annual Recycling Rate Report describes how the City’s recycling rate is calculated and provides additional background on Seattle’s waste prevention, reuse, and recycling programs.

This Report also provides information on factors that impact the amount of waste generated, recycled, 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 progress in achieving its city-wide recycling goal of 70%, waste prevention and product stewardship efforts, 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, which has a separate timeline.

SCOPE OF THE REPORT



About the Recycling Rate (pg. 3)

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 Seattle, 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 includes information on the amount of waste generated, recycled, composted, and disposed.

ANNUAL RECYCLING RATE 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 eleventh Annual Recycling Rate Report for the City of Seattle.



2017 RECYCLING RATE 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 Recycling Rate (pg. 9)

This section provides information on the amount of waste generated, recycled, and disposed of in the Single-family Residential sector and includes program highlights for 2017.



Multifamily Residential Recycling Rate (pg. 11)

This section provides information on the amount of waste generated, recycled, and disposed of in the Multifamily Residential sector and includes program highlights for 2017.



Commercial Recycling Rate (pg. 14)

This section includes information on the amount of waste generated, recycled, and disposed of by Commercial businesses. This section also includes 2017 program highlights and notes economic growth and increased employment impacts.



Self-haul Recycling Rate (pg. 16)

This sector includes 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 2017 program highlights.



Waste Prevention and Product Stewardship (pg. 20)

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. 26)

This section provides an overview of Construction and Demolition (C&D) debris, which are typically self-hauled by construction 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 City’s overall MSW recycling rate.



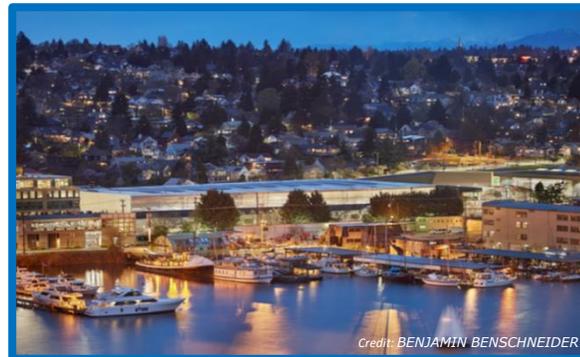
NOTE: 2017 Recycling Rate Report Tonnage Data is included as Attachment A (beginning on pg. 30) and the Letter from SPU’s Solid Waste Advisory Committee is included as Attachment B (pg. 41).

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

The recycling rate does not take into consideration the light-weighting of material or their volume. (See pg. 5)



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 since peaking in 2007, dropping from a peak of 2.74 pounds per person per day in 2007 to a low of 2.23 pounds per person in 2017. That's an 18.6% reduction over the last decade!

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, processed, and shipped to an end-user, who turns the materials into new products. Recycling includes bottles, cans, plastic containers, packaging, metals, clothing, cardboard, paperboard, newspaper, and several categories of paper.
- **Reuse** – Includes items that have been reused or donated for others to use.
- **Composting** – Includes yard debris, food scraps, and compostable paper/packaging.
- **Rescued or Recovered Food** – Includes food that is rescued or recovered 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 Local Hazardous Waste Management Program (LHWMP) manages Seattle's MRW. The LHWMP is a joint program supported and implemented by Seattle, King County, Public Health - Seattle and King County, and the Sound Cities Association.

Seattle Municipal Code prohibits disposal of HHW and SQGW in the garbage. 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.

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.

FACTORS THAT IMPACT 2017 RECYCLING RATES



~120,000 new
residents since 2007



Unprecedented
economic growth



North Transfer Station
re-opens increasing
self-haul tonnage



Light-weighting of
plastic and aluminum
containers means
higher volumes,
with lower weight

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 goals.

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 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

Population and Economic Growth

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. Over the last decade, Seattle has gained approximately 120,000 new residents. This population boom is partly due to Seattle being home to some of the fastest growing companies in the Nation.

Starting in 2009, Seattle experienced substantial growth in both population and economic activity. During its continued population and economic growth, Seattle managed to break the trend of sending more waste to the landfill, by recycling more and expanding participation in waste prevention programs.

Improved Data and Analysis of Composting

In 2017, Seattle improved the way composting (i.e., organic materials such as yard and food waste collected for recycling) tonnage data was tracked in the Single-family and Multifamily Residential sectors. Before 2017, single-family and multifamily composting data was reported by one of Seattle's contractors as a total of what was collected in both sectors. This necessitated apportioning composting tons between the two sectors using an estimation technique. In 2017, both contractors were able to provide the data separately for each sector. The result of this is that the tons composted in the Multifamily sector are lower than what was estimated in the years prior indicating that Seattle's estimate technique overestimated the multifamily share of the tons. The overestimation appears to be approximately 3,000 tons. The result of this is that the overestimate caused the prior years' Multifamily Recycling Rates to be higher than what they likely were.

Material Light-weighting

In 2017, Seattle recycled more plastic and aluminum containers than it had in previous years. However, this increase in container recycling isn't reflected in the recycling rate since plastic and aluminum containers have continued their trend of becoming lighter due to improved container design and engineering. This trend of lighter container weights is commonly referred to as "light-weighting." Under Seattle's weight-based recycling rate, the light-weighting of containers can result in decreasing recycling rates even when the individual number of containers recycled is increasing.



TAKE A CLOSER LOOK

Because the materials that can be recycled are getting lighter, Seattle must recycle significantly more material each year to achieve the previous year's recycling rate.

Housing Shifts

Over the past decade, Seattle's population growth has caused a significant shift from single-family residential units to multifamily residential units. In 2017, Seattle's housing market included about 170,806 multifamily units and even more are under construction. (See Attachment A, Charts 1 and 2 for the growth in multifamily units across the Urban King County area.) 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 environment and are often not in a location convenient to residents, which limits participation levels in recycling and composting programs. Multifamily buildings also experience higher levels of contamination in the recycling for a variety of reasons, including the lack of space for and ability to conveniently site recycling and composting containers.

Homelessness

In 2017, Seattle engaged in a city-wide homelessness response to address the growing number of homeless individuals living outdoors. The 2017 homelessness response collected 3,205 tons of materials from unsanctioned homeless encampments throughout the City. This included over 500 tons of contaminated soil and over 500 tons of wet blankets and soiled clothing. The waste from the city-wide homelessness response was applied to the Self-haul sector and accounted for 3% of the City's Self-haul waste generation. To reduce the amount of waste generated in unsanctioned homeless encampments, a new innovative program was developed to provide direct collection of waste from several unsanctioned encampments in the City. However, the program currently does not offer recycling services to unsanctioned homeless encampments due to the risks associated with contamination related to bio-wastes.

2017 RECYCLING RATE REPORT

Demographics

Seattle residents embrace our cultural diversity and recognize that eliminating racial, social, and cultural barriers are vital to reaching our recycling goals. Seattle has adopted service equity goals to ensure 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 public outreach information in several languages. SPU's goal is to provide educational and outreach services including educational materials that are not only translated into several languages, but also "transcreated" so that they are culturally relevant to each member of our diverse community, encouraging increased waste prevention, reuse, and recycling.

China's Operation Blue Skies

Prior to December 2017, most recycling collected in the United States was shipped to China to be manufactured into new products and packaging. However, in January 2017 China's government announced that it would no longer accept certain recycling by the end of 2017. The recycling targeted by China's Operation Blue Skies include mixed paper and mixed plastics. When China stopped accepting targeted materials, some municipal recycling programs were forced to send some of their recycling to the landfill. Most cities continue to struggle with the impacts of China's Operation Blue Skies and are having a tough time securing alternative markets for the recycling targeted. Although Seattle has experienced a negative fiscal impact from China's Operation Blue Skies, Seattle continues to move the targeted recycling to alternative markets and has not had to landfill recycling. Seattle's successful adaptation to China's Operation Blue Skies and the abrupt change in global recycling markets is partly due to Seattle's unique marketing structure and strategies. Unlike most local municipal recycling programs, Seattle has an agreement with our recycling processors that requires Seattle to assume all the financial risk associated with material marketing. While China's Operation Blue Skies has not as of early 2018 negatively impacted Seattle's recycling programs, it has had a negative impact on the revenues Seattle derives from recycling in comparison to previous years with stronger market prices.



TAKE A CLOSER LOOK

Although China's Operation Blue Skies did not impact Seattle's recycling programs in 2017, it illustrates just how connected Seattle's recycling programs are to the global economy. This provides an opportunity to recognize the connection between recycling and recycling markets and to act to improve the marketability and value of our recycling.

Seattle will continue to focus on material quality as well as material quantity. There is an opportunity to improve the value of the recycling by reducing contamination levels and by continuing to work to eliminate "wishful" recycling, or instances where residents place items in the recycling container because they "look" recyclable though are not. Seattle also has an opportunity to ensure recycling is responsibly recycled and emphasize the higher priorities of waste prevention and reuse, decreasing the materials that need to be recycled.



IMPROVING RECYCLING RATE CALCULATIONS

Seattle's waste and recycling 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 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, as recently happened in the Single-family and Multifamily sectors' composting allocations.

OVERALL MSW RECYCLING RATE

In 2017, Seattle recycled 454,352 tons of material, an increase of 3.3%, or 14,680 more tons recycled than in 2016. Although Seattle set a new recycling tonnage record in 2017, the City’s MSW recycling rate decreased from 58.8% in 2016 to 56.9% in 2017, or by 1.9 percentage points. Much of this decrease is due to higher disposal rates in the City’s Self-haul sector due to the opening of the City’s new North Transfer Station (NTS). During 2014, 2015, and 2016, most of the self-haul tonnage that previously flowed through the NTS was diverted out of the City to King County’s transfer station in Shoreline, Washington. This tonnage was not captured in those years, and thus, the recycling rates from those years were overstated. Below is an overview of the MSW recycling rate (See *Figure 2*), followed by an overview of residential recycling highlighting how the population continues to increase, while generation has leveled off and recycling has increased (See *Figure 3*).

2000-2017 OVERALL MSW TONS TOTAL WASTE GENERATION, RECYCLING, AND DISPOSAL

FIGURE 2

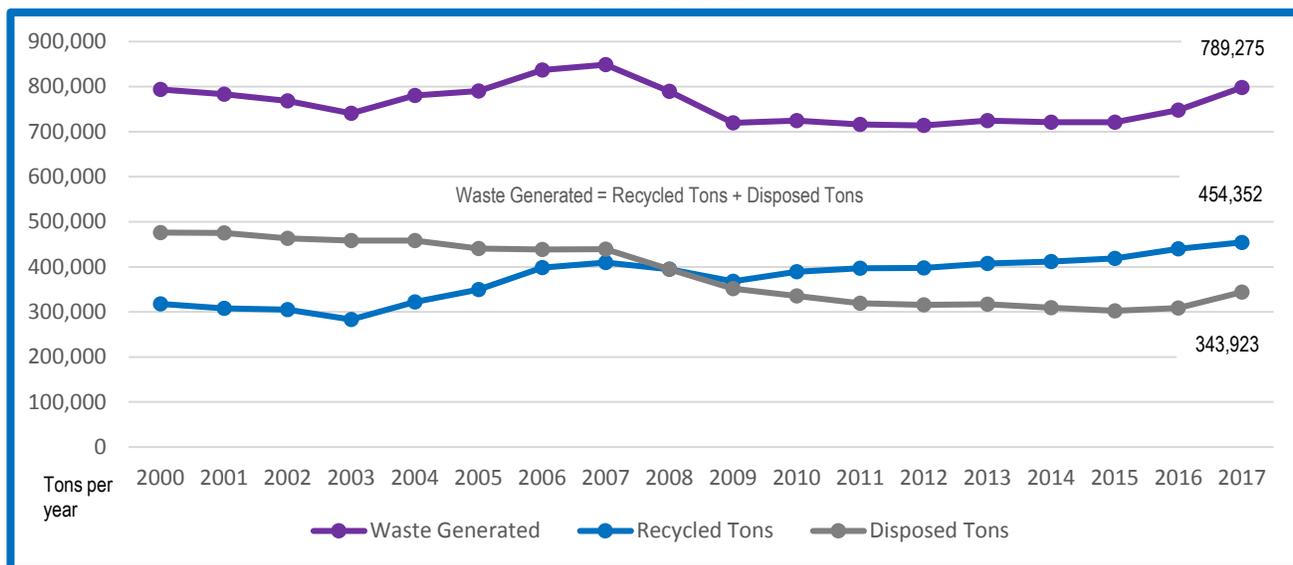


Figure 2 combines data from all MSW sectors and shows that despite significant population and economic growth over the last ten years, Seattle residents and businesses continue to recycle more year after year. Population and economic growth can have a negative effect on recycling, as new residents and employees adapt to new recycling and waste diversion programs. Additionally, rapid economic growth typically generates greater amounts of waste requiring disposal. The increase in overall disposed tons, equaling 35,619 tons, is primarily due to the opening of the new NTS and the increased disposed tonnage of 33,450 tons coming from the Self-haul sector.



TAKE A CLOSER LOOK

Waste generation is historically tied to economic activity. The purple line of Figure 2 above illustrates waste generation and follows the trend of lower waste generation rates through the “Great Recession” of late 2007 through 2009. Typically, the amount of waste generated during economic growth, experienced since 2009, would have been reflected by the purple line returning to equal or even higher levels. Seattle managed to break the historic trend between economic growth and waste generation through increased recycling in the Residential and Commercial sectors and keeping what is going to the landfill constant.

2017 RECYCLING RATE REPORT

2000-2017 OVERVIEW OF POPULATION GROWTH AND RESIDENTIAL WASTE GENERATION, RECYCLING, AND DISPOSAL TONS

FIGURE 3

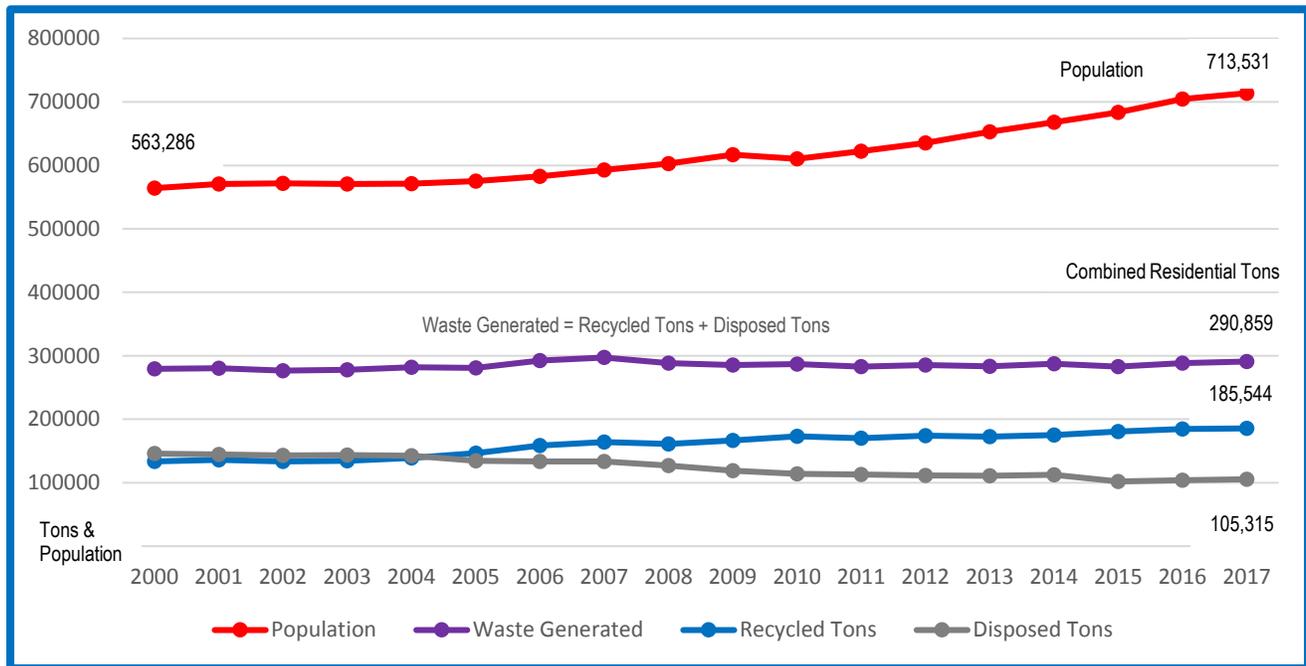


Figure 3 compares Seattle’s combined single-family and multifamily residential population growth to the amount of waste generated, recycled, and disposed of from 2000 through 2017 in these two residential sectors. While waste generation, recycling, and disposal have leveled off since 2015, Seattle’s substantial population and development growth has not resulted in increased disposal rates. Since 2015, residential recycling tonnage has grown more than disposal.

Seattle’s Single-family and Multifamily sectors have increased the combined residential recycling rate from 55% in 2007 to 64% in 2017, despite a 20% increase in the population and despite an ever-increasing share of households being multifamily, which has half the recycling rate of single-family households. Since 2015, the overall residential recycling rate has remained constant at 64%. However, a flat recycling rate does not mean residents are not recycling more each year. In 2017, single-family and multifamily residents recycled an additional 997 tons of material, compared to 2016. Unfortunately, this additional recycling was not enough to push the overall residential recycling rate up. In addition, the weight-based recycling rate does not consider the light-weighting of recycling, which would only be captured if the increased volume of materials being collected curbside and recycled were able to be tracked.

Seattle’s per capita disposed pounds has steadily decreased since 2000 to an all-time low of 0.81 pounds per person per day!



TAKE A CLOSER LOOK

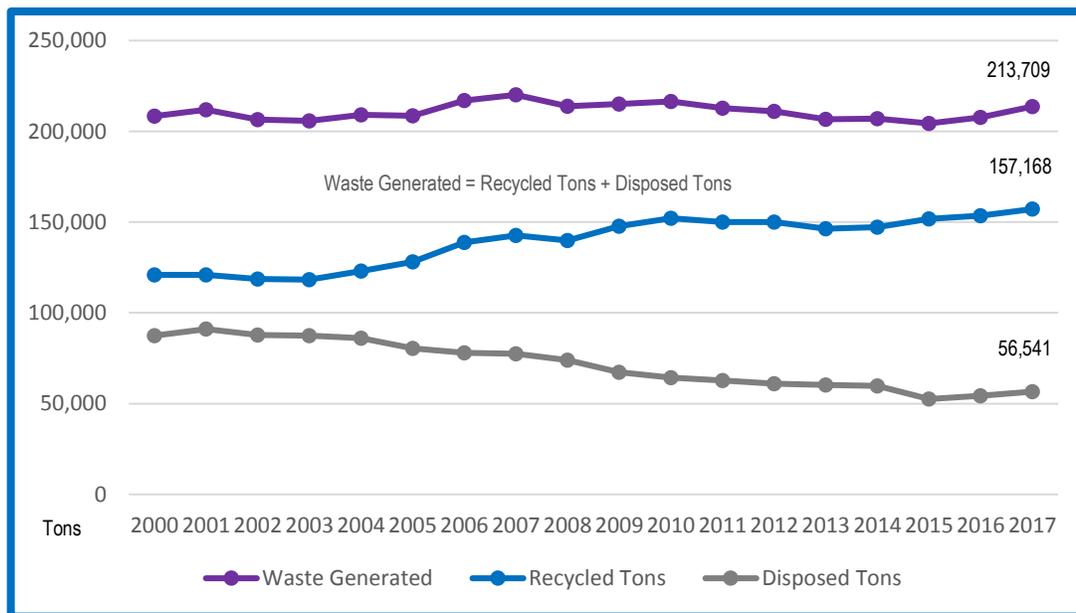
Seattle residents continue to recycle more each year, despite significant population and economic growth. Over the last decade, Seattle grew by approximately 120,000 new residents, experienced historic economic growth, and still managed to increase recycling and more importantly, break the historic trend between economic growth, increased population, and sending significantly more waste to our landfills.



Single-family Residential

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

FIGURE 4



The Single-family Residential sector includes households receiving can or cart garbage service (as opposed to dumpsters). These are primarily single-family and duplex to 4-plex households. Single-family Residential customers set out garbage (disposal), recycling, and composting (yard and food waste) for collection at the curb. They also compost some yard and food waste through on-site composting programs. On-site composting data is gathered through a home organics survey. The last survey was completed in 2010, and recently one was conducted in February 2018, which will provide update information on the amount of composting that customers are doing on-site for next year’s report.

From 2016 to 2017, the Single-family Residential sector had an additional 3,662 tons of materials collected for recycling and composting, reflected as “Recycled Tons” in *Figure 4* above. This increase includes the tonnage associated with improved data collection discussed above on page 5. However, the 2017 Single-family recycling rate decreased by 0.4 percentage points to 73.5% from 2016 rate of 73.9%. This is a reflection that the disposed tonnage increased proportionately more than the recycling tonnage.

SINGLE-FAMILY RESIDENTIAL RECYCLING RATE



2022 SF Recycling Goal of 83%



Recycled an additional 3,662 tons in 2017



2017 SF Recycling Rate = 73.5%
Down 0.4% from 2016

2017 RECYCLING RATE REPORT

REACHING THE 2022 RECYCLING GOAL

The Single-family Residential sector must increase recycling by 9.5 percentage points to achieve the sector-specific recycling rate goal of 83% by 2022. In terms of 2017 tons, single-family residents would have needed to recycle approximately 20,200 of the disposed tons to reach the 2022 recycling goal.



2017 PROGRAM HIGHLIGHTS – SINGLE-FAMILY

Community Outreach and Education

Worked with residents in their communities to incentivize recycling and composting and make it easier. Provided waste sorting and compost and recycling education at 41 community events and festivals. Partnered with community liaisons to the Latino, Filipino, Vietnamese, African-American, East African communities to create culturally-relevant events to help customers compost and recycle.



On America Recycles Day in November and during Earth Month (April), SPU and contractors from Waste Management, Recology, and Tilth Alliance reached out to Seattle residents by engaging residents outside of several grocery stores and provided free countertop food waste containers and reusable bags to residents, who signed a pledge to compost their food waste.

Compost Giveaways

Hosted two full-day events in the International District and West Seattle to thank residents for composting their food waste. Ninety yards of compost were given away to gardeners from 150 households. Compost was provided by Seattle contractors Lenz Enterprises and Cedar Grove.

Annual Mailing

Mailed recycling and composting information twice to 148,877 Seattle households including annual service collection calendar and recycling and composting newsletter, *Curbwaste & Conserve*. 10,000+ new residential customers received a coupon for compostable bags and a voucher for a countertop food waste container to make composting easier.



Recycling and Reuse Events

SPU contractors Waste Management and Recology hosted four Recycling and Reuse Collection Events. These events served 860 people in West Seattle, Rainier Valley, NE Seattle, and the Central District. Approximately 52,000 pounds of furniture, clothing, electronics, appliances, Styrofoam, and other items were collected for recycling or reuse.

IN 2018, SEATTLE WILL CONTINUE TO:

- Provide information on which materials are recyclable and compostable, through direct mailings, online tools, community outreach, and a targeted recycling campaign.
- Partner with community groups to increase residents' ability to recycle and compost more materials, such as recycling and reuse events.
- Coordinate recycling and composting messaging for customers across sectors. Residents will get consistent messages about reasonable recycling, waste prevention, and composting at home, at work, at school, and out in the community.

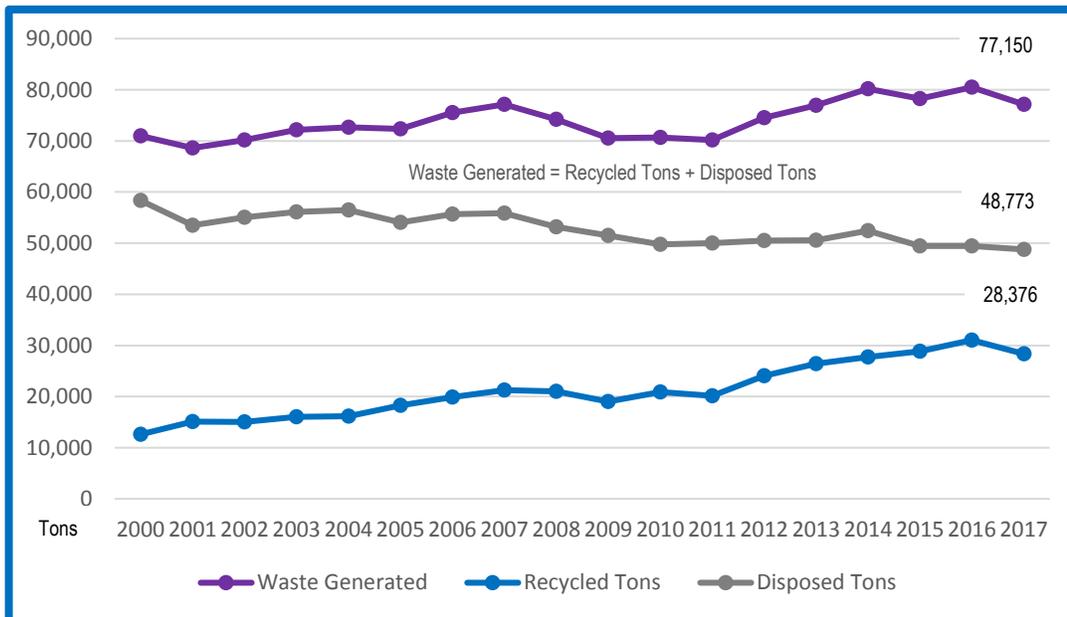


Multifamily Residential

MULTIFAMILY RESIDENTIAL RECYCLING RATE

MULTIFAMILY RESIDENTIAL TONS WASTE GENERATION, RECYCLING, AND DISPOSAL

FIGURE 5



The Multifamily Residential sector includes apartment and condominium buildings. These buildings use dumpsters for garbage and generally contain five or more housing units. Materials collected include garbage, recycling, and composting (yard and food waste). Multifamily residential units have several barriers that impact recycling and composting, including: in-unit space constraints for solid waste containers, common area space constraints for recycling and composting containers, inconveniently sited containers, shared containers providing no direct accountability to residents, among others.

In 2017, the overall waste generated in the Multifamily Residential sector decreased by 3,328 tons (4.1%) from 2016, which includes the correction associated with improved data collection and tracking discussed on page 5. This change in how composting is apportioned between residential sectors likely played a role in the decline in the Multifamily recycling rate from 38.6% in 2016 to 36.8% in 2017, representing a 1.8 percentage point decline. However, overall waste requiring disposal at the landfill also decreased by 664 tons, even though the Multifamily sector has seen a substantial population increase.



2022 MF Recycling Goal of 54%



2017 MF Recycling Rate = 36.8%



Down 1.8% from 2016

2017 RECYCLING RATE REPORT

REACHING THE 2022 RECYCLING GOAL

The Multifamily Residential sector needs a 17.2 percentage point increase to achieve its sector-specific recycling goal of 54% by 2022. In terms of 2017 tons, multifamily residents would have needed to recycle approximately 13,300 of the disposed tons to reach the 2022 recycling goal.



2017 PROGRAM HIGHLIGHTS – MULTIFAMILY

Culturally-relevant Outreach and Education

Continued to have a strong emphasis on reaching all customers in an equitable and inclusive manner. The City's multifamily outreach staff provided education and outreach information in five languages. Educational materials were designed to reach Seattle's diverse communities in a culturally-relevant manner. This additional multi-lingual, multi-cultural outreach has expanded the scope and reach of the multifamily recycling programs.



Tailored Technical Assistance

Provided technical assistance on recycling services and container placement to 184 apartment and condo buildings, serving 23,791 households.



Delivered 5,934 free kitchen food waste collection buckets to multifamily residents.

Tabled or presented at 13 events attended by property managers or apartment residents.



Responded to 1,409 recycling education messages/calls and supported 483 buildings with recycling/composting information and signage.

Direct Mail

Reached out to all 7,130 multifamily accounts with two direct mailings about waste reduction tools and resources.

IN 2018, SEATTLE WILL CONTINUE TO:

- Work closely with property owners and managers to identify more accessible locations for recycling and composting containers.
- Educate property owners and managers on how to lower garbage collection costs by recycling and composting more.
- Expand service equity work to reach more residents with educational information in several languages, increasing cultural relevance.
- Increase awareness of the impact and cost of food waste and promote strategies for residents to improve food storage to prevent wasted food and increase composting.
- Work with planning agencies and architects to provide easy to use and accessible recycling and composting systems.



RESIDENTIAL RECYCLING SERVICE EQUITY SPOTLIGHT

As noted above, Seattle has a strong emphasis on reaching all

customers in an equitable and inclusive manner. Highlights of service equity programs include:

- Provided multilingual recycling and composting guidelines to 180,000 households.
- Trained 493 multifamily residents and community members during 29 multilingual education presentations.
- Began the research phase to transcreate multifamily educational materials content into Chinese.
- Developed and distributed educational materials in several languages.
- Set up 3-year contract to provide multilingual technical assistance and education to property managers and residents.



Seattle residents recognize the importance of Seattle’s service equity work. Following are a few samples of the positive feedback staff received via emails from those participating in the service equity outreach events:

The class was fun, full of knowledge and interactive. Thank you for conducting an amazing class!

Thank you so much to you and your staff for coming and bringing all of the tables, supplies, and giveaways. It was particularly helpful to have all you with different languages to communicate with the residents.

I wanted to thank you for the AWESOME job you and your team did at the at the [event]! We’ve gotten a lot of great feedback from those who could attend, and hope SPU found it worthwhile.

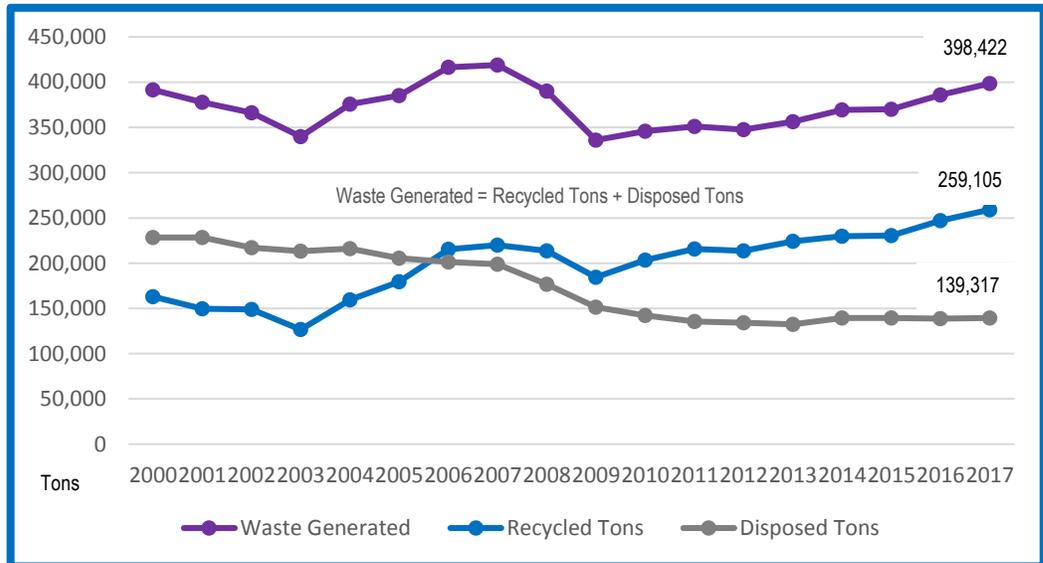


Commercial

COMMERCIAL RECYCLING RATE

COMMERCIAL TONS WASTE GENERATION, RECYCLING, AND DISPOSAL

FIGURE 6



The Commercial sector includes garbage, recycling, and composting collected from businesses. In 2017, the Commercial sector’s recycling rate increased by one percentage point to 65%. This increase is most likely attributable to the increased collection of composting. Total generation of MSW for the Commercial sector increased by 12,652 tons, which is slightly more than the additional tons collected for recycling (12,063 tons). In 2017, disposal increased by only 513 tons over 2016. Total generated tons in 2017 are 20,557 tons less than what was generated in 2007 (418,979 tons). The Commercial sector needs a 10 percentage point increase to achieve its sector-specific recycling goal of 75%. In terms of 2017 tons, commercial customers would have needed to recycle approximately 39,700 of the disposed tons to reach the 2022 recycling goal.

REACHING THE 2022 RECYCLING GOAL

Seattle’s most recent waste characterization studies indicated that composting needs further development in the Commercial sector for Seattle to meet the 2022 Recycling Goal of 75%. Seattle’s food service and retail food businesses will need to:

- Increase the amount of food they are collecting for composting.
- Increase participation in food rescue programs.
- Implement strategies designed to reduce the amount of wasted food.

In addition, the waste characterization study identified paper as another opportunity area to focus diversion efforts on.



2022
Commercial
Recycling
Goal of
75%



2017
Commercial
Recycling
Rate =
65%



Up 1%
from 2016



2017 PROGRAM HIGHLIGHTS – COMMERCIAL

Food Waste Diversion

Continued the growth in commercial food waste diversion with approximately 12,063 new tons of commercial food waste diverted in 2017.



Food Rescue

Assisted with the development of food rescue programs with Food Lifeline and Operation Sack Lunch. In 2017, Food Lifeline rescued 2,450 tons of edible food from local grocery stores and Operation Sack Lunch rescued an additional 600 tons of food. Food rescue programs not only keep food waste out of the landfill, but also help reduce Green House Gas emissions from decomposing organics in the landfill. They also serve as a vital resource for those in need by filling nutritional gaps experienced by Seattle’s senior and youth populations.



Tailored Technical Assistance

Provided technical assistance to over 1,000 businesses for food waste diversion and food packaging education by SPU’s staff contacts, Seattle’s Green Business assistance, collection contract field staff, and community partners.

Outreach and Education

Provided recycling education and outreach at 16 business community events and tradeshows.



Supported efforts by the public to divert food waste and recycling at special events and festivals.

Direct Mail

Mailed welcome letters providing information on the City’s recycling and food waste composting requirements to 800 new businesses.



COMMERCIAL RECYCLING SERVICE EQUITY SPOTLIGHT

Service equity programs are critical to success in the Commercial sector. Highlights include:

- ➔ Provided in-language education and technical assistance to 247 immigrant and refugee-owned businesses, supporting 12 languages.
- ➔ Began research to “transcreate” commercial educational materials and *Love Food, Stop Waste* content into Chinese.
- ➔ Conducted 22 Sustainable Landscaping trainings for 980 landscape professionals, including 2 classes in Spanish.



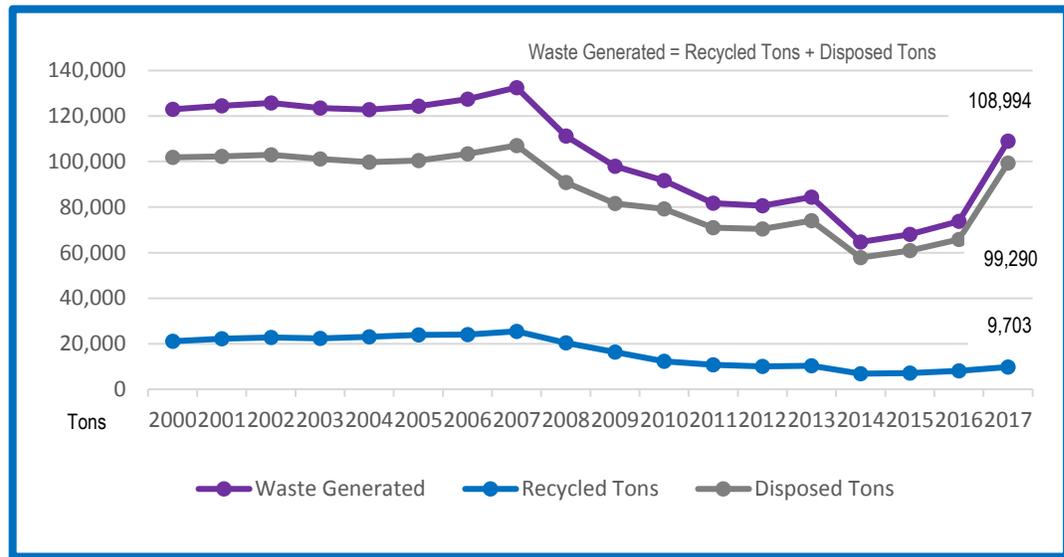
SELF-HAUL
RECYCLING
RATE



Self-haul and Transfer Stations

SELF-HAUL TONS WASTE GENERATION, RECYCLING, AND DISPOSAL

FIGURE 7



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 (yard and food waste, and clean wood), appliances and metals, items that can be donated for reuse and other recycling. Some C&D materials mixed with MSW and delivered by contractors to Seattle’s transfer stations are also counted as self-haul MSW and has an impact on the Self-haul sector’s recycling rate. Waste from the City’s unsanctioned homeless encampments is also calculated as Self-haul. Materials being self-hauled to one of the City’s transfer stations is often commingled with garbage, making it virtually impossible to separate out recycling.

Seattle’s Self-haul recycling rate does not include recycling and composting that is self-hauled by customers to private waste and recycling facilities. Materials self-hauled to private recycling facilities are captured in the C&D recycling rate. Seattle is working with private waste and recycling facilities to try to capture self-hauled recycling and composting to private facilities or through commercial collection alternatives to include those tons in the Self-haul recycling rate.

Recycling and disposal rates for the Self-haul sector have been influenced by the closing and rebuilding of the City’s North Transfer Station (NTS). The City’s NTS



2022 Self-haul
Recycling
Goal of
46%



2017 Self-haul
Recycling
Rate =
8.9%



Down 2%
From 2016

2017 RECYCLING RATE REPORT

was closed in 2014 and did not reopen until November 2016. During 2014, 2015, and 2016, waste that would have been self-hauled to the NTS was diverted to other locations, including the City's South Transfer Station (STS) and King County's Transfer Station located north of Seattle in Shoreline, Washington. Tonnage diverted out of the City was not captured during these years, which is reflected in *Figure 7* above, where there was a significant drop in disposed tons in 2014, 2015, and 2016. As a result, the overall recycling rates for these three years were overstated. 2017 marks the first year in which the newly rebuilt NTS was fully operational.

In 2017, the Self-haul sector recycling rate decreased by 2 percentage points to 8.9%. Total generation of MSW increased by 35,071 tons, a 47% increase from 2016. Disposal increased by 33,450 tons (51%) and recycling increased by 1,620 tons (20%). Total MSW coming to the transfer stations via self-haul has dropped from 132,544 tons in 2007 to 108,994 tons in 2017, a decrease of 23,551 tons or 17.8% from 2007.

The Self-haul sector needs a 37.1 percentage point increase to achieve its sector-specific recycling goal of 46% by 2022. In terms of 2017 tons, self-haul customers would have needed to recycle approximately 40,400 of the disposed tons to achieve the 2022 recycling goal.

Higher disposal for the Self-haul sector may be due to higher levels of garbage mixed with C&D debris delivered to the transfer stations from C&D projects and waste materials being delivered to Seattle transfer stations from customers outside of Seattle and from neighboring jurisdictions. Because C&D debris mixed with garbage from C&D sites is counted as Self-haul MSW and not in the C&D waste category, Seattle's increased construction activity may be causing a spike in self-haul tonnage and depressing the Self-haul sector's recycling rate. Also, because the newly rebuilt transfer stations are more efficient, have improved traffic flows, and are more user-friendly than transfer stations in neighboring jurisdictions, many businesses from outside Seattle may be bringing their self-haul materials to the City's transfer stations.



REACHING THE 2022 RECYCLING GOAL

There are several actions that will need to occur to help reach the 2022 Self-haul sector Recycling Goal, including:

- Evaluate 2018 Waste Composition Studies to identify specific waste categories and quantities, then target identified materials for recycling and reuse.
- Improve recycling opportunities and outcomes for specific waste categories, such as clean wood, cardboard, and C&D waste.
- Increase reuse opportunities by educating residents on the reuse and donation opportunities at both transfer stations.
- Complete STS Phase 2 (STS2) and increase recycling and reuse opportunities at the City's STS.
- Identify non-Seattle customers bringing materials to the transfer stations and revise annual data to reflect waste amounts from other jurisdictions.
- 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.



2017 RECYCLING RATE REPORT



2017 PROGRAM HIGHLIGHTS – SELF-HAUL AND TRANSFER STATIONS

NTS Celebrates a Year of Operation

Opened NTS in late November 2016, including the new *Recycling and Reuse Drop-off Center*, which provides an opportunity for customers to drop-off certain recycling and items that can be reused. November 2017 represents an entire year of operation and neighborhood partnerships.



Donations Drop-off at NTS

Negotiated the siting of a donations drop-off site managed by Seattle Goodwill at the NTS Recycling and Reuse Drop-off Center. Donations drop-off complement the recycling drop-off, expanding customer opportunities to divert items from the waste stream, allowing customers to drop-off certain reusable items for free before they cross the scale. The drop-off location augments Seattle Goodwill's operations, which collected 17,500 tons of donated items city-wide in 2017.



Separate C&D Drop-off Area

Developed a separate drop-off area for C&D materials banned from landfill disposal and mattresses at STS.

NTS Community Viewing Room

Completed design and installation of the Community Viewing Room, including educational activities at the NTS, where multiple interactive exhibits entertain and inform visitors about transfer station operations and services. The exhibit has become a popular location to visit.

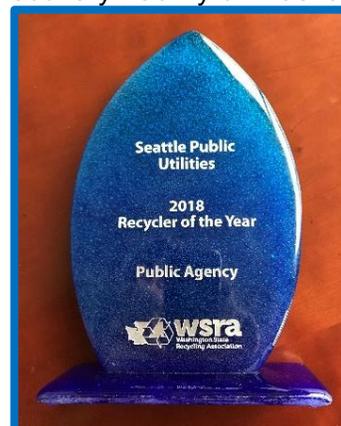


STS2

Initiated the design phase for the reconfiguration of the original South Transfer Station, known as STS2. The new facilities will include retaining the 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, such as an anaerobic digester, Material Recovery Facility or Plastics Recovery Facility.

2018 RECYCLER OF THE YEAR – PUBLIC AGENCY

SPU received the Washington State Recycling Association 2018 Recycler of the Year – Public Agency, recognizing the outstanding contribution Seattle has made to strengthening and expanding recycling and waste prevention policies across the state!



2017 SPOTLIGHT

The New North Transfer Station opened November 2016 and celebrated its first Anniversary in 2017!



NTS received the American Institute of Architects Washington Council's Award for Excellence in Architectural Design and Planning in 2017!

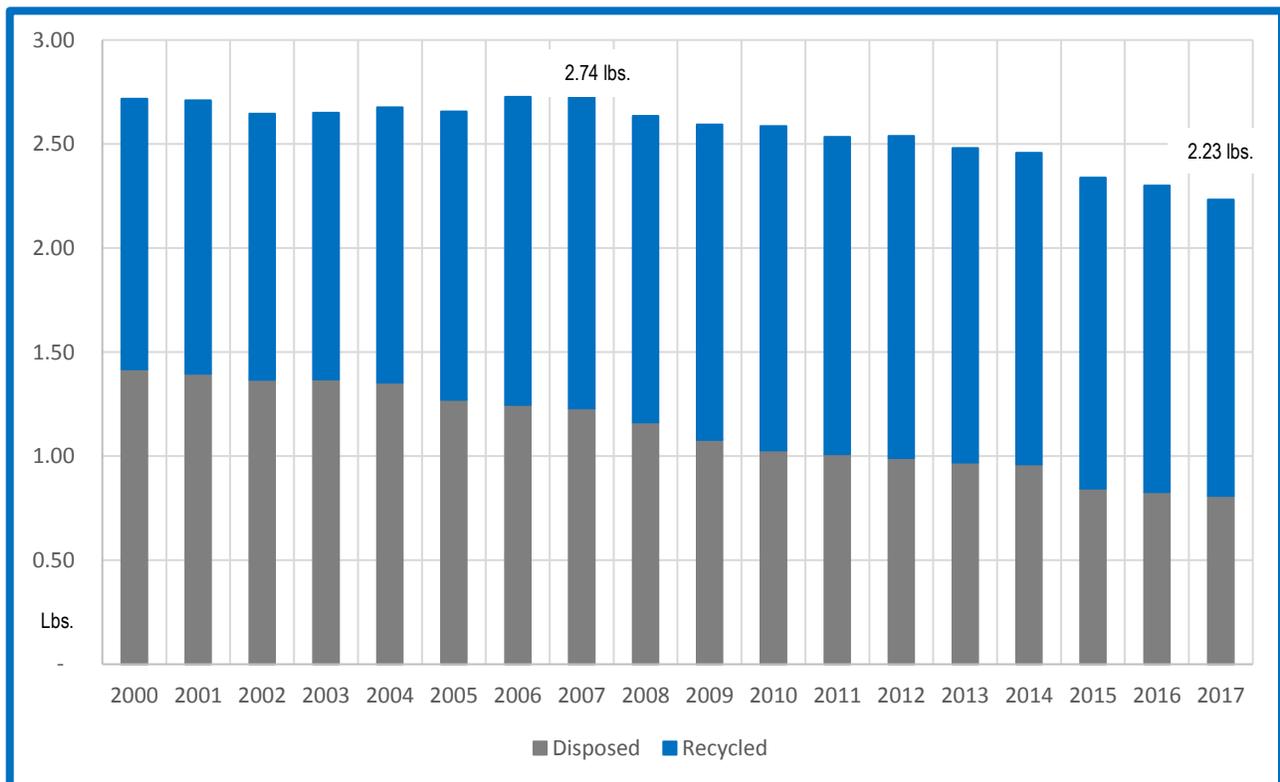
Photo Credit: BENJAMIN BENSCHNEIDER



Waste Prevention and Product Stewardship

POUNDS PER PERSON PER DAY SOLID WASTE RESIDENTIAL SECTOR

FIGURE 8



Seattle’s waste prevention programs are designed to reduce waste volumes from residential households and businesses and 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 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 in the recycling rate. Some waste prevention program tons 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 8* above. Reductions in waste generation can be 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.

As reflected in *Figure 8*, the pounds per person per day waste generated in the combined Single-family and Multifamily Residential sectors has decreased significantly since peaking in 2007, dropping from a peak of 2.74 pounds per person per day in 2007 to a low of 2.23 pounds per person per day in 2017.



2017 PROGRAM HIGHLIGHTS – WASTE PREVENTION AND PRODUCT STEWARDSHIP

Packaging

Continued to work with product packaging manufacturers and our stakeholders to reduce waste from plastic packaging and increase use and awareness of compostable packaging alternatives.

Continued to work with the Washington Organics Contamination Reduction Work Group, Sustainable Packaging Coalition, PAC Next, Biodegradable Products Institute, and the Food Packaging Institute to reduce compost contamination by improving labeling, design and compostability of packaging.



Secure Medicine Return

Continued promotion of the manufacturer financed Secure Medicine Return, through social media and SPU's *CurbWaste & Conserve* newsletter, which is mailed to 325,000 households. In 2017, 33 Secure Medicine Return locations for the collection of unused prescription medications were located in Seattle.

Electronics and Mercury Lighting

Continued promotion of manufacturer financed take-back, recycling, and reuse programs. The E-Cycle WA program collected approximately 1,838 tons of televisions, computers, laptops, and monitors within Seattle. Additional tons were salvaged by E-cycle collectors for refurbishment, resale, and reuse. The Light Recycle Washington program collected approximately 614,943 mercury containing fluorescent tubes, compact fluorescent lamps, and other mercury-containing bulbs totaling 59,431 lbs. (29.72 tons) from Seattle residents and businesses at 41 locations. As moderate risk waste, mercury lighting is not included in this Report's calculations.



Solar Photovoltaic Modules

Played an instrumental role in drafting policy and coordinating with Office of Intergovernmental Relations, City Light, Northwest Product Stewardship Council, and other stakeholders to gain passage of the Nation's first producer responsibility law for photovoltaic modules. This 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.



2017 RECYCLING RATE REPORT

Love Food, Stop Waste



Continued to develop programs to reduce the amount of food wasted, by educating customers on how to reduce food waste. Seattle's *Love Food, Stop Waste* program educated more than 800 residents about ways to prevent wasted food through 23 education events that included presentations, film screenings, classes, and tabling at community events, farmer's markets, and grocery stores. Publications included a Meal Planning and Shopping Guide, Food Storage Guide, and Freezer Storage Guide.

Food Rescue



Continued to partner with City Fruit, Solid Ground, and the Tilth Alliance, diverting edible food from disposal through food rescue programs that prevented nine tons of apples from entering the waste stream. Over 3,000 tons of edible food were rescued from local grocery stores by Food Lifeline and Operation Sack Lunch. Seattle's food rescue programs help fill the nutritional gaps experienced by Seattle seniors and youth. A new partnership with Seattle Public Schools, EPA Region 10, and emergency food system providers was also created to assess opportunities for recovering edible food from school lunches.

Greener Gardening



Continued to assist residents and landscapers with developing Best Management Practices that reduce waste and the use of toxic chemicals from landscaping and gardening activities. The Garden Hotline, received 7,955 public contacts. Additional education was provided through community events and classes, with 58% of those events being held in diverse communities. Volunteers with the Master Composter/Soil Builder program provided over 1,245 hours of volunteer time and contacted 8,827 residents. Outreach also included the addition of online videos to educate residents on common yard care problems and solutions. Integrated Pest Management trainings were attended by 217 landscape professionals, including those who attended the trainings conducted in Spanish.

Threadcycle



Promoted a public awareness campaign that informs residents and organizations about reuse and recycling opportunities for clothing that is damaged, too worn, or unfit for donation. Threadcycle also includes ideas for reducing the amount waste from clothing and textiles, by performing research to identify retail and consumer actions that promote clothing longevity, care, repair, sharing, and repurposing. Threadcycle's 2017 public awareness campaign included advertisements on Facebook and Google search ads and continued across social media platforms in both English and Spanish. Additional messaging was provided through advertisements placed on the City's Metro Bus Billboards. Media outreach included radio and television coverage on KOMO, KING, and KCPQ, with six interviews in Spanish on Estación de la Familia 93.7FM and El Rey 1360AM.

2017 SPOTLIGHT

Reducing pollution one straw at a time!



Seattle is among the first cities in the U.S. to implement a ban on plastic straws and utensils. Seattle has been a leader on many issues and helps pave the way for wider adoption by others. Communities from around the world are following Seattle's lead and phasing out plastic straws and utensils.





TAKE A CLOSER LOOK
2017 NEW METRICS SYMPOSIUM



In preparation for SPU's upcoming Comprehensive Solid Waste Management Plan Amendment, SPU was interested in evaluating how "success" in the solid waste industry is defined and the use of new metrics to better measure and communicate the success of Seattle's Solid Waste management policies, operations, programs, and services.

SPU was interested in creating a discussion around what defines success and new ways to measure that success with both regional and national stakeholders. On November 2, 2017, SPU held a one day, invitation-only new metrics symposium entitled Goals, Metrics, and More: Defining Success in Materials Management Symposium.

The primary goals of the New Metrics Symposium were to:

- Initiate a dialogue with regional and national stakeholders from across the materials management lifecycle.
- Explore options for defining success in materials management beyond a weight-based recycling rate.
- Identify possible new goals and metrics for inclusion in SPU's upcoming Comprehensive Solid Waste Management Plan Amendment and Annual Recycling Rate Report.



The New Metrics Symposium concluded that Seattle's weight-based recycling rate alone was not sufficient to communicate the true success of Seattle's progressive recycling, composting, reuse, waste prevention, and product stewardship programs, and that new metrics should be added to the City's recycling rate that include:

- Reducing waste generation
- Non-weight-based waste recovery goals
- Recycling capture rates and material-specific recovery goals
- Connecting material recovery to the circular economy

2017 SPOTLIGHT

Environmental Justice and Service Equity

Seattle residents embrace cultural diversity and recognize that eliminating racial, social, and cultural barriers are vital to reaching the City’s recycling goals. The 2017 Annual Recycling Rate Report is the first in Seattle’s history to identify and recognize the City’s commitment to Environmental Justice and Service Equity by highlighting our service equity efforts in each of the recycling sectors.



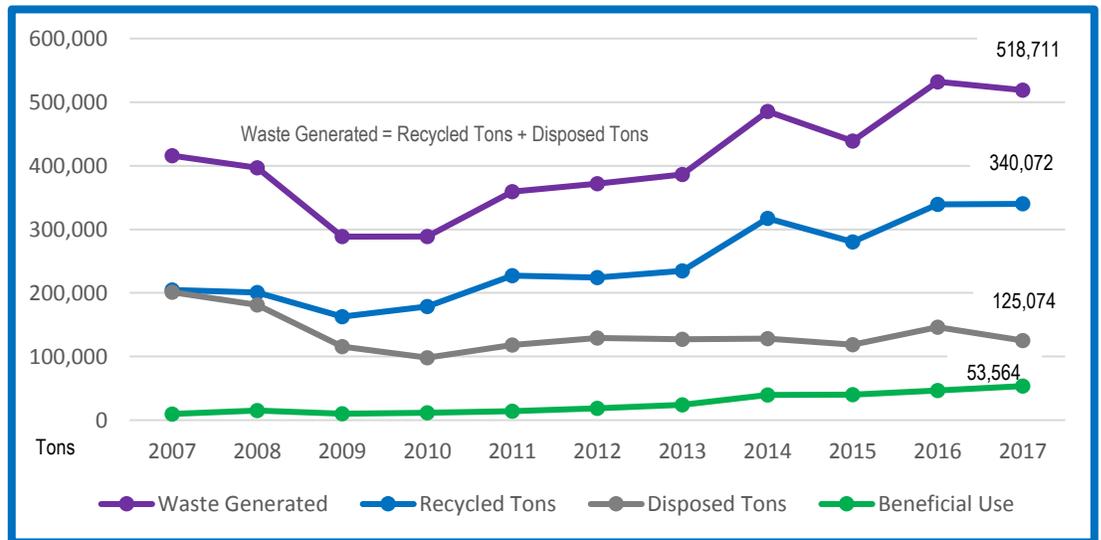
CONSTRUCTION AND DEMOLITION DEBRIS



CONSTRUCTION & DEMOLITION DEBRIS

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

FIGURE 9



The Construction and Demolition (C&D) sector is comprised of construction, demolition, and land-clearing materials that are typically self-hauled by construction contractors, a third-party drop box service, or dump trucks to private recycling facilities for sorting or to private transfer stations operated by Waste Management or Republic Services for disposal.

Non-recyclable C&D materials from job sites in Seattle are disposed of using Waste Management’s drop box service through a contract with the City. Smaller amounts of C&D materials that are mixed with garbage from construction and/or demolition sites and delivered by contractors to Seattle’s transfer stations are counted as self-haul MSW and included in the calculation of the recycling rate for the Self-haul sector, not the C&D sector described in this section. With the opening of the North Transfer Station (NTS), more material that historically would have been hauled by small contractors to C&D processing facilities appears to have been hauled to NTS and captured as self-haul tonnage. Seattle will be completing a waste composition study of the materials hauled to the transfer stations in 2018, which will help future calculations of what should be allocated between the Self-haul and C&D sectors. For this Report, Self-haul data is believed to be overstated, while C&D sector data is understated.



2020 C&D Recycling Goal of 70%



2017 C&D Recycling Rate = 65.6%



Up 1.8% From 2016

C&D MATERIALS ARE DEFINED AS:

- **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 the sum of recycling, reuse, and beneficial use.

C&D WASTE RECYCLING AND DIVERSION RATES

C&D generation correlates closely with economic and building activity cycles and has increased significantly since 2010. However, total C&D tonnage generated in 2017 declined from 2016, possibly due to some of the materials being hauled to one of the two City transfer stations and captured as self-haul. The good news is that both C&D Recycled and Beneficial Use tonnages increased. An additional 594 tons of C&D were Recycled, and an additional 7,055 tons of C&D were diverted to Beneficial Use. This adds up to a 2017 C&D sector Recycling Rate of 65.6%, a 1.8 percentage point increase from 2016, and a 2017 C&D sector Diversion Rate of 75.9%, a 3.4 percentage point increase from 2016.

The C&D sector needs a 4.4 percentage point increase to achieve its sector-specific recycling goal of 70%. In terms of 2017 tons, C&D customers would have needed to recycle approximately 23,000 of the disposed tons to reach the 2020 sector’s recycling goal of 70%. The current recycling goal for the C&D sector only considers materials diverted to recycling end markets and not Beneficial Use end markets, such as clean wood to hog and boiler fuel.



IMPROVING SELF-HAUL AND C&D RECYCLING RATE CALCULATIONS

With the significant economic activity across the City and the opening of both new transfer stations, it is anticipated that some C&D material that normally is captured as C&D debris is being hauled by smaller contractors to one of the two transfer stations in the City and that material has been captured and reported in the Self-haul data. A waste composition study of the materials flowing through the two transfer stations is currently underway and will be completed in 2018. The results of this study will help future allocations of waste between the Self-haul and C&D sectors. For now, it is anticipated that the 2017 Self-haul sector’s data is somewhat overstated, and the C&D sectors data is understated. If so, this additional disposal tonnage negatively impacted the overall MSW Recycling Rate. Also, most of the C&D Debris processing facilities are located outside of Seattle, so the data presented in this Report may be revised once King County and the State Department of Ecology are able to share the facilities information with SPU.

2017 RECYCLING RATE REPORT

CHALLENGES TO MEETING THE C&D 70% RECYCLING GOAL BY 2020

- Seattle needs additional monitoring at demolition sites to ensure that targeted recycling (i.e., concrete, asphalt paving, bricks, cardboard, metal, drywall scrap, and unpainted/untreated wood) are not being placed in intermodal containers for direct landfill disposal or being hauled to a solid waste transfer station or other facility that does not sort materials for recycling.
- End markets for certain materials once targeted for future disposal bans such as carpet, tear-off asphalt shingles, and plastic film wrap remain poor with little local processing infrastructure.
- Overall sorting capacity was reduced at one solid waste facility, but two new mixed C&D recycling operations may be permitted by mid-2018 in Seattle and King County.
- Lack of space for multiple containers on job sites has led to less on-site source separation of materials, and more sorting of mixed C&D materials at C&D recycling facilities, which might lead to lower recovery rates for C&D materials.
- C&D job sites need to incorporate comprehensive recycling strategies to reduce the amount of garbage generated from the project and improve the quality of the C&D materials that can be recycled.
- The threshold for submitting a Waste Diversion Report increased from \$30,000 to \$75,000, which limits the possibility of providing contractors with information on recycling opportunities for smaller jobs. This is important since the smaller construction jobs are counted as self-haul wastes and the Self-haul sector needs additional recycling rates to reach its mandated recycling goal.



2017 PROGRAM HIGHLIGHTS – C&D DEBRIS

Improved Reporting

All eight mixed C&D recycling facilities in the region continued to participate 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. Seattle now has a Waste Diversion Reporting success of 62% and has documented increased amounts of materials that are being salvaged and recovered from construction projects.



Salvage Assessment and Monitoring

Continued to review Salvage Assessments prior to building demolition to identify additional salvage and reuse opportunities. To further improve salvage and reuse opportunities, new procedures may be adopted to reflect Portland's Mandatory Deconstruction Program for single-family home demolition. Seattle also continues field monitoring of job sites for compliance with disposal bans and coordinates with King County on enforcement of disposal bans at solid waste transfer stations.



Increased Education

Continued to provide materials to contractors regarding recycling opportunities and will be updating the 2012 Seattle/King County Construction Material Recycling Directory to include new companies and services for reuse, recycling, and salvage of C&D debris.



Continue to coordinate with the County's Linkup Program regarding market development, with focus on tear-off asphalt shingles and clean wood for recycling end markets.

CONCLUSION

There is great news in Seattle's solid waste data, including:

- Seattle set an all-time recycling tonnage record in 2017, diverting 454,352 tons (a 3.3% increase from 2016).
- Seattle recycling rate has grown 30.1 percentage points from the 1988 recycling rate of 26.8%, when data was first gathered, to the current 2017 recycling rate of 56.9%.
- The residential per capita waste generation rate (i.e., pounds of waste per person per day generated) is at an all-time low, dropping almost 19% over the last decade – from 2.74 pounds in 2007 to 2.23 pounds in 2017.
- City-wide per capita disposal (i.e., materials going to landfill) has decreased steadily since 2000 to an all-time low of 0.81 pounds per person per day.
- Disposal is staying low, even as Seattle experiences significant population and economic growth.
- The benefits of waste prevention and product stewardship programs are being realized.

These are remarkable achievements! Nonetheless, Seattle has much more to do to achieve the recycling goals. Seattle's continued commitment to environmentally responsible solid waste management will help the City achieve these recycling goals, as well as continue to show national leadership in waste prevention.

Please see [Seattle's Solid Waste Plan](#) for more background on 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.

Recycling continues to be a sound investment by Seattle, as well as a key part of Seattle's climate action strategy.

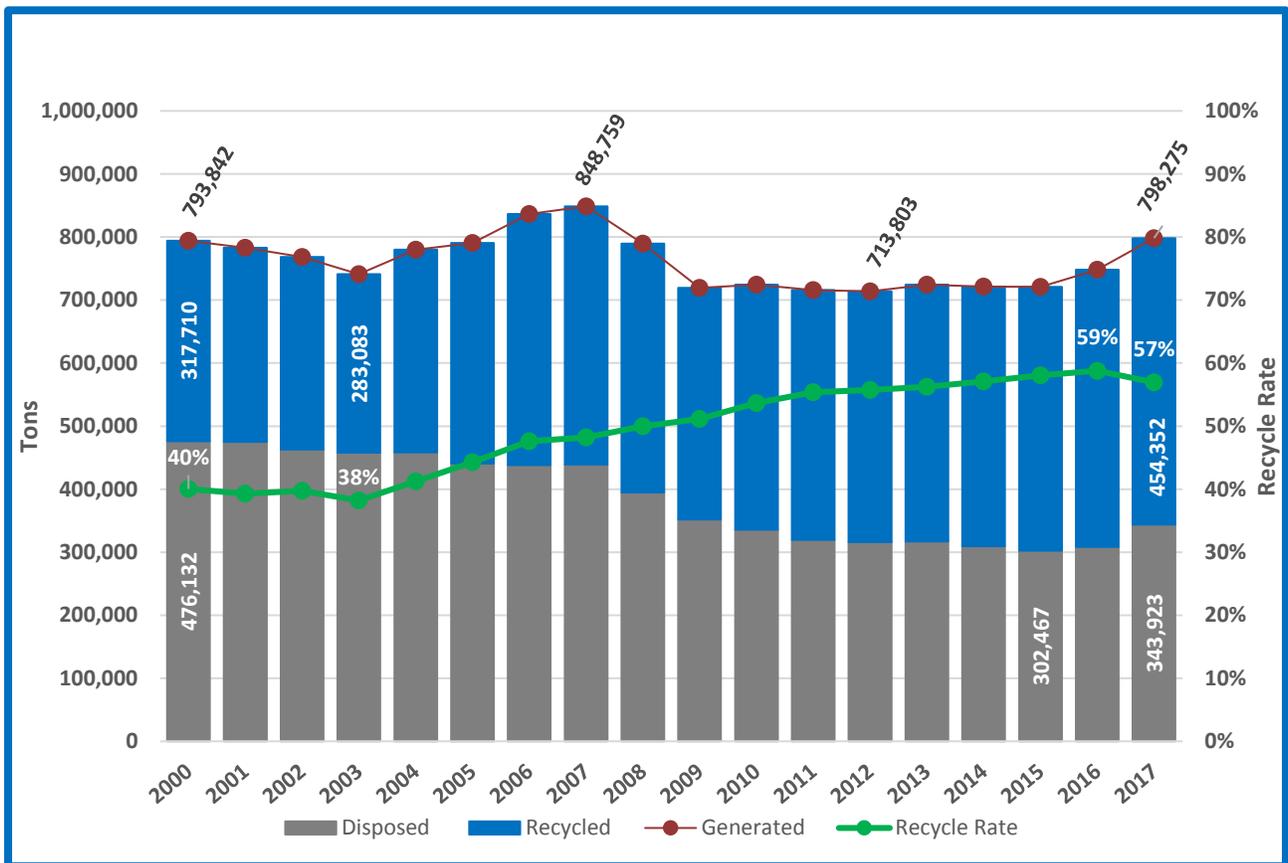


Attachment A

2017 Recycling Rate Report Tonnage Data

2000-2017 Overall MSW Tons & Recycling Rate Total Waste Generated, Disposed, & Recycled

Figure 10



**2000-2017 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	798,275	6.7%	343,923	11.6%

2017 RECYCLING RATE REPORT

2000-2017 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%	8.90%	65.03%	56.92%
2022 Goal	83%	54%	75%	46%	75%	70%

**2000-2017 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	798,275	343,923	454,352	56.92%

2017 RECYCLING RATE REPORT

2000-2017 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%

2000-2017 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%

2017 RECYCLING RATE REPORT

2000-2017 Residential Per Capita Disposed, Recycled, & Generated

Table 6

Year	Tons			Recycle Rate	Population	Per Capita		
	Generated	Disposed	Recycled			Pounds per Person per Day		
						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

2000-2021 Multifamily Sector Growth Urban King County Area

Chart 1

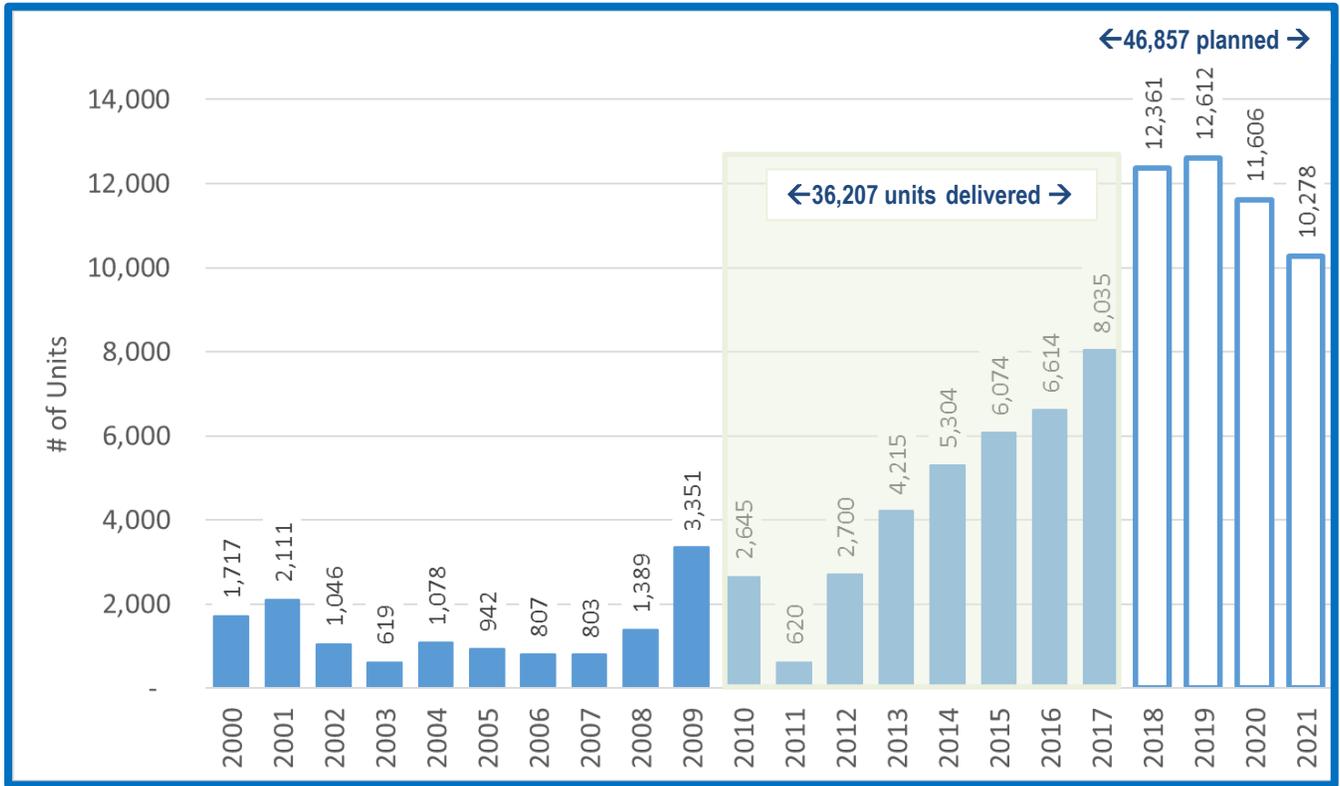
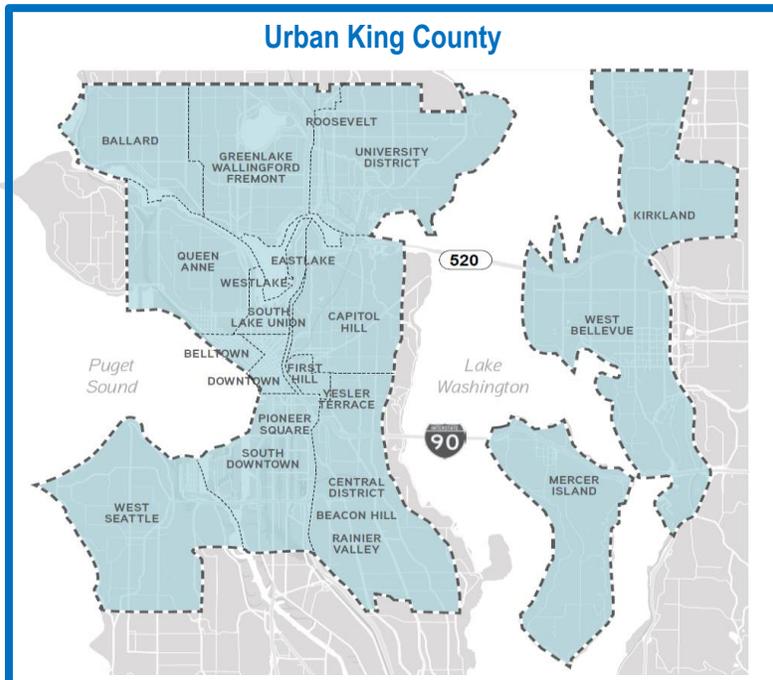


Chart 2



Source: 2018 Seattle Apartment Market Study (Dylan Simon)

2017 RECYCLING RATE REPORT

2000-2017 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%

**2000-2017 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	108,994	99,290	9,703	8.9%

2017 RECYCLING RATE REPORT

2007-2017 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%

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

Attachment B
Letter from SPU's
Solid Waste Advisory Committee

2017 RECYCLING RATE REPORT



Solid Waste Advisory Committee (SWAC)

June 18, 2018

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

Dear Council member Herbold and Committee Members,

In June 2018, the Seattle Public Utilities (SPU) Solid Waste Advisory Committee (SWAC) members had the opportunity to review SPU's Draft of the 2017 Annual Recycling Rate Report. We commend SPU for making the 11th Annual Recycling Rate Report more user-friendly in order to better serve SPU's diverse stakeholders, while inviting a larger Seattle audience to engage with the report.

Though recycling rates have increased over the years, Seattle still needs to take significant steps toward reaching its goal of 70% diversion by 2022. In 2017, the City achieved a 56.9% diversion rate, which is down 1.9% from 2016 and falls short of the 2022 goal. SWAC strongly recommends that SPU continue to work toward this goal, with the understanding that plastic and aluminum recyclables are becoming lighter and previously unaccounted for solid waste is being generated due to Seattle's steep rise in homelessness. Recycling rate/landfill diversion rate is only one measure of success. SPU needs to continue to evaluate waste analysis metrics as dynamics in the recycling industry change. Furthermore, several significant external factors are influencing recycling in Seattle, but SWAC encourages SPU to continue to be a leader in this space through commitments to waste prevention to drive down total waste generated and disposed.

Seattle is one of the fastest growing cities in the country, gaining over 100,000 new residents in the last decade. In spite of this unprecedented growth, there is a decoupling of waste generation and population—as the City's population and economy has grown, waste generation has decreased. Like single family residential, the multi-family residential recycling rate decreased from 2016, down 1.8%. Although these recycling rates decreased in 2017, SWAC is encouraged by the fact that waste disposal and total waste generated decreased. These numbers may reflect improved waste prevention and SWAC supports continued focus in this area.

New multi-family development creates a unique opportunity to work with planners, architects, investors, and other stakeholders to incorporate increased accessibility to recycling and composting systems in new buildings. For instance, SPU research shows appropriately sized, co-located, easily accessible recycling, and compost areas improves resident waste diversion. Better recycling and composting infrastructure in new and existing properties should be supplemented with a pointed focus on multicultural education for owners, property managers, and residents. Multi-family outreach strategies such as door-to-door education, resident and property manager training, presentations, film screenings, classes, and tabling are proven efforts to increase recycling rates while also building social capital.

As previously stated, Seattle is undergoing unprecedented growth, which brings major construction projects across the city and region. 2017 marked the highest Construction and Demolition (C&D) waste generation since Seattle started tracking it (2007). This sector is worth attention and is ripe for innovation. SWAC encourages SPU

to be proactive in this waste sector through innovations such as mandatory deconstruction and/or salvage, development of the material reuse industry, and simplifying C&D materials tracking and reporting.

Waste prevention and product stewardship efforts can be difficult quantify. However, these programs, such as the Love Food, Stop Waste program, are vital to effective waste reduction and SPU should continue to prioritize them. They may not improve the City's recycling rates as they are currently calculated, but they directly reduce greenhouse gas emissions and provide a more equitable waste system for residents. SPU should continue to track, measure, and set goals around waste generation per capita, as that is the single most effective measure of waste reduction efforts. Furthermore, Seattle has been a progressive leader in enacting innovative waste prevention ordinances and policies. SPU will continue to rely on legislative support in furthering waste prevention strategies to remove problematic materials from entering the waste stream. The pharmaceutical and paint waste programs are a key example of this partnership. Product stewardship programs can also be a cost effective strategy for waste prevention because manufacturers must share financial responsibility for the safe and effective disposal of their products (see p.28 of Recycling Report for "Waste Prevention and Product Stewardship" section)

SWAC recommends ongoing support of education, outreach, and compliance programs for new and existing businesses. Main points of emphasis should include the recent ban on plastic utensils and straws, the plastic bag ban, the food waste ordinance, and recycling and composting best practices. Bans on plastic bags, utensils, straws, and possibly future disposable items is a major achievement for SPU. These bans reduce waste from the commercial sector and help educate residents on the impacts of disposable items and alternatives. We emphasize the importance of continuous monitoring of businesses to ensure cooperation and full compliance.

China's newly enacted Blue Sky policy significantly tightened recycling import requirements, sending shock waves throughout the US domestic recycling industry. China is a major outlet for recycled plastics, paper, and cardboard from the west coast. SPU has been, and will need to continue to track this situation and its impacts on recycling end markets. SPU is a leader in sustainable materials management and SWAC encourages SPU to continue to take a leadership role as the region and country grapple with this new recycling landscape. This may include supporting increasing the capacity of domestic recycling processors, more responsible recycling practices, and other innovative strategies. Responsible recycling is a quickly emerging framework that will help address the life cycle of recycled materials with ecological, economic, and social impacts as a priority. More strict recycling guidelines may mean a temporary drop in recycling rates, but SPU should consider whether implementing new policies, practices, and metrics are necessary steps toward improving the recycling system on a greater temporal scale.

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

Sincerely,



Holly Griffith: Chair
Quinn Apuzzo: Vice Chair
Adam Maurer: Secretary

SWAC is one of Seattle Public Utilities' Community Advisory Committees. The SPU CEO/General Manager appoints its members. 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