

MEMORANDUM

DATE: July 1, 2018
TO: Seattle City Council
FROM: Mami Hara, General Manager & CEO – Seattle Public Utilities (SPU)
RE: 2018 Report on Seattle Bag Ban Compliance

Background

The Seattle City Council in 2011 passed [Ordinance 123775](#), which banned retailers from providing single-use plastic and bio-degradable carryout bags. In 2016, the Council approved [Ordinance 125165](#), making several revisions to Seattle’s bag regulations, including requiring compostable bags be properly labeled and tinted either green or brown, disallowing the distribution of non-compostable plastic bags that are tinted green or brown, and creating an annual bag ban reporting requirement to Council. These ordinances together make up [SMC 21.36.100](#): *Single-use Plastic and Recyclable Paper Carryout Bags*, presented in *Appendix A* for reference. Refer to *Appendix B* for a summary of the bag ban policy components and their intended outcomes. This memorandum was prepared in compliance with the annual bag ban reporting requirement.

Seattle’s responsibility for addressing single-use plastic carryout bags is further emphasized by Seattle City Council in [Resolution 30990](#), which: (1) reaffirmed the City’s 60% recycling goal and set a longer-term goal of 70% recycling along with targets for waste reduction, and (2) called for studies on how to reduce Seattleites’ use of hard-to-recycle materials, many of them plastics, and specifically required SPU to propose strategies (including bans) to discourage the use of disposable plastic carryout bags.¹

Seattle’s bag ban ordinances were implemented primarily to address concerns that the production, use, and disposal of plastic carryout bags have significant adverse impacts on the environment, health, safety, and welfare of Seattle residents.² Key considerations include:

- Conserving energy and natural resources
- Reducing waste and controlling litter throughout the city
- Reducing marine litter and pollution
- Reducing solid waste disposal costs

Overview of Annual Reporting Requirements

As part of the annual reporting requirements, SPU must evaluate at a minimum:

- a) the waste and litter reduction benefits of the City’s bag ban program,
- b) strategies to increase bag ban compliance in all stores,
- c) the effectiveness of this ordinance in reducing the number of non-compostable bags contaminating the waste stream, and
- d) strategies to address the impacts of loose plastic bags on curbside recycling

Findings and recommendations are due to the City Council no later than July 1 each year.

This memorandum serves as SPU’s 2018 fulfillment of this reporting requirement to Council. Action items identified as “next steps” in the 2016 and 2017 reports are summarized in *Appendix C* along with their status.

Summary of Findings and Recommended Next Steps

To prepare this report, SPU and a team of Evans School Graduate Consultants and Cascadia Consulting Group reviewed relevant literature, interviewed subject matter and industry experts, and surveyed 177 Seattle retail businesses, including convenience stores and grocers. Compliance sampling was more extensive than in the past thanks to the Evans School Graduate Consultants and provided more robust and accurate data.

The following are key findings and recommended next steps for SPU:

Key Findings	Recommended Next Steps
Waste & Litter Reduction Benefits	
Litter impacts of the bag ban are difficult to quantify and studies to capture this data are cost-prohibitive.	Explore integrating Zero Waste Washington's new litter assessment protocol into existing litter-related programs, using information collected from Seattle clean-ups to establish a baseline plastic bag litter assessment.
Strategies to Increase Bag Ban Compliance	
SPU consultants observed an overall compliance rate of 82% (146 out of 177), a 67% increase over the rate observed in 2017 (33 out of 49), and a 64% increase over 2016 (16 out of 25). Compliance rates among sampled convenience stores were increased to 71% in 2017 (50 out of 70) from the prior year compliance rates of 33% (3 out of 9). Survey results suggest <u>non</u> -compliance is driven primarily by lack of awareness, customer preference for plastic bags, and language/cultural barriers.	Continue bag ban site visits this year, including culturally competent and in-language bag ban outreach and communications. Identify opportunities to incorporate environmental and waste prevention messaging into bag ban outreach and communications that are oriented to customers, to supplement information to businesses. Opportunities might include updated bag ban direct mailings and engaging directly with customers. Some businesses report non-compliance is the result of customer demand for plastic carryout bags.
Effectiveness in Reducing Non-Compostable Bags Contaminating Waste Stream	
Stores appear to have shifted away from green tinted plastic bags, as required by ordinance, as they were observed at less than 10% of surveyed grocery stores (6 of 63).	Continue to incorporate the bag tinting requirements into grocery outreach in 2018 and provide technical assistance to those stores observed using non-compliant tinted bags.
Strategies to Address Impacts of Loose Plastic Bags on Curbside Recycling	
Plastic bags and film collected via curbside collection programs contaminate otherwise valuable commodities, increasing labor and processing costs and creating safety risks. Plastic bags and film also have limited viable markets, most of which are in Southeast Asia where there are already significant environmental justice concerns around the handling of post-consumer plastics and the contribution to global marine plastic pollution.	Continue to participate in regional recycling task forces, including the Responsible Recycling Task Force formed in response to China's Operation Blue Skies (formerly National Sword), where contamination and market conditions are being addressed. Explore potential to remove plastic bags and film from the mix of materials accepted in the curbside recycling program and work to expand and promote retailer take-back programs like WRAP.

Key Findings	Recommended Next Steps
	Explore updating the bag ban ordinance to remove the exemption for plastic carryout bags provided for takeout at restaurants. SPU would work closely with stakeholders to explore strategies.

Sources of Bags in Seattle

Since the bag ban went into effect in 2012, plastic bags have entered Seattle’s waste stream primarily in three ways:

- (1) *Neighboring businesses outside of Seattle provide plastic carryout bags to customers.*
While SPU continues to collaborate on waste prevention efforts with our neighbors at the city, county, and state level, we have little influence over whether these jurisdictions formally adopt plastic bag ordinances. As such, plastic bag waste/litter originating from outside of Seattle has not been directly reduced by Seattle’s bag ban. The map included in *Appendix D* illustrates which neighboring cities have plastic bag regulations in place.
- (2) *Seattle restaurants provide take-out food in plastic carryout bags to customers.*
Seattle’s bag ban currently permits restaurants to provide customers with plastic carryout bags for takeout orders. With the increase in takeout orders and third-party delivery services like Uber Eats, Grubhub, and Caviar, future SPU studies might focus on estimating the number of Seattle restaurants that provide plastic takeout bags to their customers. If a large percentage of the plastic bags in Seattle’s waste stream is determined to have originated from restaurants, SPU might consider following the lead of jurisdictions like [Alameda County](#) where their plastic bag ban has been extended to include restaurants and third-party delivery services (summarized in *Appendix E*).
- (3) *Non-compliant Seattle retail stores offer plastic carryout bags to customers.*
Estimated non-compliance rates in the retail sector based on a sample of 177 Seattle businesses across all seven council districts is summarized below.

Evaluation

Methodology

SPU worked with two consulting teams to collect data on bag use among Seattle retail businesses:

Evans School Graduate Consultants

University of Washington [graduate consultants](#) from the Evans School of Public Policy & Governance (Yi Cao, Nora Haider, Carson Hornsby, and Angela Pietschmann) conducted in-person survey field work of 70 Seattle **convenience** stores – 10 from each council district. The team observed bag use at each location and inquired of staff to identify bag ban perceptions and compliance barriers. Convenience stores were the focus of this team’s work due to low compliance rates observed in 2017 survey field work.

Cascadia Consulting Group

Cascadia [outreach consultants](#) visited 107 stores across Seattle to collect data on bag usage, identify compliance barriers, and provide businesses with technical assistance. Surveyed retail sectors included: **large grocery, medium grocery, ethnic grocery and produce stores, large retail, and small retail.**

The number of retailers visited in each sector is included in *Table 1* below.

Table 1: Sample Sizes by Retail Sector

Retail Sector	Sample Size
Convenience Stores	70
Large Grocery	21
Medium Grocery	21
Ethnic Grocery & Produce Stores	21
Large Retail	21
Small Retail	23
Totals	177

(a) Waste & Litter Reduction Benefits

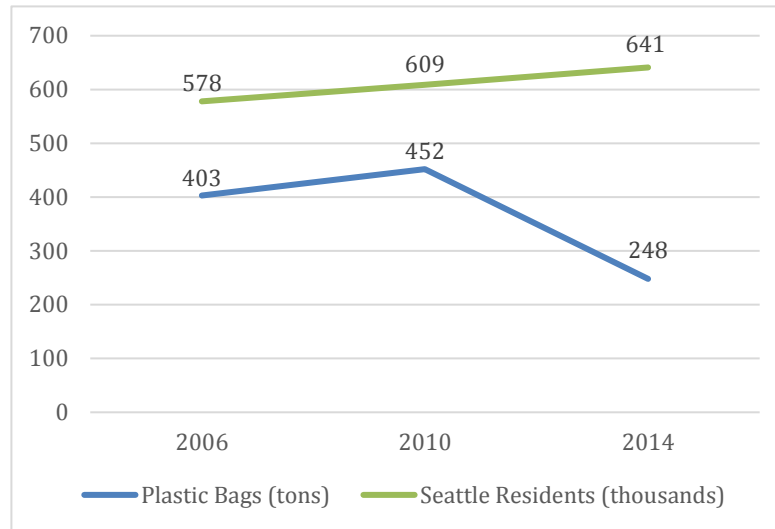
SPU has conducted periodic [composition studies](#) since 1988 to understand differences among the waste, recycling, and organic streams, evaluate potential for further recycling and composting opportunities, establish a baseline for measurement over time, and inform program improvements. *Table 2* summarizes the residential composition study reporting schedule and definition of the categories used in the waste, recycling, and organics composition study reports to capture plastic bags in each of these streams.

Table 2: SPU Residential Composition Study Reporting Schedule and Definitions

Stream	Reporting Schedule	Last Report	Next Report	Plastic Bag Category	Description
Waste (Garbage)	4 years	2014	2018	Clean Shopping and Dry Cleaner Bags	Labeled grocery, merchandise, dry cleaner, and newspaper polyethylene film bags that were not contaminated with food, liquid or grit during use. ³
Recycle	5 years	2015	2020	Plastic Bags and Packaging	Clean plastic retail, grocery, garbage, newspaper, drycleaner bags, and plastic shrink-wrap. Excludes all food and freezer bags, bags that are soiled or contain other items (i.e. paper advertisement, cosmetic samples, computer disks), and plastic kitchen wrap. Bags with non-plastic handles (e.g. string) are also excluded. ⁴
Organics	4 years	2012	2016*	Non-Compostable Film	Bags not approved by Cedar Grove and other film. Includes all merchandise and take-out bags. ⁵
*The 2016 Organics Stream Composition Study Report is still being finalized and has not yet been published.					

Based on the results of the [2014 Residential Waste Stream Composition Study](#), plastic bags in the residential waste stream declined by 45% from 2010 to 2014 (452 tons to 248 tons), while Seattle's population increased by 5% (*Figure 1*). *Appendix F* presents this data disaggregated into single-family and multifamily rates.

Figure 1: Plastic Bags in Disposed Stream



The litter reduction benefits of Seattle’s bag ban have been difficult to quantify due to the cost of conducting formal litter assessments. The estimated cost of a modest litter study is approximately \$50,000; the estimated costs of a comprehensive litter waste characterization study is approximately \$100,000-\$150,000.⁶ However, we can assume when fewer plastic carryout bags are provided to customers, fewer bags become litter, just as fewer end up in the garbage. Benefits include less marine debris, fewer bags clogging storm drains, and fewer bags to clean up through hand-picking and street cleaning. The few cities that have conducted litter studies pre- and post-bag ban ordinance show significant bag litter reduction results. *Table 3* below summarizes one city and one county for reference.

Table 3: Summary of Post-Ordinance Reduction in Plastic Bag Litter

Location	Reduction in Bag Litter Post-Ordinance		
	Storm Drains	Creeks	City Streets
San Jose, CA ⁷	-89%	-60%	-59%
Alameda County, CA ⁸	-44%	N/A	N/A

Recommended Next Steps: Zero Waste Washington and Washington State Department of Ecology are in the process of developing and piloting a comprehensive litter assessment protocol to provide a consistent and comparable measurement of litter composition throughout Washington State. Pending pilot results, SPU may find utility in integrating this protocol into existing litter-related programs or using information collected from Seattle clean-ups to establish a baseline plastic bag litter assessment.

(b) Strategies to Increase Bag Ban Compliance

Summaries of the bag ban compliance rates observed during 2016, 2017, and 2018 survey field work are provided in *Table 4* below.

Compliance is defined as follows:

- **Compliant (C):** does not use plastic bags and charges at least \$0.05 for large paper bags.
- **Partially Compliant (PC):** does not use plastic bags, but also does not charge the required \$0.05 for large paper bags.
- **Non-Compliant (NC):** uses plastic bags.

Sample sizes nearly doubled between 2016 and 2017 (25 to 49), and more than tripled from 2017 to 2018 (49 to 177). Observed compliance rates continued to increase from 64% in 2016, to 67% in 2017, and 82% in 2018.

Compliance rates were distributed fairly evenly across the City. 2017 survey results indicate that convenience stores have the lowest compliance rates among retail sectors at 33%. After increasing the sample size from 9 convenience stores in 2017 to 70 convenience stores (10 per council district) in 2018, a compliance rate of 71% was observed. Given the larger sample size and broader geographic distribution of samples for 2018, the 2018 results are believed to more closely approximate actual compliance rates.

Survey results suggest the following compliance barriers among **Non-Compliant** interviewees (n=25):

- **Awareness:** 44% of Non-Compliant interviewees reported they are unaware of the ban or have an incomplete and/or incorrect understanding of the ban (12).
- **Customer Preference:** 44% of Non-Compliant interviewees cited their customers' preference for plastic bags as a primary reason for non-compliance (12).
- **Language and Cultural Barriers:** 33% of Non-Compliant interviewees speak English as a second language, which can lead to communication difficulties and confusion around steps for compliance (9).

Survey respondents are not necessarily the decision-makers for the businesses. Employees, managers, and owners were interviewed based on their availability and willingness to participate. As such, survey responses may not be reflective of the primary decision-maker at each location.

Table 4: 2016-2018 Summary of Compliance by Retail Sector

Retail Sector	2016						2017						2018					
	C	PC	NC	C %	PC %	NC %	C	PC	NC	C %	PC %	NC %	C	PC	NC	C %	PC %	NC %
Convenience	4	0	3	57%	0%	43%	3	1	5	33%	11%	56%	50	6	14	71%	9%	20%
Pharmacy	5	1	0	83%	17%	0%	9	0	0	100%	0%	0%						
Grocery (general)	2	1	3	33%	17%	50%	11	2	4	65%	12%	24%	53	0	10	84%	0%	16%
Large Grocery							11	2	4	65%	12%	24%	21	0	0	100%	0%	0%
Medium Grocery													18	0	3	86%	0%	14%
Ethnic Grocery													14	0	7	67%	0%	33%
Apparel	5	0	1	83%	0%	17%	8	2	1	73%	18%	9%						
Large Retail													20	0	1	95%	0%	5%
Small Retail													23	0	0	100%	0%	0%
Other							2	1	0	67%	33%	0%						
Totals	16	2	7	64%	8%	28%	33	6	10	67%	12%	20%	146	6	25	82%	3%	14%

 Compliant
  Partially Compliant
  Non-Compliant

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To address these primary compliance barriers, SPU plans to pursue the following steps:

- **Awareness:** In addition to the 177 retailers already visited in 2018, Cascadia outreach consultants have 75 additional bag ban visits planned through the end of the 2018. Cascadia provided technical assistance to all non-compliant businesses and plans follow-up visits to ensure full compliance at these locations. SPU continues to provide technical assistance to retail businesses on the bag ban as part of normal geographic outreach and inspections. A portion of these site visits originate from citizens reporting plastic bag use at retailers and is looking into further promoting this public reporting channel SPU is considering sending an updated bag ban direct mailing as a reminder of bag rules and other recommended best practices.
- **Customer Preference:** SPU is developing new methods for engaging directly with consumers on the bag ban. An example is incorporating “Bring Your Own Bag” messaging into outreach materials. SPU is also considering pilot programs that would help businesses become compliant by providing them with a small stock of reusable bags to offer their customers in lieu of plastic carryout bags.
- **Language and Cultural Barriers:** SPU contracts with community partners like ECOSS, Tilth Alliance, and Cascadia Consulting Group, who have team members that provide culturally competent, in-language outreach to Seattle businesses. SPU will continue to support these outreach endeavors throughout 2018.

(c) Effectiveness in Reducing Non-Compostable Bags Contaminating the Compost Stream

An organics composition study has not been conducted since the bag tinting ordinance went into effect in 2017. The last study was conducted in 2016 and results are still being finalized (report has not yet been released). The next anticipated study is scheduled for 2020. However, a 90% compliance rate with the bag tinting requirements was observed among the 63 groceries surveyed in 2018. This sample size is nearly four times larger than the 2017 sample. This high compliance rate is an encouraging indicator that the number of tinted plastic bags in Seattle has declined, and with it, the likelihood for compost contamination.

Of the six businesses observed using Non-Compliant green tinted plastic bags:

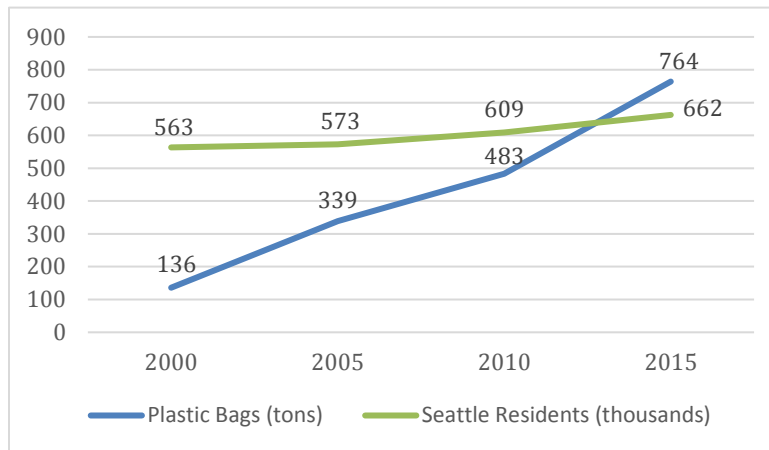
- Two businesses use green tinted thick plastic carryout bags (1 ethnic grocery, 1 medium grocery). 1 of these bags had “biodegradable” printed on it (medium grocery).
- Four businesses use thin green tinted produce bags (3 large grocery, 1 medium grocery).

SPU will continue to incorporate the bag tinting requirements into grocery outreach in 2018 and provide technical assistance to those stores observed using Non-Compliant tinted bags.

(d) Strategies to Address Impacts of Loose Plastic Bags in Curbside Recycling

The [2015 Residential Recycling Stream Composition Study](#) includes plastic carryout bags in the “plastic bags and packaging” category, which consists of: clean plastic retail, grocery, garbage, newspaper, and drycleaner bags, and plastic shrink-wrap. This category excludes: all food and freezer bags, bags that are soiled or contain other items (i.e. paper advertisement, cosmetic samples, and computer disks), plastic kitchen wrap, and bags with non-plastic handles (e.g. string). As shown in *Figure 2* below, Seattle saw a nearly 60% increase in plastic bags and packaging in the recycling stream from 2010 to 2015 (483 tons to 764 tons). Given that this category includes several items that are not plastic retail and grocery carryout bags covered by the ordinance, the results in *Figure 2* cannot be interpreted as a direct uptick in plastic retail and grocery carryout bags in the recycling stream. *Appendix F* presents this data broken out by single-family and multifamily rates.

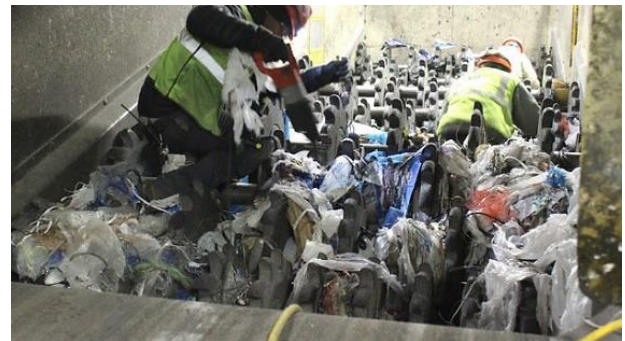
Figure 2: Plastic Bags & Packaging in Recycling Stream



Plastic bags and film have been accepted in Seattle’s curbside recycling program since 2009 with the instruction to “bag your bags,” which involves collecting all bags and film into one bag that is tied-off and placing in the commingled recycling cart. However, plastic bags and film have emerged as the most costly and pervasive problem items at Material Recovery Facilities (MRF). Plastic bags and film cause the following issues:

- Sorting Effectiveness and Contamination** - Even when bags are properly bundled and placed in curbside recycling carts, MRF operators are only able to remove about 25% of the plastic bags during the pre-sort process. The remaining bags consistently contaminate other baled commodities or obstruct processing equipment like sorting screens. Sorting screens are designed to let 3-dimensional objects fall through the machine’s discs while flat objects (like cardboard) continue through the sorting process. Plastic bags and film wrap around these discs, reducing their ability to sort recyclables effectively and increasing contamination levels over the course of the day.
- Processing Shutdowns and Safety Hazards** - Processing lines are shut down for an hour twice each day so that workers can climb into the machinery and manually cut the film out, which is both hazardous and time intensive (*Figure 3*). While plastic bags and film make up roughly 0.2% of incoming material by weight (about one bale per day), approximately 20-30% of recycling center labor is attributed to dealing with these materials, costing \$700-\$1,000 per ton to remove this material.⁹

Figure 3: Recycling facility workers cut plastic bags and film out of sorting screens*



Plastic bags and film also present several concerns as a marketable commodity, including:

- Low Quality Commodity with Limited Market Demand** - Plastic bags collected through curbside recycling are highly contaminated and the bales of film created from this stream at the MRFs typically do not meet domestic quality standards. As such, the film that is successfully sorted at the MRF has historically only been suitable for export markets in China and Southeast Asia. Even within these markets, oversupply and low cost of virgin plastic contributes to the low value of film collected at MRFs as a commodity.

- **China Operation Blue Skies (formerly National Sword) Policy** - Limited market demand for recyclable plastic bags and film has been further exacerbated by China's announcement of their Operation Blue Skies Policy, effective January 1, 2018. In 2016, China processed half of the world's exports of plastic, paper, and metal waste, but the new policy now limits imports in three key ways¹⁰:
 1. Bans the import of 24 recyclable commodities, including unsorted mixed paper and mixed plastics.
 2. Reduces contamination threshold to 0.5% for materials not covered by the ban (typical contamination standards for Seattle MRFs are 3-5%), effectively disqualifying mixed recyclable commodities from sale to China. Local MRFs have slowed down their processing by 25-30% and increased headcount 15% to reduce contamination.
 3. Suspends approval of all scrap paper import permits

Figure 4: Still frame from Jiu-Liang Wang's "Plastic China" documentary



China's Operation Blue Skies Policy was implemented to address concerns around: the poor quality of imported recyclable materials, severe environmental and human health impacts caused by poor recycling infrastructure, and China's desire to develop its own domestic markets for recyclable materials.¹¹ Jiu-Liang Wang's 2016 film, "Plastic China," is credited with putting an international spotlight on these issues as it documented the struggle of an impoverished family to survive by living and working in a plastic waste household-recycling workshop (Figure 4).

- **Environmental Justice Concerns** - Before the Operation Blue Skies Policy went into effect, Seattle's primary recycling processor exported nearly 100% of its recyclable materials (not including cardboard and metal) to China. With China essentially cutting off the import of recycled commodities, the U.S. is now exporting these materials to other countries in Southeast Asia. Countries such as Malaysia, Thailand, Vietnam, and India have increased their imports of recycled material by over 50%.¹¹ Many of these countries have less-developed pollution control measures than China and are already some of the biggest contributors of plastic waste to international waters.¹²
- **Global Marine Plastic Pollution** - The EPA estimates that about 80% of marine debris originates as land-based waste, intentionally or unintentionally disposed of into the marine environment. Plastic debris presents particular concerns due to its ability to persist in the marine environment and "fragment into progressively smaller and more numerous particles without substantial chemical degradation."¹³ A single plastic bag can fragment into up to 420,644 one mm² pieces of low-density polyethylene (LDPE #4).¹⁴

Microplastic fragments (less than 5mm in diameter) make up approximately 90% of the plastic in the marine environment and are frequently ingested by birds, fish, and other marine wildlife. Plastics in general threaten marine wildlife when they become entangled in items like plastic bags and six-pack rings or when plastics are ingested and block their intestines. Additionally, the bioaccumulation of plastic chemicals in these animals threaten the entire food chain. Floating debris consists mostly of polyethylene and polypropylene due to the prevalence of use and buoyancy.¹⁴

In summary, plastic bags and film collected in the curbside recycling program:

- severely contaminate otherwise valuable commodities;
- increase labor, processing costs, and safety hazards at MRFs;
- have limited viable markets, most of which are in Southeast Asia where there are already significant environmental justice concerns around the processing of these commodities; and
- contribute to global marine plastic pollution if improperly handled by importing countries.

The Washington State Department of Ecology (DOE) released a report in October 2016 entitled: [Optimizing the Commingled Residential Curbside Recycling Systems in Northwest Washington](#). This report was based on the findings of a workgroup formed in November 2012, comprised of government recycling staff, solid waste and recycling service providers, and recyclable materials processors who met monthly and provided their perspectives on the issues they face within each recyclable material category. The report identifies best practices for addressing the plastic bag and film issues noted above, including:

- Prioritize the collection of recyclables that:
 - have viable markets
 - MRFs can sort effectively
 - generate revenue
- Promote plastic bag and film collection at retailers already participating in film take-back programs.
- Consider removing plastic bags from accepted commingled curbside recycling materials list.

These best practices are further emphasized by industry leaders including the American Chemistry Council, which supports the [Wrap Recycling Action Program \(WRAP\)](#). WRAP establishes drop-off points at participating retail partners to collect bags and film so that they maintain a high enough quality to successfully sell domestically. Nina Bellucci Butler (CEO of More Recycling) is also a public advocate for developing viable [domestic end markets](#) for materials made from recycled plastic film to increase market demand to match supply. More Recycling is a research and consulting company that serves as a liaison between industry, public agencies, and NGO's, prioritizing accurate information and neutrality in the marketplace.

Given the concerns and best practices highlighted above, SPU is involved in or considering the following next steps:

- *Partner in discussion with neighboring jurisdictions around the state* - SPU is currently participating in several regional recycling task forces and workgroups that have been formed throughout the state in response to China's Operation Blue Skies Policy. These workgroups are collaborating on a coordinated message around contamination issues as well as materials that should be included/excluded in commingled recycling streams. One point of common agreement among these workgroups is that plastic bags and film are unsuitable for curbside collection. SPU will continue to have these discussions and participate in collaborative problem-solving efforts.
- *Consider removing plastic bags and film from the mix of materials accepted in Seattle's curbside recycling program* - The processing, contamination, marine pollution, and market concerns highlighted in detail above indicate a need to remove plastic bags and film as acceptable items in Seattle's commingled recycling program. SPU will take this under consideration and potentially pursue the appropriate steps towards making this change.

- *Promote existing retailer plastic bag and film take-back programs* – As an alternative to collecting plastic bags and film curbside, SPU will promote existing retailer take-back programs like WRAP. Retailer take-back provides less contaminated plastic bags and film material for more successful recycling through domestic markets and typically accepts a wider range of film plastics that are inappropriate for curbside collection. Retailer take-back of plastic bags is promoted by the Sustainable Packaging Coalition’s *How-to-Recycle* label system. SPU will work with the WRAP program, grocery and retail associations, local retailers, and other jurisdictions to increase the number of retailer locations providing take-back opportunities.

Figure 5: Example of Local Retailer Plastic Bag Take-back Location



- *Consider extending plastic bag ban to restaurants and third-party delivery services* - As noted previously in this memo, Seattle’s bag ban currently permits restaurants to provide customers with plastic carryout bags for takeout orders. With the increase in takeout orders and third-party delivery services like Uber Eats, Grubhub, and Caviar, SPU is considering following the lead of jurisdictions like Alameda County where the plastic bag ban has been extended to include restaurants (see *Appendix E* for overview of Alameda County ordinance). Survey respondents indicated that Seattle’s bag ban is confusing in part because different businesses are held to different standards: they feel it is “unfair” that some businesses (restaurants) can provide thin plastic carryout bags to customers while others can’t. By removing the exception for restaurants, SPU could apply the same rules across all businesses for consistency, simplicity, and fairness.

Figure 6: Amazon Shipping Envelop – example of labeling encouraging drop-off at take-back locations



Recommendations to Seattle City Council

While SPU will be pursuing those actions listed above, SPU has no recommendations for further Council action regarding the bag ban program, pass-through charges, or other provisions to improve program effectiveness.

Appendix A: Seattle Municipal Code 21.36.100 - Single-use Plastic and Recyclable Paper Carryout Bags

- A. No retail establishment in the City shall provide a single-use plastic carryout bag to any customer.
- B. No retail establishment in the City shall provide a paper carryout bag with a manufacturer's stated capacity of one-eighth barrel (882 cubic inches) or larger that is not a recyclable paper bag, and retail establishments shall collect a pass-through charge of not less than five cents for each recyclable paper carryout bag provided to customers. It shall be a violation of this Section 21.36.100 for any retail establishment to pay or otherwise reimburse a customer for any portion of the pass-through charge; provided that retail establishments may not collect a pass-through charge from anyone with a voucher or electronic benefits card issued under the Women, Infants and Children (WIC) or Temporary Assistance to Needy Families (TANF) support programs, or the federal Supplemental Nutrition Assistance Program (SNAP, also known as Basic Food), or the Washington State Food Assistance Program (FAP).
- C. Effective July 1, 2017, no retail establishment in the City shall use or provide polyethylene or other non-compostable plastic film bags tinted green or brown for customers to bag products in stores, as carryout bags, or for home delivery.
- D. Any film bags meeting the definition of compostable that retail establishments provide to customers for food or other products, such as vegetables bagged in stores prior to checkout, must be tinted green or brown and shall be clearly labeled "COMPOSTABLE," including language following the Federal Trade Commission's "Green Guides."
- E. No film bag that retail establishments provide to customers to bag products in stores, as carryout bags, or for home delivery may be labeled with the term "biodegradable," "degradable," "decomposable," or any similar terms, or in any way imply that the product will break down, fragment, biodegrade, or decompose in a landfill or other environment.
- F. All retail establishments shall indicate on the customer transaction receipt the number of recyclable paper carryout bags provided and the total amount of the pass-through charge.
- G. For purposes of this Section 21.36.100, the following definitions apply.
 - 1. "Carryout bag" means a bag that is provided by a retail establishment at the check stand, cash register, point of sale, or other point of departure to a customer for the purpose of transporting food or merchandise out of the establishment. Carryout bags do not include:
 - a. bags used by customers inside stores to package bulk items such as fruit, vegetables, nuts, grains, candy, greeting cards, or small hardware items, such as nails and bolts, or to contain or wrap frozen foods, meat or fish, whether prepackaged or not, or to contain or wrap flowers or potted plants, or other items where dampness may be a problem, or to contain unwrapped prepared foods or bakery goods, or to contain prescription drugs, or to safeguard public health and safety during the transportation of prepared take-out foods and prepared liquids intended for consumption away from the retail establishment; or
 - b. newspaper bags, door-hanger bags, laundry-dry cleaning bags, or bags sold in packages containing multiple bags intended for use as garbage, pet waste, or yard waste bags.

2. "Compostable" means that the product completely breaks down into a stable product due to the action of microorganisms in a controlled, aerobic commercial process that results in a material safe and desirable as a soil amendment meeting the compost quality standards found under WAC 173-350-220 for metals, physical parameters, pathogens, manufactured inert material, and other testing parameters set by the local Health Department, has been found to degrade satisfactorily at the composting facility receiving the material, meets standard specification ASTM D6400, and has been certified as compostable by the Biodegradable Products Institute or similar national or international certification authority.
3. "Pass-through charge" means a charge to be collected by retailers from their customers when providing recyclable paper bags and retained by retailers to offset the cost of bags and other costs related to the pass-through charge.
4. "Recyclable paper bag" means a paper carryout bag that has a manufacturer's stated capacity of one-eighth barrel (882 cubic inches) or larger and meets the following requirements:
 - a. Contains a minimum average of 40 percent post-consumer recycled materials, and
 - b. Displays the minimum percent of post-consumer content on the outside of the bag.
5. "Retail establishment" means any person, corporation, partnership, business venture, public sports or entertainment facilities, government agency, street vendor or vendor at public events or festivals, or organizations that sell or provide merchandise, goods, or materials including, without limitation, clothing, food, beverages, household goods, or personal items of any kind directly to a customer. Examples include but are not limited to department stores, clothing stores, jewelry stores, grocery stores, pharmacies, home improvement stores, liquor stores, convenience stores, gas stations, restaurants, food vending trucks, farmers markets, and temporary vendors of food and merchandise at street fairs and festivals. Food banks and other food assistance programs are not considered to be retail establishments for the purposes of this Section 21.36.100.
6. "Single-use plastic carryout bag" means any carryout bag made from plastic or any material marketed or labeled as "biodegradable" or "compostable" that is neither intended nor suitable for continuous reuse as a carryout bag or that is less than 2.25 mils thick.

(Ord. 125165, § 1, 2016; Ord. 123775, § 1, 2011)

Appendix B: Summary of Bag Ban Policy & Intended Outcomes

Bag Type	Summary of Policy	Intended Outcome(s)
 Plastic	Retailers may not provide customers with thin plastic carryout bags (pictured at left).	Reduce waste, conserve energy and resources, prevent contamination, reduce litter and pollution.
	Non-compostable plastic bags may not be tinted green or brown or labeled as “biodegradable,” “degradable,” “decomposable,” etc.	Avoid confusion with compostable plastic bags and prevent contamination.
	Retailers may provide reusable plastic carryout bags (≥2.25 mil thick).	Plastic bags ≥2.25 mil thick are considered reusable and typically used when paper is not a good alternative or readily available.
	Restaurants may provide plastic carryout bags to customers for takeout food.	Restaurants may provide plastic carryout bags to their customers for prepared foods to prevent leaks or spills.
 Paper	Retailers providing large paper carryout bags (≥ 1/8 barrel with a flat bottom ≥ 60 in ² – pictured at left) must collect a pass-through charge of ≥ 5¢ per bag. Number of bags and total cost of paper bags must be listed on customer receipt.	Charging for bags and listing on customer receipt reminds customers to bring reusable bags. Requiring all retailers to charge for bags levels the playing field among retailers so they do not “eat” the cost of the bags.
	Large paper bags must contain a minimum average of 40% post-consumer recycled materials and display the minimum percent of post-consumer content on the outside of the bag.	Support demand for post-consumer recycled content as a preferred alternative to using raw materials.
	Retailers may not collect a pass-through charge from anyone with a voucher or electronic benefits card issued under the Women, Infants and Children (WIC) or Temporary Assistance to Needy Families (TANF) support programs, or the federal Supplemental Nutrition Assistance Program (SNAP, also known as Basic Food), or the Washington State Food Assistance Program (FAP).	Avoid disproportionately burdening low-income customers with charge.
 Compostable Plastic	Retailers may provide customers with compostable plastic produce or bulk food bags (if tinted green or brown and labeled “compostable”).	Avoid confusion with non-compostable plastic bags and prevent contamination.
	Retailers may not provide customers with compostable plastic carryout bags.	Compostable bags are specifically designed as liners for kitchen food waste containers and carts. Customers receiving compostable bags as shopping bags are more likely to recycle them with regular plastic bags which can prevent successful remanufacture of the plastic.

Appendix C: 2016-2017 Summary of Next Steps and Current Status

2016 Summary of Next Steps

Action Item	Current Status
Removing the five-cent paper bag charge sunset date. SPU will be proposing revisions to the bag ban ordinance to remove the end date for the five-cent charge to customers for large paper bags. This was identified as very important for businesses to cover their increased bag costs and will also continue to serve as a reminder to citizens to bring their reusable bags when shopping.	Completed. Ordinance Number 125165, passed October 3, 2016. Effective July 1, 2017.
Limiting plastics contamination of food and yard waste. SPU's staff participate in the Washington Compost Contamination Work Group. Additionally, SPU will be proposing revisions to the bag ban ordinance that will include restricting green tinting to compostable bags only. This proposal will address the confusion and contamination that green tinted non-compostable bags cause.	Completed. Ordinance Number 125165, passed October 3, 2016. Effective July 1, 2017.
Addressing reusable bag cleanliness. SPU will publicize the importance of regularly washing reusable bags.	KGW8 News Coverage: https://www.kgw.com/article/life/wash-reusable-grocery-bags-says-seattle-official/283-287537756
Increasing bag ban compliance in small and independent grocery and convenience stores. SPU is currently developing a renewed outreach strategy to target these businesses. Options being considered are a mass mailing to retail businesses that provide bags to the public and in person visits.	SPU sent a flyer to all grocery store, retail store, and convenience store sites (5,890) in the 1 st quarter of 2017 about the new bag requirements and resources available from SPU.
Reducing loose plastic bag impacts in curbside recycling. SPU will explore bringing the Wrap Recycling Action Program (WRAP) to Seattle and across Washington in collaboration with industry, retailers, and other governments to reduce the number of loose plastic bags in Seattle's curbside collection. While the implementation of WRAP is explored, SPU will continue messaging to people that plastic bags must be bundled in a larger plastic bag if it is to be placed in curbside recycling.	WRAP agreed to bring more concerted efforts to expand and promote the program state-wide to Washington and Oregon but found retailer organizations generally disinterested. More targeted retailer expansion combined with state-wide campaigns planned for early 2018 were "put on hold" due to concerns about domestic market capacity for clean film from retailer collection programs. WRAP is focusing more on market development than program expansion. SPU continued messaging that plastic bags must be bundled and placed in a larger plastic bag before being placed in curbside. This effort has been ineffectual at addressing the

Action Item	Current Status
	impact of plastic bags on Material Recovery Facilities and contamination of paper and other commodities. The resulting plastic film bales are too dirty for domestic markets and are currently shipped to markets in Southeast Asia.
Encouraging work to make flexible packaging recyclable. SPU is working through industry groups such as the Sustainable Packaging Coalition to encourage industry to make flexible packaging recyclable, to establish collection programs similar to WRAP for its collection, to develop equipment necessary to sort and process it for recycling, and to develop markets for the resulting materials.	SPU continues to engage with individual companies and industry groups exploring issues around collection, processing and markets for flexible packaging. This effort is incremental and exploratory in nature.

2017 Summary of Next Steps

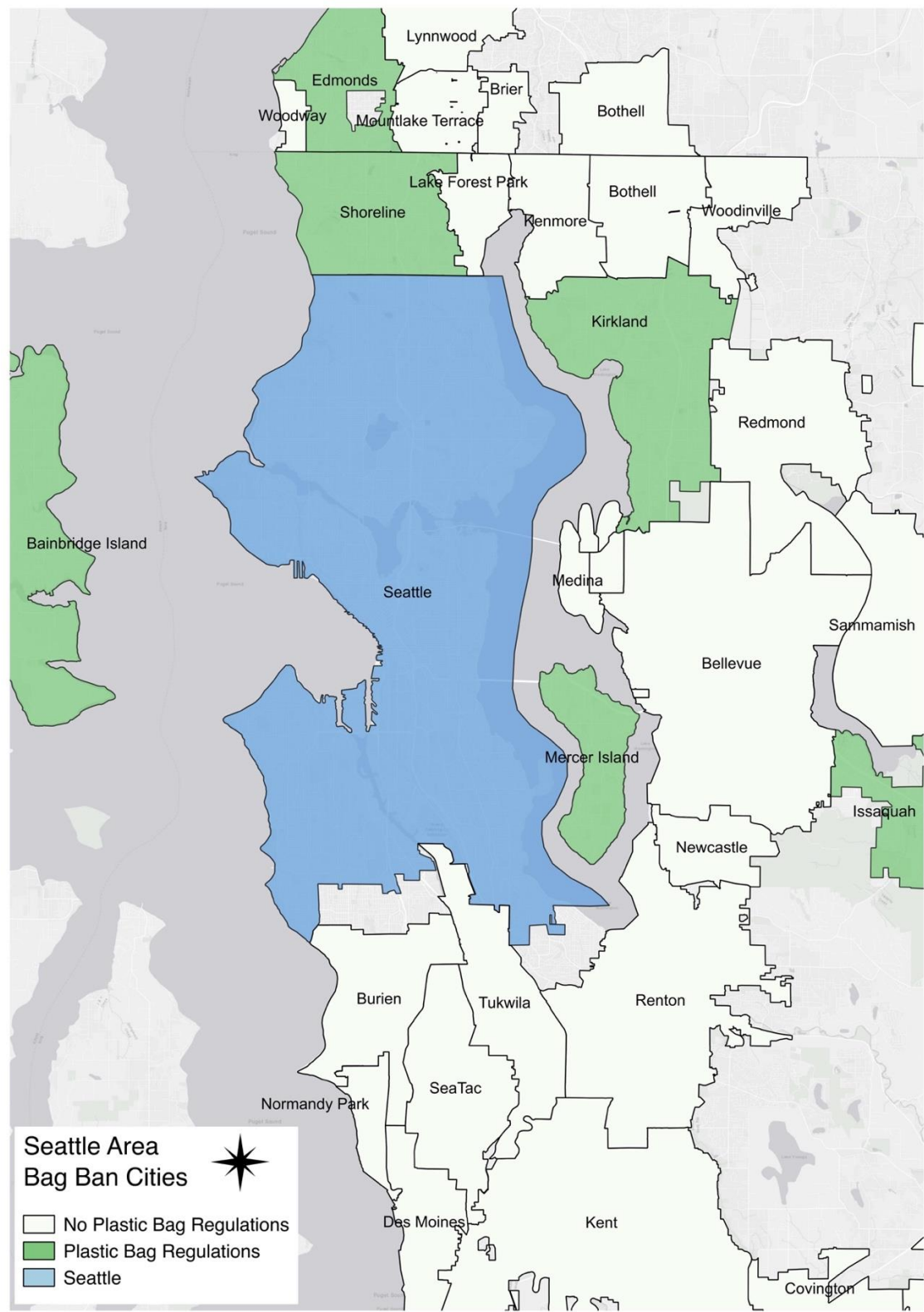
Action Item	Current Status
<i>Waste & Litter Reduction Benefits</i>	
Continue to look for examples of plastic bag ban related litter studies conducted elsewhere to consider their findings and potential for replication in Seattle. SPU will also consider collaborative efforts to document litter reduction strategies.	As documented in Section (a) of this memorandum, the litter reduction benefits of Seattle's bag ban remain difficult to quantify due to the cost prohibitive nature of conducting a formal litter assessment. SPU will consider integrating Zero Waste Washington's new litter assessment protocol into existing litter-related programs or utilizing information collected from Seattle clean-ups to establish a baseline plastic bag litter assessment.
Continue to have a separate category for plastic shopping bags in SPU's periodic residential waste composition study and consider further refinements to that category prior to the next scheduled study.	To be addressed as each composition study is contracted and designed.
<i>Strategies for Increasing Bag Ban Compliance Rates</i>	
Continue to use new ordinance requirements to refresh and relaunch Seattle bag requirements outreach and education.	SPU's bag requirements flyer has been revised and provided to stores during site visits.
Implement outreach, education, and enforcement strategy with focus on grocery stores beginning July 2017, continuing in 2018.	SPU staff continue to visit grocery stores to inspect, inform, and educate about bag requirements.
Develop and include in 2018 Bag Ban Update Report to Council strategy and materials for focus on convenience stores in late 2018, continuing in 2019.	Completed and documented in 2018 memorandum. Given the high compliance rates observed at 70 sampled convenience stores in 2018, SPU determined this retail sector does not need a dedicated outreach/inspection strategy outside of planned geographic outreach.

Action Item	Current Status
Document compliance through these efforts and through future periodic surveys and site visits by Evans School Student Consultants, if available.	Completed and documented in 2018 memorandum.
<i>Effectiveness of Ordinance in Reducing Plastic Bags Contaminating Waste Streams</i>	
Continue to work with the Washington Organics Contamination Reduction (WORC) Workgroup to address plastic film and other contamination issues.	In June 2017, WORC published The Washington State Organics Contamination Workgroup Report and Toolkit addressing plastic film and other contamination issues. SPU continues to participate in regional work group meetings when convened.
Add categories to SPU's future residential organics composition studies to include categories such as green tinted plastic bags containing food scraps, clear plastic bags containing food scraps, other plastic packaging containing uneaten food, and compostable bags. This will also assist SPU's efforts to understand when food is wasted and how to prevent food waste.	To be addressed as each composition study is contracted and designed.
<i>Strategies for Addressing Impacts of Loose Plastic Bags in Curbside Recycling</i>	
Continue to emphasize that bags placed in recycling carts must be bagged.	As noted above, SPU has continued emphasizing "bagged bags" in our messaging, but it has been ineffectual at addressing the impact of plastic bags on Material Recovery Facilities and contamination of paper and other commodities. The resulting plastic film bales are too dirty for domestic markets and are currently shipped to markets in Southeast Asia.
Consider if revisions to categories used in future residential recycling composition studies are warranted. It may be useful to separately categorize bagged bags from single bags for instance.	To be addressed as each composition study is contracted and designed.
Continue to pursue expanded retailer bag take back programs. SPU and others in the region have begun discussions with the WRAP program and retailer organizations about expanding WRAP participation throughout Seattle and the region.	WRAP agreed to bring more concerted efforts to expand and promote the program state-wide to Washington and Oregon but little progress was made and adequate resources were not invested by the WRAP program. As a result, state-wide campaigns planned for early 2018 were canceled.
Explore what would be required for plastic bags from curbside collection to be processed domestically.	Bales of plastic bags and film collected from curbside recycling are too dirty for domestic markets and are currently exported to Southeast Asia. Plastic film wash facilities to clean the curbside bags could result in cleaner material, but that material would have to compete for limited markets with the very clean film collected through retailer collection

Action Item	Current Status
	programs. On top of the high costs and impacts of sorting at material recovery facilities, additional costs would be incurred for transport and washing at a film wash facility.

Appendix D: Neighboring Cities with Bag Bans

Image Credit: Nora Haider, Evans School Graduate Consultant



For Restaurants and Delivery Services

On November 1, 2017, the Reusable Bag Law for Alameda County expanded to include all eating establishments, which includes delivery services and ordering platforms. The requirements of the new law are as follows:



1. No more single-use plastic bags.

As of November 1, 2017, eating establishments (and their delivery services/providers) in Alameda County can no longer distribute single-use plastic bags.



2. No charge for paper bags.

Recycled content paper bags may be distributed for free. If your eating establishment only distributes compliant paper bags, no additional action is necessary.



3. Protective plastic bags without handles are allowed.

The law only applies to carryout bags, not to paper or plastic bags without handles that are used to protect food (such as around containers of soup or stew to prevent spilling).

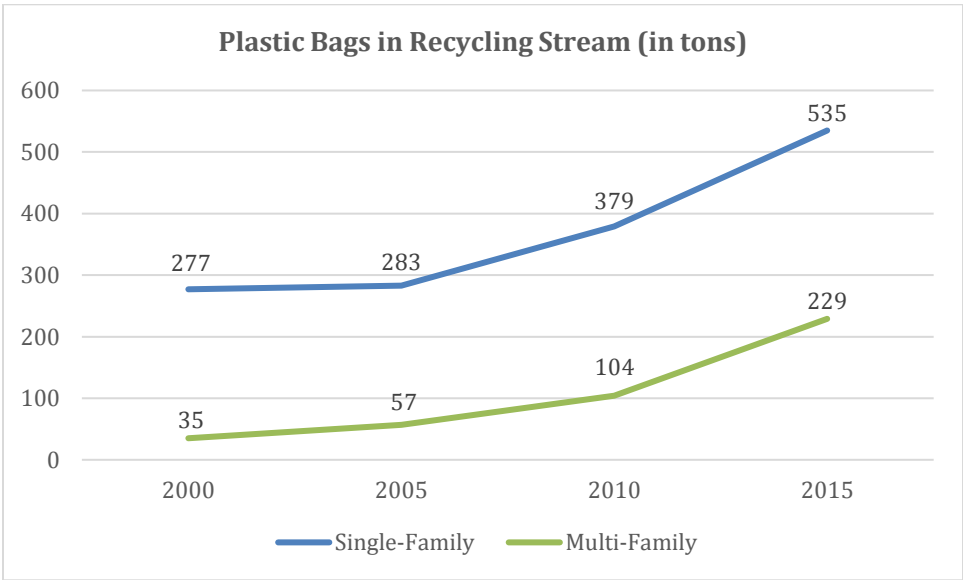
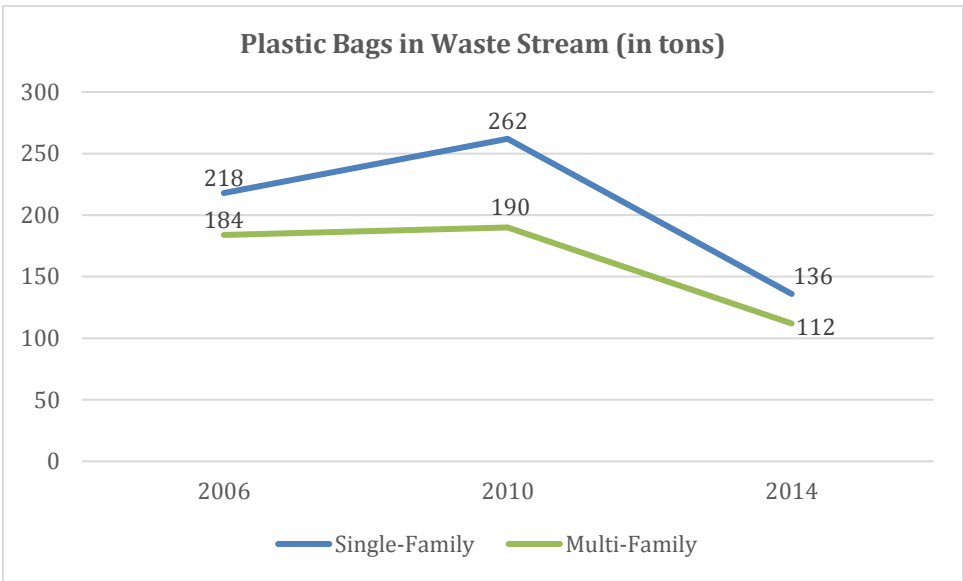


4. Charge 10 cents for reusable bags.

Compliant reusable bags (including thick, reusable plastic bags) may be distributed if at least ten cents is charged and itemized on the receipt. The eating establishment keeps the 10 cent charge, which is not subject to sales tax.

Appendix F: Plastic Bags in Single-Family & Multifamily Waste and Recycling Streams

Figures below use numbers reported in SPU’s waste and recycling composition studies from 2000 – 2015.



References

¹ Zero Waste Resolution (30990)

² City of Seattle Ordinance Number 123775

³ SPU 2014 Residential Waste Stream Composition Study Report

⁴ SPU 2015 Residential Recycling Stream Composition Study Report

⁵ SPU 2012 Organics Stream Composition Study: Year-End Report

⁶ Chris Sommers (EOA, Inc.), Katie Kennedy (Cascadia Consulting Group)

⁷ <https://www.mercurynews.com/2013/07/16/do-plastic-bag-bans-really-reduce-litter/>

⁸ <http://www.stopwaste.org/resource/alameda-countywide-storm-drain-trash-monitoring-and-characterization-project>

⁹ Washington State Department of Ecology Northwest Region Report: Optimizing the Commingled Residential Curbside Recycling Systems in Northwest Washington

¹⁰ <https://ecology.wa.gov/Waste-Toxics/Reducing-recycling-waste/Residential-recycling-services>

¹¹ <https://resource-recycling.com/recycling/2018/01/16/exports-displaced-china-finding-home/>

¹² <https://www.statista.com/chart/12211/the-countries-polluting-the-oceans-the-most/>

¹³ <https://www.epa.gov/trash-free-waters/toxicological-threats-plastic>

¹⁴ Personal communication Rachael Miller, Rozalia Project, Volvo Ocean Race Infographic May 2018 (not yet published.) Estimate calculated by the [Rozalia Project](#) based on the total surface area/dimensions of a large grocery bag. Handles(2): lh=101.4mm, wh=127; front and back panels(2): lfb=431.8mm, wfb=279.4mm; side panels(2): ls=431.8, ws=177.8mm. Total surface area = 2(lhwh+lfbwfb+ls ws) = 420,644 mm²

¹⁵ <http://reusablebagsac.org/restaurants/requirements>