

Preliminary Single-use Item Reduction Results

Single-use Item Reduction Bylaw

Developing a Plan to Reduce Single-use Items and bylaw was one of the 10 actions of the City's Waste Reduction Roadmap '24. The goal of the single-use item (SUI) reduction strategy and bylaw is to reduce SUI consumption¹ by 10 per cent per person by 2025 and 20 per cent by 2027. To meet these goals, Bylaw 20117 - Single-use Item Reduction (the Bylaw) was introduced in July 2023 to regulate single-use polystyrene foam cups and takeout containers, foodware accessories, cups and shopping bags. Voluntary programs were offered for SUIs that are not covered by the Bylaw, like paper and plastic takeout containers.

Methodology to Determine Single-use Item Consumption

To track if the City is meeting its goals, Administration conducts four-season waste characterization studies (WCS) to understand what items were generated at home before and after Bylaw implementation. A WCS examines the composition of waste in samples taken from a specific collection service or geographic area. Over a two or three week period, collection trucks from across Edmonton transport waste to their respective processing facilities. Samples are selected from the tip floors of these facilities and manually sorted by auditors into bins that represent specific categories of waste. After all categories are recorded, waste characterization percentages (by weight) for each stream is calculated. Sampling and sorting is conducted in accordance with methodology set out in the Provincial Waste Characterization Framework² prepared by the Canada Council of Ministers of the Environment. This information on waste composition and the tonnage were analyzed to estimate the total SUIs generated from residential waste collection. WCS was conducted from fall 2022 to summer 2023. This is considered the SUI Baseline (see Figure 1). A WCS is currently being conducted, beginning in spring 2025 and will conclude in winter 2026. Figure 2 contains a three-season comparison of per person SUI consumption between the 2022-23 and 2025 studies.

To snapshot the SUI reduction in commercial areas, similar summer studies in 2023 and 2025 were conducted for

¹ Items that are provincially regulated, such as beverage containers, are not within the scope of the Bylaw or reduction targets.

² Alberta Environment, Government of Canada, Action Plan 2000 on Climate Change (Enhanced Recycling Program) and the Recycling Council of Alberta. [Provincial Waste Characterization Framework](#), October 2005.

materials in public waste containers in Business Improvement Areas (BIA), which the City collects.³ The SUI reviewed include paper and plastic retail bags, disposable cups, utensils, straws and takeout containers. Materiality (e.g. polystyrene foam, plastic, paper) is taken into consideration for each SUI category. Figure 3 contains a comparison of SUI found in public waste containers.

SUI Reduction from Residential Buildings

2022-23 SUI Baseline

Using the data from fall 2022 to the end of summer 2023, Administration estimated that 8,287 tonnes of SUI were disposed of at home. That’s more than 450 million items, or 405 per person.

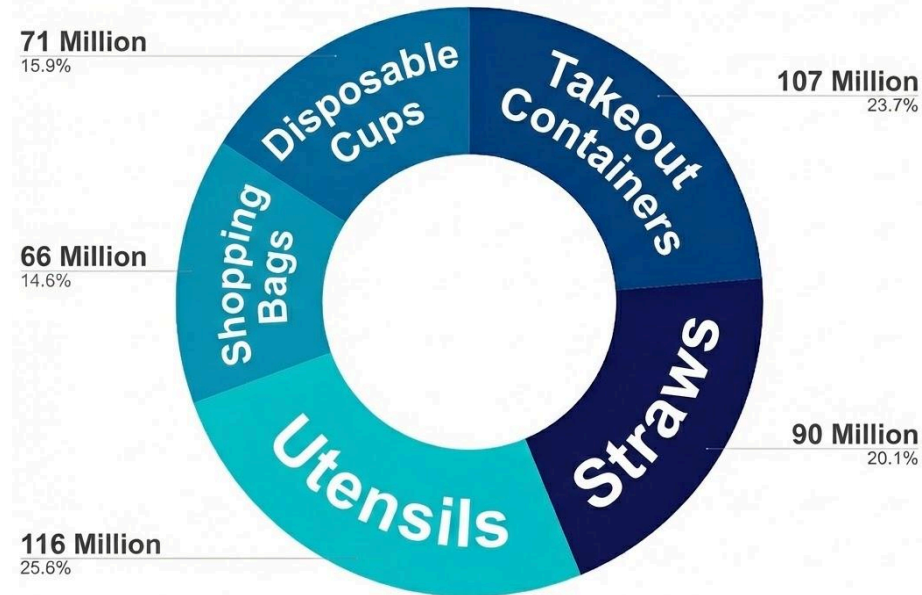


Figure 1. 2022-2023 Pre-Bylaw Single-use Item Composition in Residential Waste.

³The City is not responsible for the collection or processing of non-residential waste and does not have the data to analyze the overall impact of SUI reduction in the non-residential sector.

2022-23 vs. 2025 Preliminary SUI Numbers

The current four-season residential WCS will be completed in spring 2026, and a memo will be provided to Council after the full results have been analysed. For the interim, Administration has generated a three-season (spring, summer, fall) comparison of SUI consumption, summarizing the data to show Edmonton’s SUI reduction progress.

| Table 1. Comparing Single-use Item Consumption Per Person: 2022-23 to 2025 | | | |
|--|------------|------------|--------------|
| Waste Characterization Season | 2022-2023 | 2025 | Change |
| Spring | 111 | 111 | 0% |
| Summer | 102 | 100 | -2% ↘ |
| Fall | 111 | 92 | -18% ↘ |
| Three-season Total | 324 | 303 | -7% ↘ |

SUI consumed per person reduced as time passed; the reasons may include seasonal variation in waste generation and the time required for people to adopt new waste reduction habits. The cumulative results show a seven per cent decrease per person. Important trends that have been identified include the significant decrease in items covered by the Bylaw and the increase in items not covered by the Bylaw (i.e. take away containers), as shown in Figure 2 below.

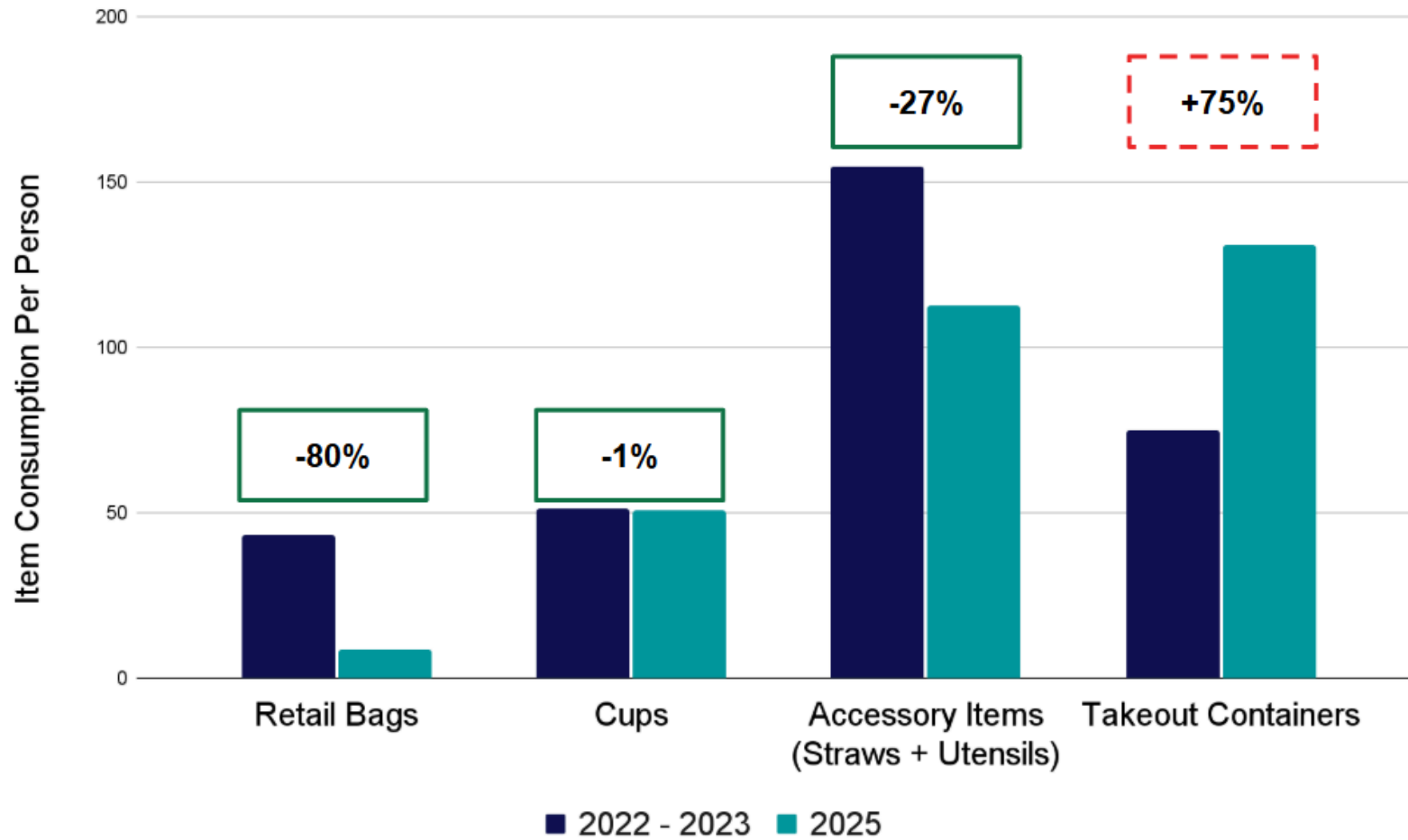


Figure 2. Per Person Single-use Item Consumption from Spring, Summer and Fall Residential Collection

SUI covered by the Bylaw have decreased by 33 per cent at home, highlighting the effectiveness of the regulation. Styrofoam takeaway containers that are banned under the Bylaw and Federal Single-use Plastics Prohibition Regulations, saw a 98 per cent decrease in their per person consumption. However, paper and plastic takeout containers not covered by the bylaw have increased by 97 per cent. The wider adoption of food and grocery delivery services are believed to be the main contributing factors to all increases shown in Figure 2. Reusable bags are not included as they are not considered SUI.

Bag Disposal at Home

Single-use paper and plastic bags, as well as reusable bags made of any material, were regulated by the Bylaw. Table 2 compares the number of bags disposed of per person. When single-use plastic and paper bag consumption is combined, the per person disposal of SUI bags has decreased 80 per cent below the 2022-23 baseline.

| Table 2. Preliminary Results: Per Person Bag Disposal at Home | | | | |
|--|-------------------------|-----------------------|---------------------------|--------------------------|
| Study (Three-season) | Plastic Bags | Paper Bags | SUI Bags Total | Reusable Bags |
| 2022-23 Total | 37 | 6 | 43 | n/a ⁴ |
| 2025 Total | 5.5 | 3 | 8.5 | 4 |

SUI Reduction in Public Areas

Waste characterization studies on public waste containers were conducted in the summer of 2023 and 2025. The study collected waste from seven BIAs to estimate the waste composition of all public waste containers in the City and the Bylaw’s impact on SUI generated from businesses. The results show a four per cent increase in SUI disposed of in public waste containers per person. However, the total number of regulated items per person decreased by 11 per cent, while unregulated takeout containers increased by 89 per cent per person, similar to residential SUI waste.

⁴ Reusable bags were omitted from the 2022-23 waste characterization study and a baseline will be established in the 2025-26 study. The reusable bags baseline will be reviewed with the next planned study to occur before 2030.

The increase in paper cups and takeout containers is believed to be associated with lack of regulation on these take-away beverage and food containers, changing behaviour habits normalizing takeout and delivery, and a population increase of 12 per cent.

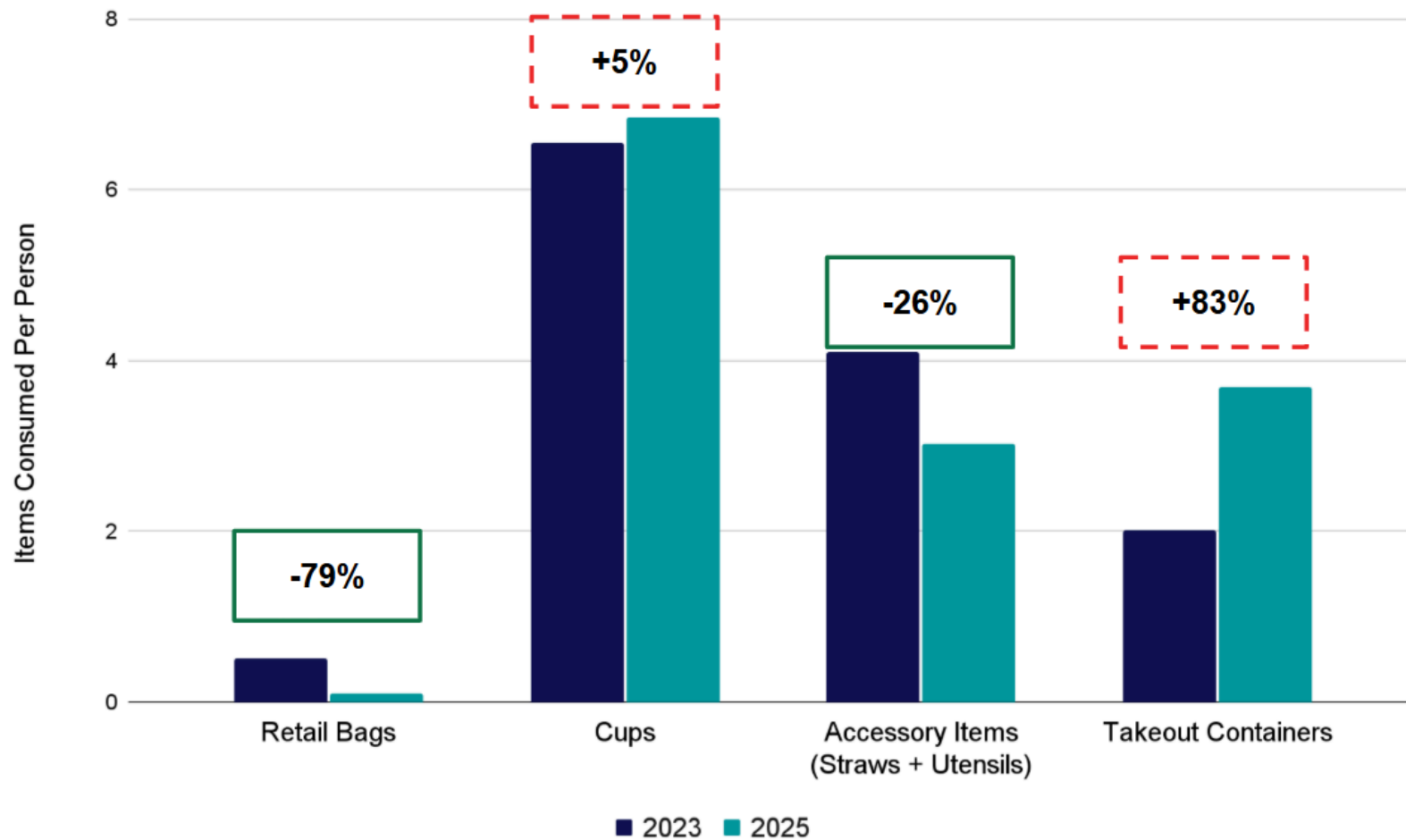


Figure 3. Comparison of Per Person Consumption of Single-use items from Public Waste Containers