

# Plastic consumption in a city – which product groups and amounts matter most?

*Sustainable use of plastic articles and materials – statistics as a startpoint to plan the actions*

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# Plastic flow through Stockholm municipality

## Consumables

Plastic or partially plastic, single or multiple use

- Purchase system statistics (14 central contracts, 4 400 articles)
- Weight and type of plastic for 25% of the articles, approximation

## Other plastics

Packaging materials, electronics, cars, furniture, textiles, building materials

- Weight of packaging materials, statistics on food purchases, input from other parts of the city, approximations.

## Inhabitants' plastic use

Purchases, use and waste

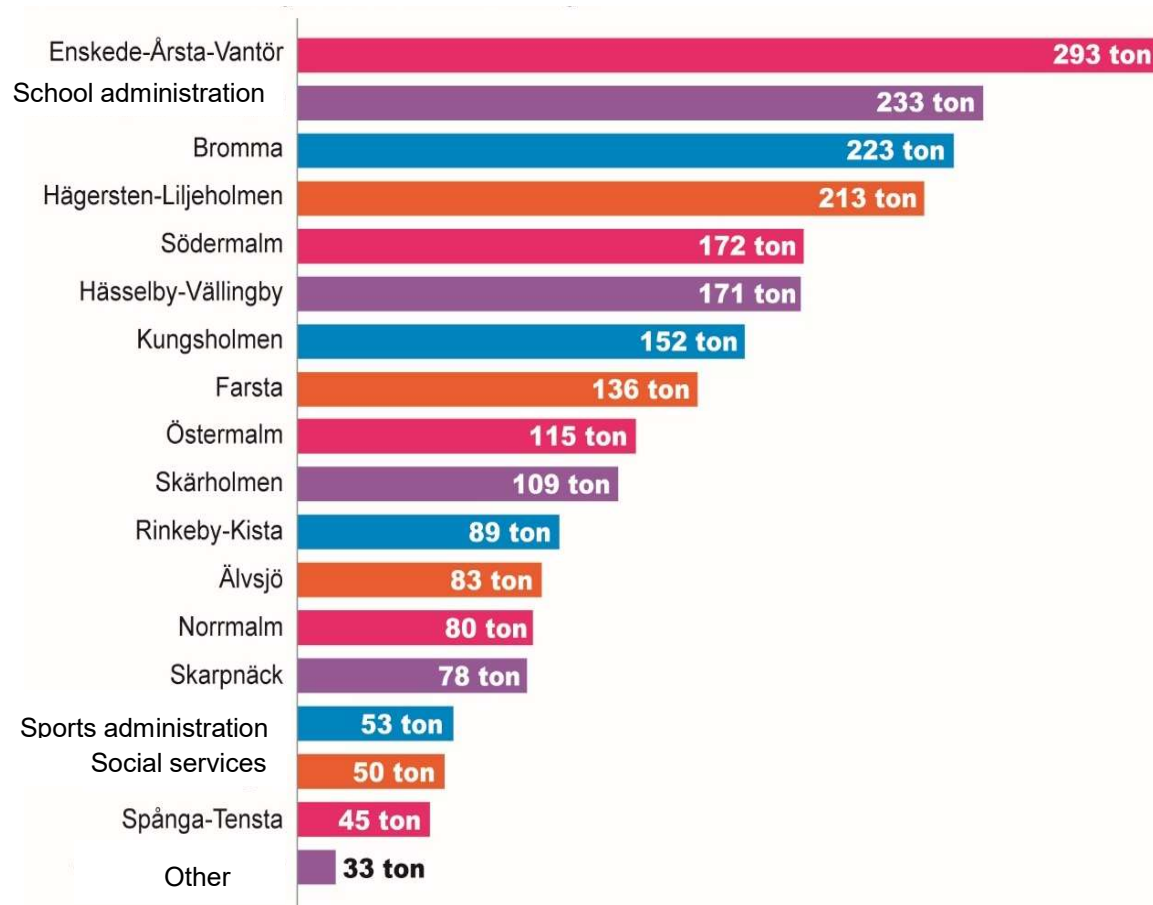
- Publicly available data
- Different sources, private, business, municipal (overlap)
- Amount for material recycling or energy retrieval (statistics and approximations)

## Purchased consumables, top 14 articles on weight

Article	Number of unique articles	Amount purchased (millions)	Total amount of plastic (tonnes)	Plastic polymer
Examination gloves	23	23	140	PVC, nitril, PE
Diapers	24	5,2	130	Plastic mix
Plastic bags of different sorts, sanitary bags	159	11,8	119	PE, recylced plastic, bio-based plastic
Incontinence protection	112	2,1	105	Plastic mix
Single use aprons	14	1,7	52	PE
Plastic packaging for chemical & cosmetic prod.	260	0,6	44	PE, PP
Washcloths, sponges etc	75	4,4	44	PUR, nylon etc
Folders (office materials)	33	1,3	13	PE, PP, plastic mix
Single use bibs	2	1,2	12	PE, PP
Shoe protection (?)	6	3	7	PE
Single use FCM, containers	32	0,3	6	PE, PP
Mugs, plastic glasses etc	24	1,8	5	PP, PS, bio-based plastic
Pens	179	0,7	5	Plastic mix
Cutlery	14	0,9	3	PS, bio-based plastic
<b>TOTAL</b>	<b>957</b>	<b>58</b>	<b>685</b>	

# Consumables

- Approximate total of ca 2 320 tonnes of plastic
- The operative units (preschool, school, elderly care) use 85% of the consumables. Municipal companies not included.
- Procured services are not included



# Plastic types

Plastic type	Amount (tonnes)	Fossil or renewable source
PE	760	Fossil
Plastic mix	570	Fossil
PVC	310	Fossil
PP	110	Fossil
Synthetic rubber	100	Fossil
PS	30	Fossil
Other plastic types	190	Fossil
PE, PP, PLA	250	Recycled fossil, renewable
<b>Fossil 2070, renewable 250</b>		



Contract management

To use or not to use?

179 different types of pens, plastic mix



# Other plastics

Chemical products packaging, 44 tonnes

Food packaging approximation, 373 tonnes (187-560 tonnes)

- Amount of food bought in kg, weighing of packing materials (2,4% plastic per kg food) →  $15,5 \text{ million kg} * 0,024 = 373 \text{ tonnes}$

Packaging materials total?

Computers, 12-18 tonnes

- 24 300 computers per year are exchanged, assumption that 33-50% of the weight of ca 1,5 kg per computer is plastic → flow of between 12-18 tonnes of plastic annually

Electronic equipment (computers, printers, IT- and AV-equipment, total?)

Cars 64 tonnes

- Bought or leased cars 2019: 213 st. with an assumed plastic content of 300 kg per car (general statistics)

Furniture, unknown amounts of plastic, purchases for around 170 million sek

Other: Textiles of different sorts, access cards, health care equipment etc etc

## Conclusions – suggestion for a strategy

- Procurement, recycled plastic, bio-based plastic, other materials
- Use-phase: multiple use items, paper instead of plastic
- Contracts for adequate processing of waste (=resources!)

