



PO Box 247
Westwood, MA 02090
781.329.8318
director@ssrcoop.info
ssrcoop.info

From: Claire Galkowski, Director

To: SSRC Board

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Subject: Plastic bag ban implications for municipal solid waste programs

At our December Board meeting, I asked the Board to consider taking a position on local bans on plastic bags. The Board directed me to send out more information to help Members make an informed decision. I reviewed many studies, surveys and articles. I have since double checked my math.

Five plastic bag ban advocates attended and spoke at our January Board meeting.

Executive summary:

Without the ability to mandate a visible fee on non-restricted bags, the use and disposal of paper bags will increase significantly.

Based on several data sources, I estimate that overall waste from additional paper bag use would amount to about **12 tons /1000 households/year**. This assumes conservatively that a third of households would opt to take free paper bags rather than bringing their own.

Of this, about 7.5 tons/1000 HH/year would be recycled, 4.5 tons/1000 HH/year disposed based on current recovery rates. Average cost to towns: \$1/Household served/year. If every town on the South Shore passes fee-less plastic bag bans, total cost to our towns would be in the range of **\$100,000**.

In addition, this policy has other net negative impacts on retailers and the environment.

Advocates speculate that local bans could pressure the state legislature to pass a statewide plastic bag ban with a fee. Under the current Speaker, who has no term limit, legislation that involves consumer fees or taxes never reach the floor for a vote. Last session's bag ban had the fee stripped in committee, and never came to the floor for a vote.

Plastic bag ban studies, surveys and articles

- Towns (as opposed to cities) may not mandate that retailers charge fees on paper bags (or any other product), according to the Attorney General.

- Westwood surveyed 600 residents in 2018, [here](#). Of those who indicated they don't usually bring their own reusable bags, 38% said if plastic bags were banned, they would bring their own bag. Half would take paper bags, the rest would shop elsewhere.
- [This study](#) by UCal Berkeley shows that even with fees, paper bag use in three municipalities studied increased, by a lot in one of the towns. See bar graphs near end.
- Conversely, KQED (CA) found that a 10c fee did reduce paper bag use in some towns, but not so without a fee, in this [article](#) covering many aspects of bag bans enacted there. It cites the English study. It noted that there was very little impact on litter.
- [This study](#) by the Equinox Center in CA examined 2 cities and a county that implemented bans with fees. It has good LCA and behavior info, but doesn't address no-fee policies.
- [Here](#) is the most rigorous Life Cycle Analysis I've found that was not funded by industry. It was done by the British government in 2011, and is cited in several other studies and articles I looked at. Its main flaw, as for the others, is not quantifying litter impacts.
- The OR DEQ released a packaging life cycle analysis [meta-study](#) recently. It concludes that recyclability, recycled content and other "green" attributes don't necessarily make a material environmentally preferable when other impacts are considered.
- The BBC did a [piece](#) about British bag bans and paper impacts recently.

Pros:

- Potentially reduces plastic bag contamination in recycling
- Reduces plastic bag litter
- Reduces plastic pollution in ocean and its impacts on marine life
- Encourages some customers to bring reusable bags

Municipal solid waste impacts:

- Increased paper bag use – many customers take the “free” paper bags.
- Increased plastic use- the thicker bags allowed by many bag ban bylaws are intended to be reusable, but in practice are often treated as disposable bags, and discarded or littered.
- Higher costs to municipalities – increased recycling and trash tonnage due to increased paper bag use. (<http://www.allaboutbags.ca/papervplastic.html> bullet 4)
 - 1000 paper bags weigh 121 lbs. (91 lb/750 bags)
 - 2000 plastic shopping bags weighs 27 lbs. (equivalent carrying capacity of 1000 paper bags) (20 lb/1500 bags)
 - Based on [the English study](#), the average household consumes the functional equivalent of 750 paper grocery bags/year, or 1500 HDPE plastic bags. This is fairly consistent with US numbers, which are higher for paper, lower for plastic (so conservative).

- NRDC separately estimates that the average American uses 1500 plastic bags/year.
- If bag bans result in a third of households switching from plastic bags to paper bags as suggested by the Westwood survey, **paper bag waste would increase by about 12 tons/1000 households.**
(1000 households * 0.33) * (91 lbs paper/HH- 20 lbs plastic/HH) = 24,000 lbs additional waste/1000 households
- With 100,000 households served on the South Shore, if all towns adopted bag bans, it could increase waste volume by about 1200 tons/year, at a total cost in the range of \$100,000. About 60% of this would likely be recycled.

Environmental impacts

- Several life cycle analyses put the environmental impacts of paper bag production and disposal, using several criteria, at 3-5 times that of equivalent plastic. Ocean pollution is not measured in these analyses, but plastic bags are a relatively small component.
- With a material density about 5 times greater than its functional plastic equivalent, it takes vastly more energy to manufacture, transport, and even to recycle it.
- The [manufacturing process](#) is chemical and water intense, as "beating the pulp" out of it involves boiling it in lye, and washing repeatedly with acid.
- Destroying forests, even if they are replaced with tree farms, is little better than polluting the ocean environmentally.

Retail impacts

- Higher cost to retailers, customers – paper bags cost 5-10X more than their equivalent plastic. Retailers are loathe to charge a fee on their own if their competitors don't, so the cost will be absorbed into the cost of other products.
- Paper bags take up 11X more space in transportation and storage than their functional equivalent plastic bags
- Will retailers eliminate their plastic bag recycling collection service?

Alternatives

Most bag bans specify that paper bags have a minimum of 40% recycled content. 100% is widely available and used. A survey of the following local stores revealed that the craft Beer Store, DSW Shoes, WalMart, Stop and Shop, and Whole Foods all provide 100% recycled content paper bags. Trader Joes, TJ Maxx and The Paper Store provided 60-95% recycled bags.

Aggressive public outreach and education campaigns encouraging the use of reusable, or no, shopping bags may be a more effective way to accomplish the goals of plastic bag bans.

The Town of Westwood is planning such a campaign in April, "Bring Your Own Bag Month". Here is a draft graphic:

PAPER

or



PLASTIC?

No thank you!



**Just bring your
own washable,
reusable bags**

A message from the Westwood Environmental Action Committee

