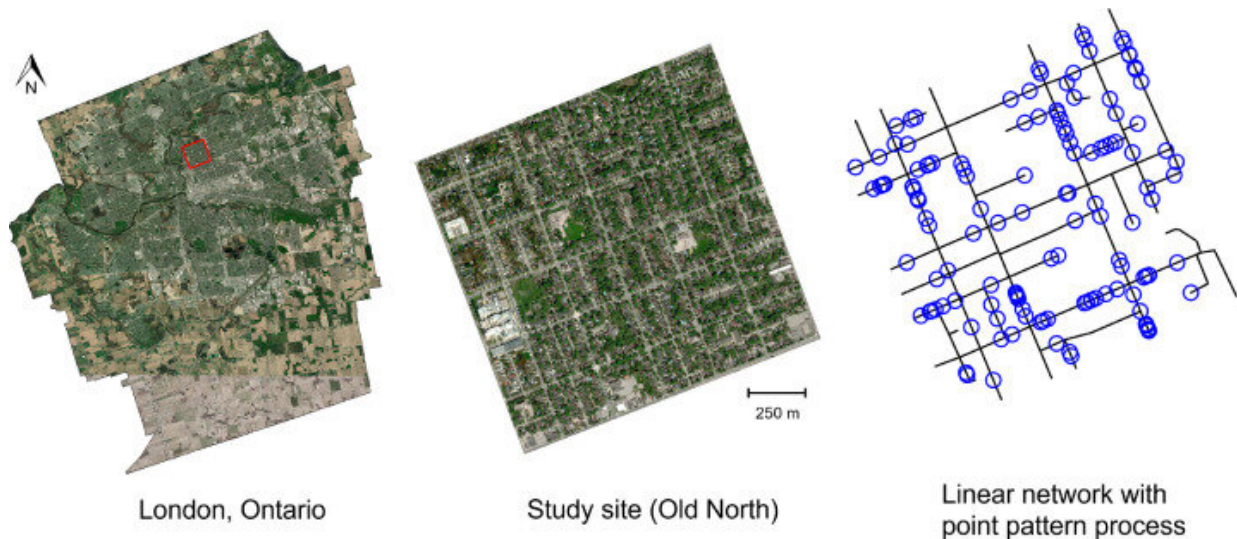


Bags or bins? When it comes to recycling, the answer is complicated

May 26 2022, by Debora Van Brenk



Left London municipal boundaries with study area highlighted, located in north London with the neighborhood of Old North (delineated by the red box). Middle. The study area is bound by Richmond St. (in the west), Adelaide St. (in the east), Huron St. (in the north) and Oxford St. (in the south) and encompasses an area of $\sim 1.95 \text{ km}^2$. Right. Plotted spatial recycling bag distribution within the study area for Mar. 2nd, 2021. Recycling bags are represented by blue location markers, black lines indicate the underlying linear network formed from streets that were sampled (excluding those streets where recycling collection already took place or were unable to be sampled for logistical reasons). Credit: *Environmental Challenges* (2022). DOI: 10.1016/j.envc.2022.100535

It seemed like a straightforward question to biology professor Paul

Mensink: Are plastic bags that hold curbside recyclables better or worse for the environment than blue boxes?

But the question has turned into a complicated conundrum.

"The short answer is, 'It depends,'" said Mensink, director of graduate environmental programs in the Faculty of Science, after his team published a comprehensive study of Ontario municipalities' policies and practices for collecting and sorting recyclables.

His research, published in *Environmental Challenges*, shows more than 40% of municipalities allow the use of [plastic](#) recycling bags. He wanted to examine the rationale for permitting or banning bags at curbside.

"It seems to me that if you're going to allow or ban one or the other, you need some good science behind it. I really wanted to get a solid answer about which way it should be going. And we just don't know."

The ambiguity doesn't sit well with Mensink. That's a significant gap, he said, because the cost of recycling, now split 50/50 between industry and municipalities, will soon be borne by industry alone.

In just one neighborhood, his team found that almost one in 10 homes used at least one plastic recycling bag, with a mean of 1.65 bags per house. Extrapolated to just 160 homes, that could amount to more than 10,000 single-use recycling bags per year, or about 380 kilograms of plastic being used to divert plastics from the landfill. If everyone in London used bags at the same rate as this one neighborhood, it would amount to 1.4 million bags per year.

Based on those numbers alone, Mensink was prepared to dismiss bags as environmental folly.

Until he and a team of environmental science students dug more deeply.

Some of the bags held shredded paper or easily dispersable plastics, they found. On windy days, the bags could prevent those items from becoming street litter as open-topped blue boxes couldn't.

Waste handlers can also pick up and sling bags into a recycling truck more quickly than they can sort through blue-box plastics and paper at curbside, and that can mean less tailpipe emissions.

On the other hand, there is the environmental cost of extracting the oil and manufacturing the bags in the first place, plus the cost of shipping them to a store and the cost a homeowner would have in driving to a store to buy them.

Then there's the question of what happens to the bags when they arrive at a recycling facility. Some municipalities have automatic debagging machines. At other facilities, someone has to rip them apart manually, at additional staffing costs and potential safety concerns for workers. Some facilities will send the bags back into the [recycling](#) stream, he found. At others, they are trashed.

"Initially I thought, 'Why use bags in the first place?' Single-use [plastic bags](#) sound like a bad idea because there are other, reusable options. However, when you take all the variables into account—it becomes a mind puzzle," Mensink said.

And if there's a single takeaway from their research so far, it would be that being environmentally responsible is a complex matter.

"I get that this is an overlooked issue, especially when our big aim here is to capture recyclables and keep them out of the landfill and waterways," said Mensink.

But consumption is costly. There is always a trade-off.

And calculating the true bottom line of any one solution always requires a deeper dive, he said. "Trying to measure the [environmental impact](#) of what we produce and consume is as complex as it is important."

More information: Joseph Workentin et al, The use of recycling bags: An overview of collection policies and a spatial assessment of bag use, *Environmental Challenges* (2022). [DOI: 10.1016/j.envc.2022.100535](https://doi.org/10.1016/j.envc.2022.100535)

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