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Redesigning Commercial Waste Management in New York: Maximizing the Benefits of Franchise Zones¹ *Viewpoint*

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New York City finds itself in the peculiar position of having two parallel, non-coordinated forces for collecting, transferring, transporting, and processing or disposing of the solid wastes that its millions of residents and workers and visitors produce. One

force, whose uniformed front lines are deployed in a fleet of some 2,000 white trucks,² is owned and managed by the City of New York, and collects waste produced by households and non-profit institutions. The other is a multi-headed hydra made up of about 90 competing companies,³ whose troops ride in a fleet of more than 1,000 trucks⁴ of many colors.

Between them, they stop in front of every building in the city at least several times a week, and often, several times a day. But while the white trucks travel in a relatively stately and orderly fashion, one truck progressing block by block from building to adjacent building, trucks in the many-colored fleet dart like lumbering bumblebees, stopping at one building to pack trash in their rears, then careening off to another somewhere along the block, or on another block, or in another borough leapfrogging the whole way with other colored trucks that are their competitors, and sometimes with the white trucks that are not.

The way they do what they do matters very much because, per mile traveled, it is likely that garbage trucks do more damage to the environment, to human lives, and to the quality of public space—than any other kind of vehicle on New York City's streets. Colored trucks, because of their competitive here/there/ now-over-there buzzing about from block to block and borough

¹ A version of this article was presented as testimony to the New York City Council Committee on Sanitation and Solid Waste Management on June 27, 2019, on behalf of the Center for Zero Waste Design.

² Discover Our Fleet, NYC SANITATION, https://www1.nyc.gov/assets/dsny/site/about/fleet (last visited Aug. 12, 2019).

³ See Testimony of Robert Orlin, Deputy Comm'r, N.Y.C. Dept. of Sanitation 1 (June 27, 2019), https://on.nyc.gov/2GZbjoj.

⁴ N.Y.C. Dept. of Sanitation (DSNY), Commercial Waste Zones: Appendix 8 (2018), https://dsny.cityofnewyork.us/wp-content/uploads/2018/11/ CWZ_Appendix.pdf.

to borough, travel significantly more miles, per ton collected, than white trucks.⁵ And the colored trucks' excess miles per ton are being multiplied with the City's expanding requirements for collecting recyclable and organic materials separately from refuse. Since miles per ton are directly linked to gallons of fuel and tons of air pollutants, levels of congestion and noise, number of crashes, and costs of roadway damage, as well as to costs of collection itself, eliminating unnecessary miles by making shorter, "higher density," non-duplicative routes would be a significant step in the direction of reducing the negative impacts caused by commercial waste collection.

This is what the sponsors of legislation now before the City Council are attempting to do with a bill (Intro. 1574-2019) that would allow only a single company—rather than the current unlimited number—to collect commercial waste within a specified area.⁶

But truck miles traveled cause only some of the adverse impacts imposed on New York City-and regions well beyond our borders-by our management of our waste. Before collection trucks stop in front of every building, idling while their compactors crush the material laborers have loaded into them-a physically demanding process that causes a higher rate of injury and death than almost any other kind of work'-heaps of bagged trash have occupied the sidewalk for hours, impeding pedestrians, leaking liquids and litter, feeding rats. And after the trucks have completed their collection routes (perhaps 12 hours and 100 miles after leaving their garages),⁸ there are far too few places within a reasonable distance from the city where their loads can be processed for recovery or disposal. This means that they must be transferred to barges, trains, or tractor-trailer trucks to be hauled, on average, hundreds of miles to disposal sites. The result is that the lives and quality of life of the people at the front end of the system are unnecessarily diminished by clumsily haphazard collection methods, while the lives of faraway people at the back end may be severely affected by unconscionable landfilling operations.⁹ These problems, too, could be addressed through a thoughtfully designed franchise-zone system.

A brief review of how our current commercial waste system came to be may be of use in considering its potential re-design.

A Bit of History

Private carting in New York, as a mandatory citywide system for commercial waste, began in 1915-inadvertently. Until then the City had collected refuse from any generator, residential or commercial, and hadn't charged anyone for the service. (Then, as now, Sanitation's budget came from general tax revenues.) But given the growth of business in the city, and the increasing volume of commercial waste, it was the Sanitation Commissioner's view that private companies should be charged for the waste they put on the streets for his men to pick up. He secured legislation to allow such charges, at which point the City's disposal contractor-who barged the City's waste to sea and dumped it overboard, and had been doing so, for both residential and commercial refuse, for 25 years-pointed out that his contract called for accepting only "household rubbish." The contractor quickly followed up by securing a court order that enjoined the City from delivering any material picked up from buildings that didn't contain households.¹⁰

The contractor's intention had simply been to make it clear that he wanted a piece of this new income stream: his goal was a new contract, at a higher price. Instead, the Sanitation Commissioner simply stopped collecting waste from commercial buildings. And through an executive order, he made businesses responsible for making their own arrangements for collecting and disposing of it.

(There were also tens of thousands of smaller businesses located on the ground floors of residential buildings, but since they had not been mentioned in the contractor's suit, they were not affected by the new arrangement.)

Overnight, the city's private carters—who had handled various materials for various entities since the city's first settlement, and who were currently collecting waste commodities such as food scraps from hotel restaurants for hog farmers in New Jersey, and salvaging paper and metal and fat and bones—were

⁶ The legislation can be viewed at https://on.nyc.gov/2GZelcb.

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⁵ Private carters in New York City travel an average of 7.3 miles to collect a ton of waste while DSNY trucks average 2.3 miles/ton. Calculated from data in Memorandum from Sam Schwartz Eng'g, D.P.C., to DSNY regarding Private Carting VMT Analysis, at 2 (June 2, 2016), http://www1.nyc.gov/assets/dsny/ downloads/pdf/studies-and-reports/Private_Carting_Study-Routing_Analysis.pdf; DSNY, New York City Commercial Solid Waste Study and Analysis, 2012: Summary Report, at 35, 40 (not dated), https://www1.nyc.gov/assets/dsny/docs/about_2012-commercial-waste-study_0815.pdf; New West Tech. LLC, Multi-Fleet Demonstration of Hydraulic Regeneration Braking tbl.21 (Dec. 2011) (prepared for the New York State Energy Research and Development Authority (NYSERDA) and the National Association of State Energy Officials).

⁷ Refuse collectors experience the fifth-highest rate of fatalities and injuries among U.S. workers. Cole Rosengren, *BLS: Refuse Collection Fatality Rate Down but Still Fifth Most Dangerous Job*, WASTE DIVE (Dec. 19, 2017), https://www.wastedive.com/news/bls-refuse-collection-fatality-rate-down-still-fifth-most-dangerous-job/513413/.

 ⁸ DSNY, Commercial Waste Zones: A Plan to Reform, Reroute, and Revitalize Private Carting in New York City 4, 11 (2018), https://dsny.cityofnewyork.us/wp-content/uploads/2018/11/CWZ_Plan-1.pdf.
 ⁹ E.g., Amended Complaint, Fresh Air for the Eastside v. Waste Mgmt. of N.Y., L.L.C. (W.D.N.Y. Dec. 7, 2018), *available at* https://assets.documentcloud.org/

⁹ E.g., Amended Complaint, Fresh Air for the Eastside v. Waste Mgmt. of N.Y., L.L.C. (W.D.N.Y. Dec. 7, 2018), available at https://assets.documentcloud.org/ documents/5638861/HA-Amended-Complaint.pdf.

¹⁰ E.g., City Won't Dispose of Private Rubbish, BROOKLYN DAILY EAGLE; Stop Free Removal of Business Waste, N.Y. TIMES; To Stop Taking Up Trade Waste, STANDARD UNION, Aug. 1, 1915.

handed the opportunity to meet the immediate demand of tens of thousands of new clients. The first unintended consequence: as the new system rapidly evolved, the ability to collect waste from particular customers became an informal but tightly controlled property right.

The next accident—if it can be called that (since it ran directly counter to the strong recommendations of the City's leading authorities on the subject)—stemmed from the same economic impulse that spurred the first. In 1954, wanting to save money (or make money)—and to eliminate the discriminatory disparity between the costs of various businesses—the City proposed to charge the 50,000 businesses in residential buildings who were receiving "free" collection for their service costs.¹¹

It had happened that, two years before, the decades-old ecosystem in which individual businesses were bought and sold as the perhaps-unwitting property of their private waste haulers was turbo-charged by an influx of new players. The Anastasias of Murder Inc. and their peers, who had taken control of the unions and workforces of the docks and other niche industries, had moved into the Teamsters local and the trade waste associations in the boroughs of New York and surrounding counties. Their arrival immediately led to tighter monopoly control-established through threats and acts of violence-and higher prices. Investigations by City and State authorities soon followed. Nonetheless-for whatever reason-Mayor Wagner chose to disregard the urgings of his budget director and city administrator and investigations commissioner and handed these 50,000 new customers to the carting industry.¹² The consequences lingered to the end of the century, when remedial control measures were finally introduced.

In 1982, another pricing change by another sanitation commissioner led to another set of unintended private carting consequences. Trying to make the fee for using his disposal facilities more accurately reflect the depletion cost associated with using the City's finite remaining disposal capacity, he asked the Board of Estimate to double the tip fee at the marine transfer stations where barges towed to the City's last two land-fills were filled.¹³ In short order the carters abandoned the City's truck-to-barge sites for their own truck-to-truck facilities, which suddenly popped up in just a few neighborhoods.

The record thus far shows that even limited changes in the system can have long-lasting and far-reaching consequences. It demonstrates the need to consider all the interlinked components in the overall waste management system, rather than focusing only on who provides the collection service. It suggests that, since there have been only a few changes in this complex system over the past century, modifications may be equally rare in the next one.

All of these considerations argue for taking full advantage of the opportunity offered by Intro. 1574 to think expansively and creatively about how the linkages between set-out, collection, transfer, and processing or disposal can be most productively affected by the design of a franchise system.

Establishing Franchise Agreement Conditions That Address Overall System Needs

The design for a rational commercial waste system could do much more than reduce unnecessary truck miles and improve safety and environmental performance standards. As the system's former mob masters well understood, assuming longterm control over large blocks of customers offers powerful advantages.

These are some of the other needs these advantages could address:

The transfer station problem

To reduce the adverse impacts imposed by truck traffic and transfer station operations on the residential populations in the low-rise neighborhoods where private transfer stations are now clustered, the City's network of marine stations was designed to accommodate both residential and commercial waste. But private carters won't abandon their own facilities and use the City's without some significant inducement or requirement. Franchise awards, in which specific waste sheds are linked to specific first-dump sites, are the most efficient way to accomplish this end while also minimizing truck miles. This logic should be extended to garages and processing facilities, which should also be linked to specific zones. When optimally located transfer facilities are not currently available, the City should take all reasonable steps to facilitate such private developments or to offer public sites for this purpose. And where appropriate, these sites should allow shared access between different carters or between carters and the Department of Sanitation (DSNY).

Satisfying demand for processing capacity

Supply-side guarantees at predictable prices (which exclusive long-term franchises offer) are a prerequisite for facility financing. There is a huge gap between the supply of local processing and disposal capacity and the latent demand—which is why most New York City waste is sent to distant landfills at great environmental, social, and economic cost. If we don't develop this

¹¹ E.g., Says Refuse Is Drain on City, DAILY NEWS, July 26, 1954.

¹² E.g., City Probes Private-Trash Gouge, DAILY NEWS, June 1, 1955; Monopoly Cry in Removal of Rubbish Sifted, DAILY NEWS, Aug. 7, 1955; Urge City End Free Hauling of Private Refuse, DAILY NEWS, Feb. 8, 1956; Approve Garbage Move, Feb. 10, 1956; Bob Greene, Murder of Anastasia Speeds Carting Probe, NEWSDAY, Oct. 31, 1957.

¹³ Paul L. Montgomery, Angry Carting Concerns to Act on 'Unfair' Rates, N.Y. TIMES, Feb. 13, 1982, at 29.

capacity, we have zero chance of delivering zero waste to landfills by 2030 (a target set by the de Blasio administration in 2015¹⁴)—or any other wishful date. Financing and developing anaerobic digestion, waste-to-energy, and other forms of materials and energy recovery facilities, either within the city or nearby, should also be requirements of franchise awards. Again, the City should assist this effort to the maximum extent possible, including by facilitating access to sites and by helping companies obtain access to institutional financing structures.

Collection infrastructure and operations

Piling bags on the street to be picked at by rats, picked up by humans, and packed into trucks idling in front of every building is an inefficient and environmentally damaging way to handle waste. Where better systems are or could be made available, their development and use should also be a franchise condition.¹⁵ This may require the financing and installation of collection infrastructure and equipment (such as submerged containers or pneumatic tubes), as well as operational coordination between adjacent buildings and between generators and collectors.

Incentivizing the diversion of waste from disposal

Intro. 1574 has language to incentivize waste diversion on the generator side, by requiring carters to collect organics and recyclables at a lower cost than is charged for collecting refuse. But since carters' greatest revenues would come from non-diverted waste, this economic incentive for customers creates a disincentive for carters to encourage or facilitate diversion. This incentive structure may therefore have deleterious effects on diversion since the carters' equipment and operations arguably play the most decisive role in determining how much waste is ultimately recovered through recycling and digestion or composting. One option to address this problem would be to create a DSNY-administered escrow fund into which a specified portion of carter revenues would go as "retainage." The nonretainage portion of revenues would be established at a level that covers all franchisee operating costs but not the full anticipated profit. This escrow fund could then be divided among all franchisees, on a weighted basis reflecting their respective contributions to the fund, but also reflecting the relative degree of diversion that they can document over the specified withholding period. Franchisees with the highest diversion percentages would receive the highest proportion of the escrow fund payments, so that franchisees who divert less-than-average amounts may receive less retainage than they paid while those who achieved above-average diversion may receive a bonus above their retainage payments.

Reducing truck trips through incentives and mandates

Current collection truck miles traveled are the product not only of the number of carting companies and trucks serving any given block but of the number of pickups of a given waste fraction, at different times of the day, and different days of the week, per building. Franchise agreements can require that carters do not pick up the same fraction from the same business or the same building multiple times a day unless they can show that such multiple trips do not increase truck miles traveled to collect the same volume of that material from the same generator or set of generators on a given route or routes without multiple collections per day. The agreements could also incentivize generators to accept fewer collections per week (which could be made possible with the use of compaction or densification equipment, or by providing more storage space) by reducing their collection costs in proportion to the collection savings realized by the carter due to fewer truck trips.

System-Design Conditions and City Actions Required to Achieve Maximal Benefits

Context-sensitive zone boundaries

Zone boundaries should be delineated in a way that respects critical institutional and physical infrastructure as well as geographic and demographic conditions relevant to collection and transport logistics.

Certain local conditions could allow or facilitate superior, sustainable collection operations. For example, viaducts such as the 7 line in Queens, or the High Line in Manhattan, which stand ready and waiting for a pneumatic waste collection tube to be strapped to them, should not be split between multiple zones.¹⁶ And the boundaries of business improvement districts, which serve as ready-made institutional armatures for litter-reduction and waste-collection services, should also be respected in defining zones.¹⁷

Conversely, since minimizing truck miles is one of our prime objectives, there are existing jurisdictional lines that should *not* be considered inviolable. Treating community board boundaries

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¹⁴ N.Y.C., ONE NEW YORK: THE PLAN FOR A STRONG AND JUST CITY 6, 176 (2015), http://www.nyc.gov/html/onenyc/downloads/pdf/publications/ OneNYC.pdf.

¹⁵ Examples of superior set-out and collection systems, relying on various types of rigid containers, with or without compaction or densification, with varying degrees of automation and various kinds of institutional and organizational coordination, on public or private space, are presented in Chapter 3 of the Zero Waste Design Guidelines. CLARE MIFLIN ET AL., AIA N.Y. ET AL., ZERO WASTE DESIGN GUIDELINES: DESIGN STRATEGIES AND CASE STUDIES FOR A ZERO WASTE CTTY (2017) [hereinafter ZERO WASTE DESIGN GUIDELINES], https://www.zerowastedesign.org/wp-content/uploads/2017/10/ZeroWasteDesignGuidelines2017_ Web.pdf (prepared by Kiss + Cathcart, ClosedLoops, and Foodprint Group in cooperation with the Center for Architecture).

¹⁶ E.g., Cole Rosengren, *Pneumatic Tubes with Local AD Get Wave of Political Support in New York*, WASTE DIVE (Feb. 28, 2019), https://www. wastedive.com/news/pneumatic-tubes-political-support-new-york/549411/.

¹⁷ *E.g.*, Press Release, Downtown Alliance, Alliance Aims to Clean Up Residential Garbage With New Sanitation Guide (Mar. 1, 2019), https://www.downtownny.com/press-releases/alliance-aims-to-clean-up-residential-garbage-with-new-sanitation-guide.

as sacrosanct barriers that can't be breached by collection trucks, for example, could easily lead to an unnecessary increase in vehicle miles if loads have to be driven farther to reach a dump site at the opposite end of one district than they would if they slipped around the corner to a nearby site in an adjacent one.

Similarly, just as using community districts to arbitrarily cookie-cut franchise zones could lead to extra miles travelled, failing to consider the geographic chokepoints—the bridges, tunnels, and other flow-constraining features that afflict our archipelagic city—could needlessly increase the congestion impacts associated with the predictable movements of collection trucks from their defined points of origin (garages), to collection routes and destinations (first-dump sites).

Facility siting; open access to facilities

The number of sites that are within or adjacent to the city for the range of waste management facilities needed for our overall public and commercial needs-garages, transfer stations, processing plants-is severely limited. This is another problem that should be addressed through the franchise plan since there is no other way-again, short of separate legislation-through which more efficient use of existing and potential facilities can be achieved. If use of a City-owned or -controlled facility (garage or transfer or processing site) that has potentially available capacity would minimize transport distances from a franchise zone, the City should offer use of that site to the franchisee of any such nearby zone, and its use should be required of any such franchisees. Likewise, franchisees using facilities with potentially available excess capacity that would minimize transport distances for a franchisee in another zone should be required to share access to such facilities, and the other franchisee should be required to use such facilities. And in the event that the City controls sites that could be developed for such use, which would reduce transport distances relative to alternative sites, and whose use for this purpose would produce greater public benefits than their existing use, these sites should be made available for use by the franchisees, who in turn should be required to use them. Or if a franchisee already controls a proposed development site, the City should make every reasonable effort to facilitate any regulatory processes required for its development.

Collection operations

Minimizing collection impacts will require shifting from doorto-door collection of plastic bags of trash and recyclables on the street toward the kind of containerized, semi-automated, aggregated collection that is practiced in many other cities. Among the possibilities are aggregated collection, on the multi-building or -block level, with compactor containers for building staff use or drop-off kiosks for residents and pedestrians; submerged containers; and collection via pneumatic tubes.¹⁸ To the maximum practicable extent, the City should encourage and facilitate such superior forms of sustainable collection by working, across agencies, with business improvement districts and local businesses and residents to use public spaces such as parking lanes and under-el locations (spaces underneath bridges, highways, and elevated trains) for aggregated, containerized collections.¹⁹

Pricing

Reducing truck trips and miles can offer significant public benefits in the form of improved environmental, safety, and quality-of-life conditions. But these reductions also offer significant benefits to waste haulers, given the savings in labor, operating, and capital costs that they entail. And as previously noted, exclusive franchise zones also offer significant long-term economic value, due to the assured long-term contractual relationships at predictable prices with a large body of customers without the need for ongoing marketing and competitive procurements.

In addition, there should be long-term efficiencies and savings accruing to private carters (as well as substantial benefits to the public) from the development of local processing and disposal capacity that is developed on private and/or public sites, with capital financing leveraged through the supply-side commitments produced by franchise awards and facilitated through a City role in bond issuance. Such facilities should gradually reduce the need for expensive long-term transport and landfill disposal.

These win-win efficiency savings should permit increased service and performance requirements on the part of carters without increased fees to generators. An awareness of this structural condition should make it possible to establish clear expectations with regard to how pricing of private hauling services is set. That is, despite the improved performance standards the new system will establish, there should be a clear and close relationship between current baseline costs and future costs under franchise operations.

This understanding—that there should not be marked differences in pricing before and after the establishment of zones should condition the price competition between carters in bidding for franchise awards. That is, the role of price competition alone should not be paramount. Rather, the open franchise award process should focus on negotiated terms. And there should be little incentive for firms to engage in "race to the bottom" price competition that could constrain protections for workers and

¹⁸ ZERO WASTE DESIGN GUIDELINES, *supra* note 15; CLOSEDLOOPS ET AL., REP. NO. 18-28, HIGH LINE CORRIDOR PNEUMATIC WASTE-MANAGEMENT INITIATIVE: PRE-IMPLEMENTATION PLANNING STUDY (Jan. 2019), http://www.closedloops.net/high-line-corridor-project (prepared for NYSERDA and the New York State Department of Transportation).

¹⁹ E.g., DSNY and DOT Containerized Waste RFEI, CTR. FOR ZERO WASTE DESIGN, http://www.centerforzerowastedesign.org/public/?p=833 (last visited Aug. 12, 2019).

create unnecessarily sharp differences in the fees charged similar types of generators in different areas of the city.

Within a specific zone, the fair price should be established through negotiation between DSNY and the selected carter, based on documented, validated analyses of relevant bids, cost components, and price history. This zone-specific rate should establish the rate generally used within the zone, sparing any individual customer the need to negotiate on her own for a fair rate that is equivalent to that of other businesses in the zone, and leveling the playing field between customers of different sizes.

Maximizing the number of qualified, high-performance carters

There are good arguments for not creating a situation in which the current ecosystem of local carting firms is suddenly reduced in size to just a few very large firms. This need not be an automatic result of this legislation. There are a variety of ways in which smaller firms could be enabled to continue in business. One would be by designing geographically rational, demographically compatible zones of varying sizes, so that the ability of firms of different sizes to bid for franchise awards could be maximized.

Another would be to develop procurement terms that favored the use of multiple qualified subcontractors, for different subsections of zones, or for different materials, or for specific forms of superior collection (such as submerged containers or pneumatic networks) that involve specialized equipment and operations.

With thoughtful design, it could be possible to produce a system in which the future market share for existing firms may not differ markedly from their current market share, while each firm benefited from the efficiencies of rational routes; assured contractual relationships; access to superior collection, processing, and disposal technology; and shorter origin-to-destination transport distances.

Penalties/liquidated damages

Customers need to be assured that their carter will fully meet their contractual requirements and that there are quick, automatic remedies to compensate for specified service failures. DSNY should provide dispute-resolution services so that after a single contact from a customer by phone or e-mail the customer is promptly compensated at a defined rate for each documented failure. These fines or penalties should be paid by DSNY to the generator within a specified timeframe, with the money recovered by the City from the carter, either through the escrow fund previously mentioned or by another means.

"Plan B"

There are clear benefits to be achieved by individual generators through an exclusive-zone system. These include:

- the avoidance of the need to negotiate an individual price with the carter that may be less favorable than that received by other customers due to the business's size or other characteristics, since the franchise award process will have established a fair rate under competitively reasonable terms for that part of the city;
- the provision of an administrative and dispute management system that will ensure prompt compensation at specified rates; and
- the marketing and real estate advantages due to fewer truck trips in the neighborhood and fewer bags on the street.

There also are clear public interest arguments in favor of treating waste management as a public utility, which would preclude giving individual generators the right to choose their own provider (just as businesses often are not allowed to choose their own water or electricity provider, and New York house-holders generally do not have the option of choosing their waste collector).²⁰ Nonetheless, commercial generators may feel uncomfortable about having an assigned carter rather than having the ability to choose any carter at any time.

To address this concern, and to deal with cases where the complaint management process has not provided satisfactory results from the customer's perspective, at a customer's request DSNY should collect a given customer's waste at the cost established for that zone.

Intro. 1574

The City Council's current deliberations on the future of commercial waste management in New York could have significant and enduring effects. But the current bill, while a useful start—particularly since its call for a single franchisee in each zone offers the potential for significantly greater benefits than would zones with multiple franchisees—could be made much better. It should be amended to incorporate provisions that would go beyond simply reducing the number of carters in a given zone. With more thoughtful design, the City could make significant progress toward major objectives: eliminating the disposal of waste in landfills (Zero Waste), reducing greenhouse gas emissions (80x50), ending traffic fatalities (Vision Zero), eliminating rat reservoirs, and enhancing the quality of public spaces.²¹

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²⁰ One could argue this is not an imposition on householders since only the City provides free collection, but since this "free" service is actually paid from the general taxes charged by the City, it would be much more rational to charge residents on a unit-volume basis so that they would have a direct economic incentive to reduce the volume of wastes they generate and to maximize their diversion of recyclables and organics from the refuse stream. Hopefully the City will soon fulfill its long-promised commitment to implementing such a "Save-As-You-Throw" system.

²¹ A list of suggested amendments to advance these goals, along with a list of components that should guide system design, is available at Center for Zero Waste Design. See Ctr. for Zero Waste Design, Proposed Amendments to Intro 1574 (not dated), http://www.centerforzerowastedesign.org/public/wp-content/uploads/2019/06/Proposed-Amendments-to-Intro-1574.pdf; Ctr. for Zero Waste Design, Franchise Zone: System-Design Components (not dated), http://www.centerforzerowastedesign.org/public/wp-content/uploads/2019/06/Miller-Attachment-1-Components.pdf.

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