Policy Brief: The opportunities and shortcomings of the District of Columbia's composting governance and stewardship

Luke Carignan, American University

Cite as: Carignan, Luke. 2025. "Policy Brief: The Opportunities and Shortcomings of the District of Columbia's Composting Governance and Stewardship". Food-Fueled, 2, e00017. https://doi.org/10.57912/28908071.

Web address: https://edspace.american.edu/foodfueled/issues/volume-2/policy-brief-the-opportunities-and-shortcomings-of-the-district-of-columbias-composting-governance-and-stewardship/

Purpose

The purpose of this policy brief is to inform on the current composting rates, laws and initiatives in the District of Columbia, and to expand upon the Zero Waste DC Plan by offering insights and strategies for the Plan's proposed composting solutions. As part of the Zero Waste DC Plan for achieving "zero waste" status—which is diverting 80% or more of city's waste from landfills to recycling or organics processing facilities—by 2032, there are many strategies proposed to increase organic waste diversion in order to speed up the process to meet this goal. Specific solutions must be implemented quickly to see immediate results for food waste diversion and other environmental concerns. More specifically, methane emissions that come from organic materials ending up in landfills—instead of composting facilities—should represent an obvious area of immediate District climate action due to how quickly the benefits of capital investments in composting programs materialize (Environmental Protection Agency 2020). If the District would like to address its impact on climate change and brand itself as a green city, it is imperative that composting programs be expanded quickly and broadly across Washington to limit its potent methane emissions associated with landfilled organic waste. This brief reviews many composting projects and strategies of varying scales

that aim to increase community engagement in composting with the ethos that all communities should receive equal access to and benefit from any forthcoming composting proposals.

Background Context

Increasing waste diversion rate

The District of Columbia boasted a 16.11% citywide waste diversion rate in 2018 with a citywide waste output of 1.1 million tons of waste produced (DC Office of Waste Diversion, n.d.). Since then, the citywide waste diversion rate continues to increase up to 27.93% in 2022 (DC Office of Waste Diversion, n.d.). Furthermore, total citywide solid waste generation decreased from 1,100,000 tons in 2018 to an estimated roughly 1,017,000 tons in 2022. As estimated citywide waste generation declined since 2018, so has per capita waste generation. In 2018, per capita waste generation was 8.89 lbs/day and has since gone down over 3 lbs/day to 5.84 lbs/day in 2022. However, since 2020, there has been an increase in per capita waste generation from 5.12 lbs/day to the 5.84 lbs/day estimated (DC Office of Waste Diversion, n.d.). As the District continues to bring people back into the office and into new housing developments, this figure could increase again without proper waste management (DC Government 2024). Once released, waste generation data from 2023 and 2024 could identify the continued trajectory of per capita waste generation in the District post-COVID. Overall, the waste diversion rate is on par with many other U.S. cities, and better than many, especially given the availability of this waste diversion data for Washington. Because waste management practices are improving and requiring more people and organizations to get involved in waste diversion, the future is bright for Washington's waste diversion goal of meeting 80% waste diversion.

District law on composting

The Zero Waste Omnibus Amendment Act of 2020 and the Sustainable DC Omnibus Amendment Act of 2014 provide guidance and regulatory requirements for limiting food waste and diverting organic waste—which are compostable materials including foods, leaf and yard waste, and otherwise generated waste that is derived from plants or an animal—through composting. Some of these requirements include retail food stores with >10,000 square feet of floor space needing to either send their back-of-house food waste to an organic waste facility or compost the waste on-site, among other options for disposing food waste (Zero Waste Omnibus Amendment Act of 2020, Section 8–1031.03a (2020)). This requirement for retail businesses—which is also applicable to higher education institutions, retail chain food stores, and others—displays the District's aspirations for diverting food waste on a commercial scale. The acts also require the DC Department of Public Works (DPW) to run a grant program for businesses and nonprofits to purchase on-site composting systems (Zero Waste Omnibus 2020, Section 8–1031.12c (2020)), and propose that all waste characterization studies produced by the District include summaries on the organic waste management efforts of each DC agency (Zero Waste Omnibus Amendment Act of 2020, Section 8–1031.13 (2020)). While legislation mandating commercial composting and waste sorting is coming into effect today, there still exists gaps in legislation for requiring residents and single-family households to compost and sort their waste beyond just landfill and recycling. Cities like Seattle and San Francisco mandate that all residents put all recyclable materials in recycling bins and compostable materials in compostable bins, and the District is primed to follow suit with action 15 of the Zero Waste DC Plan (Zero Waste DC 2024).

Current composting programs

The Community Compost Cooperative Network provides compost bins at 50 sites around Washington, and "trained community members" help to compost food scraps and garden waste (DC Department of Parks and Recreation, n.d.). The program has an active capacity of 5,000 volunteers and collection of 50 tons of material "with no operating costs and no carbon footprint"; however, currently the

program is running at one-fifth participant capacity and two-fifth material capacity, meaning the program is highly underutilized (DC Department of Parks and Recreation, n.d.). Some of the barriers to the low active participation could be the requirements needed to become a member of the Network, accessibility of the site location to public transit, or lack of promotion of this co-op.

The Food-Waste Drop Off Program has the largest resident population reach of any composting program in the District, with 12 collection sites located across all eight wards, with Ward 3 currently served by the most drop off points (DOPs) at three, and Wards 2, 5 and 8 all only served by one DOP (Open Data DC, n.d.). Because these DOPs are all located at a farmer's market, dropping off food waste is only possible while the farmers market is open. Each DOP was chosen with the prerequisite that the market is open year-round—excluding wards that are served by multiple DOPs—however issues like weather or staffing could push a market to not open on a given day. Further, each market is typically open one day a week, creating the issue of infrequent accessibility for residents to dispose of their food waste and therefore further inconveniencing resident composters. To help remedy this issue, the Food-Waste Drop Off Program is planning to expand DOPs by installing new "smart food waste bins," with each installation site still being decided between the DC DPW and community members (Zero Waste DC, n.d.). These smart bins will always be locked but available 24/7 to unlock and drop off food waste if you have the corresponding mobile app. In July 2024, one smart bin was installed in conjunction with George Washington University and is placed on the campus (Varner 2024). Since February 2024, 30 more smart bins have been installed across all eight Wards (DC Department of Public Works 2025). These smart bins will bridge that gap of infrequent access to community drop off points for food waste, however the digital divide is also an issue to consider for DPW and the DC government.

The Curbside Composting Pilot Program is a vital new tool for assessing the viability of a public three-bin waste collection system. Launched in 2023, Washington residents who already receive trash and recycling collection services from DPW were able to sign up to have a third bin for household food waste be

collected by DPW. Because it is a pilot program, only about 9,000 households were selected for weekly food waste collection (Fenston 2023). Under the program, participants received “starter kits” including an indoor food waste bin and a larger outdoor bin. Participants also received bin liners, an information card on their respective weekly collection day (may differ from recycling and trash collection), and participants will receive 5 pounds of “finished compost” after about a year of food-waste collection (Zero Waste DC, n.d.). Food waste is collected by the private company Compost Crew (Charles 2024). The program helps to provide insights in how DPW can manage the new waste source, as well as the logistical challenges related to providing bins and “starter kits” to residents and the capacity of transfer stations and food-waste processing facilities in Maryland and Virginia. Notably, items such as compostable utensils and isolated fats or grease (in large quantities) cannot be collected, therefore education will be necessary to ensure contaminated (non-compostable) materials are not placed in the food waste bins. After a successful program completion in the Fall of 2024, the program maintaining services for at least another year, and “DPW aims to add a limited number of new households as current participants move away or opt-out” and “priority will be given to residents living in designated low-income and disadvantaged communities across the District” (Zero Waste DC, n.d.).

The Home Composting Program provides Washington residents with the opportunity to compost their organic waste themselves. Through this program, residents can learn about what composting is and how it can be done at home through one of DPW’s workshops. To qualify for a maximum $75 rebate which goes towards purchasing a home composting system, residents must attend one of those workshops (Zero Waste DC, n.d.) This rebate is beneficial to residents who have backyard space and/or want to properly dispose of their food waste and other yard waste in the same place. Given the scope of the Curbside Composting Pilot Program is limited to just food waste, and yard waste disposal is possible only by calling 311 and scheduling an appointment for pickup, the Home Composting Program bypasses the two-step process of disposing of food and yard waste separately by letting residents dispose of both in the same place: an at-home composter (Zero Waste DC, n.d.) Currently, this program is undergoing restructuring and is not

holding workshops nor offering rebates until the program is relaunched. Residents can join a waitlist to participate in the free compost collection program in the future.

Methane Emissions Associated with Landfilled District Food Waste

Methodology for estimating landfilled food waste methane emissions

It is difficult to quantify exactly how much organic (including food) waste is sent to landfills each year from the District. However, this number is important to estimating associated methane emissions, and therefore methane emissions that could be avoided had the food waste been sent to an organics processing facility. For purposes of estimating methane emissions from food waste sent to landfills each year, data from a 2021 DPW Waste Characterization Study report was used. The report separates waste composition into “single residential,” “multi-family residential,” and “non-residential” waste to see what building types were generating the most of each type of waste, notably food waste (DC Office of Waste Diversion). The most recent data used in the report came from 2018, therefore conclusions succeeding this methodology should be given caution. The U.S. Environmental Protection Agency's “Quantifying Methane Emissions from Landfilled Food Waste” guidance was used to make proper estimations on methane emissions associated with landfilled D.C. food waste. The scope of this estimation is limited to just food waste, as methane emissions associated with other types of possible landfilled organic waste–including leaves, yard waste, and land clearing debris–have different methane emissions factors that are not yet clearly defined. Further, food waste represented the largest share of total organic waste collected in 2018, with 13.8% of total estimated aggregate main-stream waste (MSW) generation, while yard waste and other organics were 4.5% and 3.1%, respectively. Notably, food waste’s 13.8% share of total estimated MSW generation was the second highest of any waste type, only behind paper (31.1%) (DC Office of Waste Diversion 2021, 10).

Quantifying District food waste sent to landfills in 2018

Based on the 2021 Waste Characterization Study, DPW estimated that 156,974 tons of food waste were generated in 2018. A 2018 DPW Citywide Waste Diversion Report found that 4,736.34 tons of food waste was sent to organic processing facilities, meaning the exact known quantity of food waste generated in 2018 was 4,736.34 tons (DC Office of Waste Diversion, n.d., 7). This leaves a gap of 152,238 tons between the total estimated and known food waste generated in 2018, however that gap is consistent with other reports completed by DPW on waste generation, including their most recent 2023 report (DC Office of Waste Diversion, n.d., 14). Based on the EPA's "Quantifying Methane Emissions from Landfilled Food Waste" guidance, the 152,238 tons of food waste that was not reported as sent to an organic processing facility was likely sent to landfills or an incinerator. In the scenario that all 152,238 tons were sent to landfills, that food waste would generate 5,176.092 metric tons of fugitive (released into the atmosphere) methane emissions and 3,349.566 metric tons of carbon that "remains as carbon stored in the landfill," each over a 30-year period (Environmental Protection Agency 2023). Based on metrics reported by DPW in their 2018 Waste Diversion Report, about 50% of waste that was not diverted (through recycling or composting) was sent to a landfill, and the other 50% was sent to a waste-to-energy facility (Zero Waste DC, n.d., 8-10) Under this assumption, a more-accurate estimate of methane emissions from 2018 landfilled food waste is 22,588.046 metric tons of fugitive methane and 1674.783 metric tons of carbon remaining in the landfill. Burning food waste in waste-to-energy facilities does not typically emit methane, as decomposition is limited. Still, burning food waste does emit carbon dioxide.

Focusing on methane emissions to meet District Climate Goals

Overall, the methane emission potential for the District's 2018 food waste was estimated at 2,588.06 metric tons. This is equivalent to the average annual methane emissions release for 21,612 cows (Environmental Protection Agency 2020). While 2,588.06 metric tons of methane is an approximation, it represents

how much methane the District produced in 2018 as a result of not diverting food waste from landfills. Considering methane is 28 times more potent as a planet-warming gas compared to carbon dioxide, having 2,500 tons of avoidable methane emissions in one year is a significant obstruction to efforts of the District to participate in climate change mitigation efforts (Environmental Protection Agency 2020). However, methane is considered a "short-lived" pollutant compared to carbon dioxide, as methane typically lives in the atmosphere for about 12 years before breaking down. Carbon dioxide that is not absorbed by plants or oceans can last in the atmosphere for hundreds to thousands of years, meaning carbon dioxide emitted now can impact the climate for potentially thousands of years in the future (Clark 2012). With this in mind, methane emissions should be an area of D.C. government focus in regard to climate change efforts, as limiting methane emissions now benefits the climate system sooner and with greater impact on planet-warming potential than carbon dioxide.

Alternative Solutions

Biennial waste diversion reports

Under District law, the mayor is required to compile a solid waste characterization study every four years, with many specifications relating to waste outputs, facilities used, and most notably the residential and citywide waste diversion rates Zero Waste Amendment Act of 2020, Section 8–1031.13 (2020)). However, in order to ensure that solid waste management efforts are upkept year-to-year, amending this law to require solid waste characterization studies every two years is vital. Amending the law would allow the District and DPW to change its course of action on composting programs and their funding depending on the changing needs of District residents and how they respond to new or expanded compost programs. Under current measures, as the fourth year of a study's use approaches, the data and information reported becomes less applicable to the current day, as waste diversion rates and total citywide waste generation can change based on population changes, funding gaps, etc. The more recent the data, the more appropriate it is to use in the development of composting programs. This

timeline of biennial solid waste characterization studies is short and would likely incur costs related to labor and hiring consultants. However, it also requires the D.C. government to collect the information outlined under D.C. law regularly and abundantly, a benefit to transparency as well as cost-effectiveness of capital investments in composting infrastructure and initiatives. Furthermore, by studying and reporting waste generation and diversion biennially, resources can be properly allocated away from landfill waste collection and towards recycling and compost collection services; meaning, as DPW grows their recycling and composting efforts in the District, waste diversion activities including collection can likewise increase as they are demanded. Issues concerning budget constraints with enacting more composting programs in D.C. are remedied by (1) understanding the timeline and demand for upping programming, and (2) the costs associated with transporting organic waste to facilities outside D.C. are almost 30% cheaper than landfill waste transportation. According to DPW, while landfill waste costs the city $64/ton to transport to facilities outside the District, organic waste costs the city only $45/ton. Had the amount of landfill waste estimated for 2022 been organic waste, the District would have saved $13,857,637.30–money that would completely fund all six Actions in the Zero Waste DC Plan dedicated to reducing per capita waste generation (Zero Waste DC 2024, 11).

Rebate for hiring private contractors

To build on the existing methods of composting in the District, one method for increasing participation in composting is a rebate for residents to hire a private compost collector. Currently, there are three main companies that collect organic waste from residents in the DMV area. These include Compost Crew and Compost Cab, which offer commercial and residential organic waste pickup, and Veteran Compost DC which only deals with residential organic waste collection. Veteran Compost DC offers a $32/month plan for at-home pick up or you can participate in an “on-farm bin swap” for $15/month (Veteran Compost DC, n.d.). Compost Cab also offers a $32/month plan for at home pick up, however they will collect organic waste from office buildings for $90/month or other commercial spaces depending

on the size of the space (Compost Cab, n.d.). Compost Crew offers the same $32/month plan, however some neighborhoods/communities pay lower rates “due to the number of people already composting” (Compost Crew, n.d.).

Compost Crew provides service to many communities at a discounted rate or free of charge, including City of College Park, Town of Chevy Chase, and City of Falls Church (Compost Crew, n.d). Given the proven method of support from towns and municipalities to provide Compost Crew’s services to residents, the possibility of bringing such a rebate system to Washington is present with limitations. The scale of Compost Crew’s staff and the facilities they bring compost to likely would not be able to support the hundreds of thousands of residents residing in single-family homes (McConnell and Sayin 2023). Furthermore, the cost incurred by the District for introducing a rebate program would likely be high compared to other programs and therefore require significant study of viability.

Action 32 of the Zero Waste DC Plan outlines providing “zero waste financial assistance” for small businesses and organizations (Zero Waste DC 2024, 42). With this action, Zero Waste DC intends to create new tax credits for businesses to increase their waste diversion efforts and reduce overall waste output. However, amending action 32 to include financial assistance for residents would bring the opportunity for more people to have their compost collected.

To implement a private collection rebate in a financially feasible manner, priority could be given to residents with disabilities. Individuals with disabilities can often be overlooked in how environmental regulations and new practices affect them. For example, plastic straw bans make it harder for individuals with mobility issues to drink from a cup (Valley, n.d.) and farmer’s markets may be inaccessible to individuals with mobility aids (Raposo, n.d.). In many cases, the fight to improve environmental conditions and decrease environmental footprints can leave out the voices of individuals with disabilities, and a program to offer free or reduced fare compost pick up for those individuals is a pillar to the overall goal of bringing composting to everyone in an accessible and equitable manner. Residents enrolled in the Supplemental Security Income Program or Medicaid could receive a full rebate for the $32/month fee for at-home compost collection that is consistent

among private compost collectors, or a reduced rate depending on the funding available for such a program.

Another method for a rebate program is implementing a similar program to that in Maryland and Virginia municipalities where entire towns or communities receive reduced or free collection from Compost Crew, and focus could be set on areas of Washington, D.C. with high food insecurity. This method could be an agreement between DPW, Compost Crew, and the organic composting facilities Compost Crew delivered to; with the goal of increasing access to healthy food in food deserted communities through community gardens, compost collected by Compost Crew and brought to Virginia or Maryland could be brought back to those communities after the composting process is completed or "finished." With that finished compost, community gardens can continue to grow produce and help make healthy foods more accessible to food insecure communities, creating a local circular food model.

Composting guidance for multi-family buildings

Action 24 of the Zero Waste DC Plan aims to require all new multi-family residential buildings—buildings with 3 or more "dwelling" units—to separate recycling and organics, adding to the current Green Construction Code that only mandates recycling separation (DC Department of Buildings, n.d.). The action has a target completion date for 2032 and would also include all existing multi-family residences to also separate recycling and organic waste (Zero Waste DC 2024, 13). Further, while the start-up costs are estimated to be between $0 and $999,999 (rated the lowest range for Start-Up Cost) the greenhouse gas (GHG) emissions reduction potential is rated third highest at between 30,000 and 59,999 metric tons CO_2 equivalent ($MTCO_2e$). The GHG emission reduction effectiveness from a cheap upfront investment for requiring multi-family residences to sort recycling and organics is therefore high and an action that should be studied to implement sooner than 2032.

If the Green Construction Code is revised to include requirements on organic waste separation, standards and practices must be created to guide multiple dwellings in how to collect organic waste in ways that best suit the building. Buildings in Washington have different limitations to organic waste collection, including problems like rats that afflict many buildings, or odor from organic waste decomposition. Therefore, guidance on collecting organics should be researched and developed to address the barriers to apartment buildings collecting organic waste. Action 20 of the Zero Waste DC Plan outlines reducing barriers for residents to compost on-site and doing so for multiple dwellings is beneficial to residents and to local governments (Zero Waste DC 2024, 13). Guidance on on-site composting for apartment buildings and multiple dwellings may limit the amount of organic waste that would need to be collected by private haulers and therefore ensure capacity is not hit at the composting facilities in Maryland or Virginia. DPW's experience with operating community gardens would be valuable to any codes or guidance issued by DOB and DOEE for multiple dwellings to compost on-site and potentially use that compost in a garden. Further, the composting systems used in the Community Compost Cooperative Network could be emulated in multiple dwelling units with the number of composters installed varying based on the number of units in the building (DC Department of Parks and Recreation, n.d.).

Community gardens

The Community Gardens program, operated by DPR, is large in Washington, however expanding the program could benefit composting and food insecurity simultaneously, as well as the social benefits associated with community gardens. The program has gardens across all wards, with higher concentrations in northeast and southeast D.C. The southeast area particularly close to the Anacostia neighborhood has 6 community gardens established close to the DC-Maryland border (DC Department of Parks and Recreation, n.d.). However, in the same way on-site composting at multiple dwellings can help alleviate the capacity for organic waste processing facilities, so can community gardens, and the food they would provide is an obvious benefit. Community gardens also serve as a space for

neighborhoods and communities to gather and potentially strengthen communal activism. They can also be an educational tool for youth empowerment. For children, community gardens are an out-of-school activity that teaches teamwork, the power of contributing to community, and the importance of nutrition (Ober Allen 2008). The structure of a community garden also provides youth with the guidance of following rules and the expectation of acting appropriately in social settings. New community gardens could be established in locations that already serve as community pillars for social engagement. For example, D.C. public libraries offer communities many services such as a social space to connect. The 26 public libraries across Washington could further serve as connection points with a community garden placed nearby (District of Columbia Public Library, n.d.).

Policy Recommendations

Education and outreach programming

Engaging the public in their input on composting programs and the benefits they hope to see is essential to any new composting policy or program. As such, the District of Columbia should move forward with their compost and food waste diversion goals with two focuses: one on programs, and one on people. To create the former, the latter must be addressed through engagement with residents of each ward to create educational content and build programs that are not just helpful for the District's composting rates but also for a community's needs and problems.

Using current community-based approaches to compost, such as food waste drop off points at farmers' markets, educational content created for composting initiatives must be relevant to a community. Each community and Ward has different needs and prevalent issues (Ward 8 is not going to have the same priorities as Ward 3, for example), so the way agencies educate residents on the correct way to sort waste and/or compost must reflect the issues each ward cares about. For example, in areas of higher poverty and food stress, composting could be a tool to provide residents with fresh food through community gardening

programs. Further, communities with multiple generations living within one household likely would be stressed for space, including freezer space. Freezers are commonly used to store organic waste from kitchen scraps to mitigate odor from decomposition. For large families in a household, freezer space might be limited and therefore freezing organics to limit odor may not be an option. Both examples present the reality that composting policy cannot be blanket and it cannot be done without community input, but what works in one community will not always work in another.

One form of engagement with District communities should be the surveying of needs and barriers to composting. Surveying of similar information was completed as part of the Zero Waste DC Plan, where a 5,330 resident pool stated concerns for rodents (20.69%), accessibility to waste services (23.36%), and odor/smell (4.37%) in regard to waste collection in their communities (Zero Waste DC 2024, 10). This data is important background information for Zero Waste DC to consider when completing new surveys about composting specific to certain communities. There are many methods available to gather information from communities, one of which is a simple survey that can be shared within Facebook groups. “Buy Nothing” groups are common in D.C. communities and allow people to give things they no longer need to other members of the community. This type of group is a great place to survey residents of specific areas to get their input and can be completed with fairly little labor. Opportunity sampling has some ease in completing in that the researchers sample people with convenience of location or willingness to participate and can be done in one location such as a library or public place of worship. Both methods provide the sought-after information on composting in a specific community, and with proper funding and staffing, would provide deeper insights into how the Government of D.C. should increase its engagement in composting.

Composting must be convenient for residents to engage with. The issues like rodents or odor or access to waste services all exemplify that sorting waste is done when it is convenient to the person doing it, and when it is inconvenient, far less people are willing to engage. 85.58% of survey respondents said that convenience

was most important in relation to waste management (Zero Waste DC 2024, 10). "Affordability" ranked second at 73.08% and "environmental benefit" ranked third. While most people desire to help improve the environment, not everyone can sacrifice certain habits and the convenience of those habits for the sake of benefiting the environment. Therefore, no programming or educational content can be effective without addressing convenience.

Three-bin collection system is the future

The Zero Waste DC Plan action 18 will create standard waste receptacles for trash, recycling, compost, and pet-waste (Zero Waste DC 2024, 12). Action 14—along with requiring waste separation for trash, compost and recycling in the commercial and public sectors—aims to establish a three-bin system where DPW collects compost, trash and recycling from all single-family homes. The goal is to provide this by 2025, however the investments needed are among the highest of any action in the Plan. This is because investments are required for the collection bins, for composting infrastructure and facilities to process the increased amount of organic waste collected, for labor that is needed to collect organics and the trucks needed to transport the waste. The most expensive part of residential waste collection is the transportation, however considering the financial benefits to properly diverting organic waste to composting facilities instead of landfills or incinerators, investing in more trucks and people to collect compost is financially justified (Josephson 2023). Based on the urgent timelines of actions 14 and 18, proper waste sorting is a priority for the District of Columbia.

To ensure that the timelines for action 14 and 18 are met, the District could start by establishing a three-bin system in the Government of D.C. office buildings. The District could also work with the U.S. General Services Administration (GSA), the largest commercial property owner in the District, to implement a three-bin system. D.C. government buildings and GSA-owned and -maintained buildings serve thousands of workers and if that population had the facilities to sort waste properly in their workplace, improvements on waste diversion rates would materialize quickly. Considering the District Government's desire to bring more

government workers back to the office, a three-bin system would benefit waste diversion efforts now and minimize any increased waste generation because of more workers present in Washington office buildings (Wamsley 2024).

Another method to implementing a three-bin system could be a public-private partnership, similar to that of San Francisco. The San Francisco Department of Public Works partners with private company Recology to have them collect and process all residential trash, recycling and compost (San Francisco Department of Public Works, n.d.). The company provides the bins as well, and residents pay the company directly for the waste collection each week. Recology has collected San Francisco's trash since 1921, therefore the relationship between public and private is quite different from what it would take for the District to establish a similar partnership (Recology, n.d.). With private company Compost Crew already providing the food waste collection services under the Curbside Composting Pilot Program, the method of public-private partnership is already established. After completion of the pilot, D.C. would need to invest in scaling up compost collection. The benefits to a public-private partnership versus an entirely publicly owned collection system is contested, where some argue that private waste collection allows for innovation of collection and processing practices as well as efficiency benefits (National Waste and Recycling Association, n.d.). However, research indicated conflicting results where some municipalities benefit from promoting private collection, while others were plagued by corruption or poor waste collection practices (Sandhu, Barton, and Dedekorkut-Howes 2017). Due to the conflicting research, studying the possibility of an expanded public-private partnership for composting is necessary, and insights about this partnership from the Curbside Composting Pilot Program will be valuable upon its completion. Given the success of San Francisco's partnership, where the city now has an 80% diversion and reduced waste to landfill by half between 2010 and 2020, research should be conducted to assess viability in Washington (San Francisco Environment Department 2022).

Concluding Remarks

The District of Columbia serves residents of highly variable income levels and the differences between wards or neighborhoods are clear; however, the greatest challenge to making composting more accessible and therefore increase the waste diversion rate is the District's inability to expand outward. Unlike most cities, Washington, D.C. is confined to the district lines defined by Congress and therefore does not have new land to procure and develop. As it relates to composting, the District cannot increase composting rates and access through major infrastructure projects inside district lines. D.C. must be creative in its solutions and infrastructure projects as it collaborates with the governments of Maryland and Virginia to provide the services that cannot be placed in the District. Further, that inability to expand, in a way, forces the Government of D.C. to focus ever more intently on the space used in D.C. and the communities that occupy it.

Composting is one step in the District's zero waste aspirations, but it is one that can achieve great benefits outside of zero waste status. Methane emissions would be reduced which is a benefit to surface temperatures. Food insecurity can be improved. Social engagements can increase and with that comes greater civic engagement in the problems facing a community. Overall, improving composting programs and services in the District will not only divert organic waste from landfills, but it will also improve the awareness of residents to the waste they produce and, provided it's convenient, engage new people in the ways the individual can make the District of Columbia a "green city" and an equitable city.

References

Charles, Dan. 2024. "Curbside composting is working in DC. But don't know those bags!" *Greater Greater Washington,* January 30, 2024. https://ggwash.org/view/92373/curbside-composting-is-working-in-dc-but-dont-knot-those-bags.

Clark, Duncan. 2012. "How long do greenhouse gases stay in the air?" *The Guardian*, January 16, 2012. https://www.theguardian.com/environment/2012/jan/16/greenhouse-gases-remain-air.

Compost Cab. n.d.“Compost Cab.” Compost Cab. Accessed April 1, 2024. https://compostcab.com/.

Compost Crew. n.d.“Compost Crew: Residential.” Compost Crew. Accessed April 2, 2024. https://compostcrew.com/our-services/residential/.

DC Department of Buildings. n.d. “2017 District of Columbia Green Construction Code.” Government of the District of Columbia. Accessed March 22, 2024. https://dob.dc.gov/sites/default/files/dc/sites/dob/publication/attachments/2017%20DC%20Green%20Construction%20Code.pdf.

DC Department of Parks and Recreation. n.d. “Community Compost Cooperative Network.” Accessed March 2, 2024. https://dpr.dc.gov/page/community-compost-cooperative-network.

DC Department of Parks and Recreation. n.d. “Community Gardens.” Accessed March 23, 2024. https://dpr.dc.gov/page/community-gardens.

DC Department of Public Works. 2025. “DPW Launches Food Waste ‘Smart Bin’ Program to Expand Composting Access Citywide.” *DC Department of Public Works Release*, February 14, 2025. https://dpw.dc.gov/release/dpw-launches-food-waste-%E2%80%98smart-bin%E2%80%99-program-expand-composting-access-citywide.

DC Department of Public Works. n.d. “Yard Waste Collection.” Accessed March 17, 2024. https://dpw.dc.gov/yard-waste.

DC Government. 2024. “Mayor Bowser Launches Pop-Up Permit Program to Activate Vacant Spaces and Bring More People to Downtown DC.” *DC Government Release*, April 22, 2024. https://dc.gov/release/mayor-bowser-launches-pop-permit-program-activate-vacant-spaces-and-bring-more-people.

DC Office of Waste Diversion. 2021. “Desktop Waste Characterization Study.” Zero Waste DC. https://zerowaste.dc.gov/sites/default/files/dc/sites/zerowaste/Desktop%20WCS%20Final%20Report%203-10-21.pdf.

DC Office of Waste Diversion. n.d. “Solid Waste Diversion Annual Report Calendar Year 2018.” Zero Waste DC. Accessed March 4, 2024.

https://zerowaste.dc.gov/sites/default/files/dc/sites/zerowaste/CY%2018%20Diversion%20Report%20Final%203%2010%2021.pdf.

DC Office of Waste Diversion. n.d. "Solid Waste Diversion Annual Report 2019-2022." Zero Waste DC. Accessed February 22, 2024. https://dpw.dc.gov/sites/default/files/dc/sites/dpw/page_content/attachments/Solid%20Waste%20Diversion%20Report%202019-2022.pdf.

District of Columbia Public Library. n.d. "DC Public Library: Plan a Visit." Accessed April 10, 2024. https://www.dclibrary.org/plan-visit.

Environmental Protection Agency. 2020. "Agriculture and Aquaculture: Food for Thought." EPA Southeast New England Program. Last modified January 15, 2025. https://www.epa.gov/snep/agriculture-and-aquaculture-food-thought#:~:text=A%20single%20cow%20produces%20between,(Our%20World%20in%20Data).

Environmental Protection Agency. 2020. "Composting Food Waste: Getting a Good Thing Going." EPA Southeast New England Program. Last modified June 21, 2024. https://www.epa.gov/snep/composting-food-waste-keeping-good-thing-going.

Environmental Protection Agency. n.d. "Importance of Methane." EPA Global Methane Initiative. Last updated March 3, 2025. https://www.epa.gov/gmi/importance-methane#:~:text=Methane%20is%20more%20than%2028,due%20to%20human%2Drelated%20activities.

Environmental Protection Agency. 2023. "Quantifying Methane Emissions from Landfilled Food Waste." EPA. Effective October 2023. https://www.epa.gov/system/files/documents/2023-10/food-waste-landfill-methane-10-8-23-final_508-compliant.pdf.

Fenston, Jacob. 2023. "After Delays, D.C. Finally Launches Citywide Curbside Composting Pilot." *DCist*, September 4, 2023. https://dcist.com/story/23/09/04/dc-finally-rolling-out-citywide-composting-pilot/.

Josephson, Amelia. 2023. "The Economics of Composting." *SmartAsset,* May 30, 2023. https://smartasset.com/mortgage/the-economics-of-composting.

McConnell, Bailey and Yesmin Sayin. 2023. “D.C.’s household growth is predominantly driven by singles aged 25 to 34.” *D.C. Policy Center,* October 2, 2023. https://www.dcpolicycenter.org/publications/household-growth-singles/#:~:text=This%20growth%20has%20been%20largely,45%20percent%20to%2040%20percent.

National Waste and Recycling Association. n.d. “Privatization of Waste and Recycling Services.” Last updated January 2019. https://wasterecycling.org/privatization-of-waste-and-recycling-services/.

Ober Allen, Julie, Katherine Alaimo, Doris Elam, and Elizabeth Perry. 2008. “Growing Vegetables and Values: Benefits of Neighborhood-based Community Gardens for Youth Development and Nutrition.” *Journal of Hunger and Environmental Nutrition* 3 (4): 418-39. https://doi.org/10.1080/19320240802529169.

Open Data DC. n.d. “Food Waste Drop Off.” Open Data DC. Accessed March 10, 2025. https://opendata.dc.gov/datasets/e7b2cf859b584a899ca3a3fe67095695_59/explore?location=38.892284%2C-77.016633%2C11.05.

Raposo, Jacqueline. n.d. “Disabled environmentalists talk eco-ableism in Food Sustainability.” *Jacqueline Rapos.* Accessed April 12, 2024. https://jacquelineraposo.com/select-stories/eco-ableism-disability-food-sustainability.

Recology. n.d. “Our History.” Accessed March 15, 2024. https://www.recology.com/about-us/our-history/.

Sandhu, Kiran, Paul Barton, and Aysin Dedekorkut-Howes. 2017. “Between hype and veracity; privatization of municipal solid waste management and its impacts on the informal waste sector.” *Waste Management* 59: 545-56. https://www.sciencedirect.com/science/article/abs/pii/S0956053X16305670.

San Francisco Department of Public Works. n.d. “Recycling and Refuse Collection.” Services. Accessed March 15, 2024. https://www.sfpublicworks.org/services/recycling-and-refuse-collection#:~:text=We%20work%20non%2Dstop%20to,their%20regularly%20scheduled%20refuse%20pickups.

San Francisco Environment Department. 2022. “San Francisco Sets North American Record for Recycling & Composting with 80 Percent Diversion Rate.” *Government of San Francisco*, July 22, 2022. https://www.sfenvironment.org/blog/san-francisco-sets-north-american-record-recycling-composting-80-percent-diversion-rate.

U.S. General Services Administration. n.d. “Property Management Services in NCR.” GSA Region 11. Accessed April 11, 2024. https://www.gsa.gov/about-us/gsa-regions/region-11-national-capital/products-and-services/property-management-services.

Valley, Erin. n.d. “Grasping at Straws: The Ableism of the Straw Ban.*” Center for Disability Rights*. Accessed April 4, 2024. https://cdrnys.org/blog/disability-dialogue/grasping-at-straws-the-ableism-of-the-straw-ban/.

Varner, Greg. 2024. “GW Partners with D.C.’s Department of Public Works to Collect Organic Waste.” *GW Today,* July 2, 2024. https://gwtoday.gwu.edu/gw-partners-dcs-department-public-works-collect-organic-waste.

Veteran Compost DC. n.d. “Veteran Compost DC: From Combat to Compost.” Accessed April 1, 2024. https://veterancompostindc.com/.

Wamsley, Laurel. 2024. “Mayor of Washington, D.C., Pushes for Workers to Return to the Office.” *NPR,* February 12, 2024. https://www.npr.org/2024/02/12/1230987893/mayor-of-washington-d-c-pushes-for-workers-to-return-to-the-office.

Zero Waste DC. n.d. “Compost DC: Food Waste Collection program.” Zero Waste DC. Last accessed February 15, 2025. https://zerowaste.dc.gov/curbsidecomposting.

Zero Waste DC. n.d. “Food Waste Drop-Off.” Zero Waste DC. Last access March 10, 2025. https://zerowaste.dc.gov/foodwastedropoff.

Zero Waste DC. n.d. “Home Composting Program.” Zero Waste DC. Last accessed January 12, 2025. https://zerowaste.dc.gov/homecomposting.

Zero Waste DC. 2024. “Zero Waste DC Plan.” Effective February 8, 2024. https://zerowaste.dc.gov/sites/default/files/dc/sites/zerowaste/page_content/attachments/The%20Zero%20Waste%20DC%20Plan.pdf.

Zero Waste Omnibus Amendment Act of 2020. 2020. D.C. Law 23-211 § 8–1031.03a. https://code.dccouncil.gov/us/dc/council/laws/23-211.

Zero Waste Omnibus Amendment Act of 2020. 2020. D.C. 2020. Law 23-211 § 8–1031.12c. https://code.dccouncil.gov/us/dc/council/laws/23-211.

Zero Waste Omnibus Amendment Act of 2020. 2020. D.C. Law 23-211 § 8–1031.13. https://code.dccouncil.gov/us/dc/council/laws/23-211.