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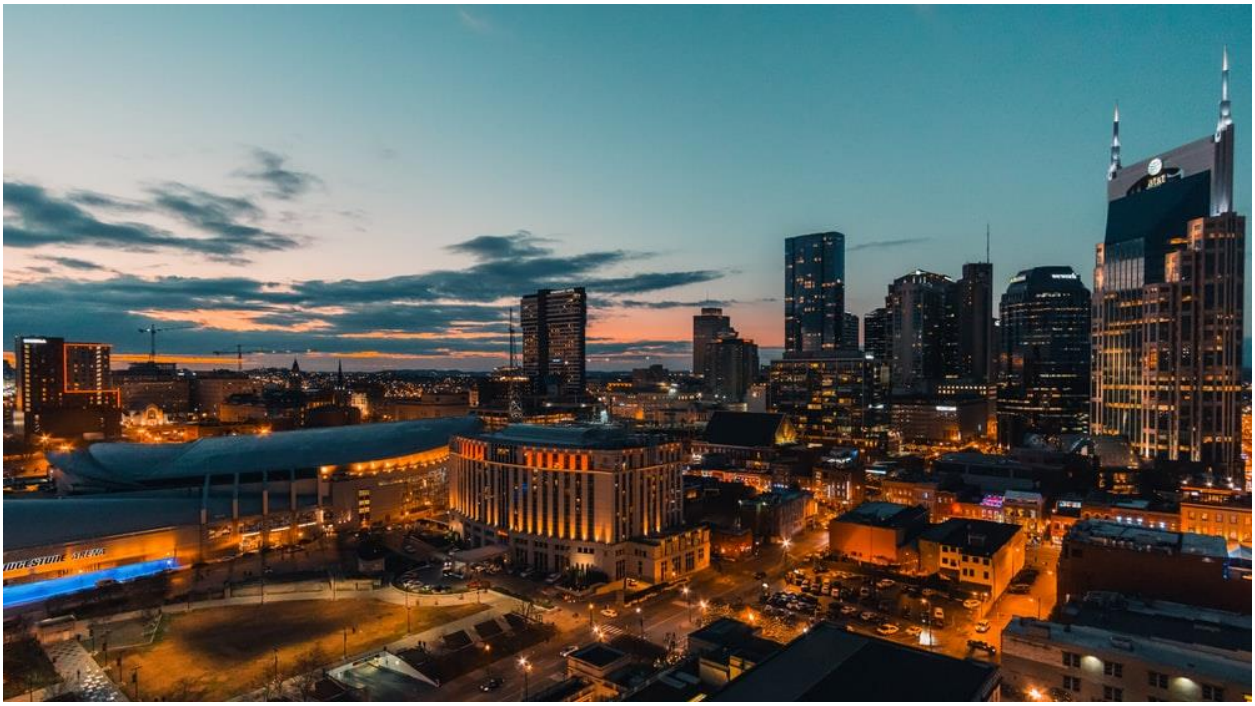

Landscape Analysis of Community Composting in Nashville

NASHVILLE FOOD WASTE INITIATIVE

ENVIRONMENTAL LAW • INSTITUTE®

Contents

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I. Introduction

Up to 40 percent of food in the United States is wasted.[1] Significant resources, including up to one-fifth of the cropland, fertilizers, and agricultural water used in the United States, are used to grow food that is not eaten.[2] An estimated 94 percent of discarded food goes to disposal, primarily landfills, where it decomposes and releases methane, a potent greenhouse gas and significant contributor to climate change;[3] on average food waste is the largest component of US landfill waste by weight and is the source of at least 2.6 percent of US greenhouse gas emissions.[4] The value of this wasted food is estimated to be up to $218 billion a year.[5] Food is wasted in all parts of the United States, and Nashville is no exception: research by the Natural Resources Defense Council (NRDC) indicates that over 175,000 tons of food are wasted annually in Nashville.[6] Additionally, food scraps constitute the single largest component by weight of landfilled municipal solid waste (MSW) in Davidson County.[7]

Consistent with the U.S. Environmental Protection Agency's Food Recovery Hierarchy, the Nashville Food Waste Initiative's (NFWI)[8] efforts prioritize in order: preventing food waste, rescuing surplus food, and food scrap recycling. The latter, which refers to the recovery of nutrients from and diversion of food scraps, whether through composting or anaerobic digestion,[9] is not the highest priority action for reducing food waste, but nevertheless plays a key role in efforts to divert wasted food from landfills and prevent associated methane emissions and nutrient loss. Food scrap recycling is far preferable to landfilling as a means of handling food that is inedible or no longer suitable for human or animal consumption, but in order for food scrap recycling to serve as a viable alternative to landfilling, it is essential for communities to have robust and diversified food scrap recycling infrastructures. If a community is entirely dependent on a single food scrap processor and that processor experiences permitting or operational difficulties, there will be no option but for food scraps to be landfilled or incinerated. Community composting—which refers to a variety of composting projects that are larger than backyard composting but smaller than centralized, large-scale composting—can be a valuable part of a resilient food scrap recycling infrastructure, even though it offers significantly lower diversion potential than do centralized composting and anaerobic digestion. [10]

Moreover, community composting projects can be cheaper and quicker to design and launch than larger-scale composting facilities, and community composting is estimated to have higher diversion potential than practices such as backyard composting, diversion of food scraps for use as animal feed, and

[1] Gunders and Bloom 2017, 4.
[2] Ibid.
[3] US EPA 2019a, 4.
[4] Gunders and Bloom 2017, 4.
[5] Ibid.
[6] Hoover 2017, 51.
[7] CDM Smith 2019a, C-5.
[8] The Nashville Food Waste Initiative is a project of the Natural Resources Defense Council. For more, see here.
[9] The United States Environmental Protection Agency (US EPA) prioritizes food waste management strategies as follows: reducing the volume of surplus food generated; donating extra food to feed hungry people; diverting food scraps to feed animals; providing food scraps for industrial uses; composting; and landfilling/incinerating as a last resort. US EPA 2019b.
[10] ReFED defines community composting as "Transporting food from homes by truck, car, or bicycle to small, community, or neighborhood-level compost facilities that process 2,500 tons per year on average" and notes that such operations "typically use volunteers and less sophisticated equipment[.]" ReFED 2019a; ReFED 2019b.

in-vessel composting.[11] Community composting can also provide a number of other environmental and social benefits. It can engage communities in composting and sustainable waste management practices and help people learn how to compost properly, increasing demand for and interest in composting—and making higher-diversion organics recycling programs (such as curbside pickup and drop off at centralized facilities) more successful by reducing contamination.[12] Community composting can also enhance local soils and local food production.[13] In addition to its waste management and environmental benefits, community composting can empower and strengthen communities by bringing people together and providing useful skills and jobs training. [14]

Recognizing that an estimated 67 percent of Nashville's food waste is generated by industrial, commercial, and institutional (ICI) generators, previous NFWI research examined barriers and opportunities related to food scrap recycling by these sectors in Nashville. While conducting that research, NFWI researchers identified no community scale composting projects in Nashville. This report provides background information on community composting, examines barriers to the development and operation of community composting projects, and outlines opportunities for forwarding community composting in Nashville.

II. Research Approach

NFWI's research approach consisted of several components: telephone interviews with national experts on community composting, telephone interviews with key local stakeholders, and review of primary and secondary literature on community composting authored by leading organizations in the field such as the Institute for Local Self-Reliance (ILSR). Interviewees represent a broad range of local stakeholder groups, including former and prospective community composting facility operators, prospective compost educators, compost haulers, waste management consultants, prospective compost project hosts, and governmental entities. Interviewees were asked questions about the barriers and opportunities to community composting in Nashville, as well as questions tailored to their specific areas of expertise. NFWI also received comments from experts, whose insights are reflected and referenced throughout the report. In all, over a dozen stakeholders and experts participated in interviews with NFWI researchers or provided feedback on report drafts.

Because no community composting currently exists in Nashville, NFWI sought to supplement the insights gleaned from interviews with research about approaches used and successful community composting efforts elsewhere. Reference works consulted are cited throughout the report and listed in the bibliography.

[11] ReFED 2019a. Home composting can be difficult for apartment dwellers or people living in cold climates, in-vessel composting requires expensive equipment and creates additional work for business owners, and the majority of waste appropriate for use in animal feed is already being used. ReFED 2019c; ReFED 2019d; ReFED 2019e.
[12] *See* Platt et al. 2014, 10–11; Bilsens Brolis & Platt 2019, 7.
[13] *See* Platt et al. 2014, 10–11; Bilsens Brolis & Platt 2019, 7.
[14] *See* Platt et al. 2014, 10–11; Bilsens Brolis & Platt 2019, 7.

III. Background

A. *Community composting in Nashville*

NFWI's research identified no active community composting projects in Nashville. While many other cities have no or minimal community composting, community composting systems have developed in some mid-sized cities.[15] NFWI did identify one defunct community composting project in Nashville. According to an interviewee, the project was located at a community garden (also defunct) and accepted food scraps, including coffee grounds, from commercial generators. In 2011, the state government dismantled the site after receiving complaints from neighbors.[16] The interviewee explained that the garden manager then moved the project to several other sites, each of which closed because of a lack of community interest and engagement.

Interviewees also noted that there were several local sites where composting had been proposed or explored, but had not ultimately materialized. Most notably, interviewees explained that one nonprofit that operated an urban farm had worked with Metro Public Works to establish a demonstration compost project at the farm, but that the partnership fell through after the nonprofit decided to stop managing the farm.

In 2017, the Metropolitan Government of Nashville and Davidson County (Metro) set a long-term goal of achieving zero waste to landfill[17] and contracted engineering firm CDM Smith to develop a Solid Waste Master Plan ("master plan") for achieving this goal. While the master plan does not specifically refer to or contain recommendations regarding community composting, it is possible that increased education and outreach on waste management and diversion (which are recommended in the master plan) could generate interest in community composting, particularly since organics are one of the primary materials found in the local waste stream. Moreover, community composting could complement master plan implementation efforts by increasing community knowledge of proper composting practices, thereby

[15] For instance, the Austin, TX, Resource Recovery Department established composting trainings at community gardens and implemented junior and master composter training programs. Platt et al. 2014, 116. NFWI research identified 18 community composting projects in Austin, located primarily at community gardens but also at churches and a senior center (NFWI was able to confirm that seven are still composting and one is not, and could not confirm whether composting is still occurring at the other ten locations). Compost Coalition 2016; Coalition of Austin Community Gardens 2020. Another mid-sized city with a robust community composting network is Tampa, FL, in which at least eight community composting projects are currently active at community gardens, urban farms, and at least one middle school. Hillsborough Composting n.d. (Email correspondence confirmed that these sites were all active as of July 2019.) Lastly, in Baltimore, MD, there are four community composting projects that accept food scraps and are located at community gardens. One of the sites is managed by the Baltimore Compost Collective, a program that picks up food scraps from residences near the site and manages the composting project, while also providing employment and mentoring to its youth employees. Resource Recycling Systems 2019, 29. For more on community composting in other cities, see ILSR's Composting for Community Map and *Growing Local Fertility* report and MakeSoil's map of community composting sites. In Nashville, NFWI did identify one composting project managed by volunteers from and hosted at a local nonprofit, but an interviewee indicated that this project only accepts food scraps from the nonprofit's kitchen and from volunteers' homes—and not from neighbors or other unaffiliated community members. An interviewee also explained that the nonprofit accepts paper scraps from shredders and runs a "leaf drive" to acquire additional brown material, and that the nonprofit has limited capacity to receive or process additional organic material for composting and, in fact, contracts with a local compost hauler for pickup of excess food scraps.

[16] George 2011.

[17] Defined as diversion at or above 90 percent. Resource Recycling Systems 2018, 2.

decreasing contamination if and when curbside pickup of organics begins.[18] Community composting is also an important part of a robust and resilient food scrap recycling infrastructure and can be important to pursue in tandem with higher-diversion organic recycling practices.[19]

Interviewees indicated that most people in Nashville who are interested in composting either compost in their backyard or contract with a private hauler for food scrap pickup.[20] Metro Public Works has taken some steps to increase residential backyard composting, including providing education on backyard composting and selling backyard composting bins.[21] While backyard composting is an important component of a zero waste plan and a robust and diversified food scrap recycling infrastructure, and centralized food scrap recycling has significantly higher diversion potential than community composting,[22] interviewees explained that neither are likely to result in the community-related benefits associated with community composting (discussed above).[23]

B. *Regulatory landscape*

As explored in the *Landscape Analysis of Industrial, Commercial, and Institutional Food Scrap Recycling in Nashville*,[24] organics recycling facilities in Nashville—including community composting projects—must comply with both Metro and State requirements. Metro requirements identified as relevant to food scrap recycling facilities include zoning ordinances and construction and stormwater permits. While the zoning code seems to allow composting at community gardens and in agricultural and possibly industrial and commercial zones, a use permit is required prior to operation of a community garden.[25] The State, rather than Metro, is responsible for permitting organics recycling facilities. Permit applications are submitted to Tennessee Department of Environment and Conservation (TDEC) field offices, but may require approval from several TDEC programs, including those that regulate waste, air, and stormwater.

In 2016, the State's rules were amended to encourage diversion of organic material by exempting certain small-scale projects from permitting requirements. Under the new rules, facilities that compost 400 cubic yards of yard and wood waste and similar material per year (or less), 100 cubic yards of food scraps and similar material per year (or less) using an in-vessel method, and 50 cubic yards of food scraps

[18] Curbside pickup of organics, including food scraps, is included as the master plan as part of High-Performance Strategy 2, "Save-As-You-Throw Collection for Residential Sector," and intended to be included in implementation Phase 1 (years 1–4 of implementation). CDM Smith 2019b, 6-7.
[19] Currently, organics processing in Nashville occurs at a single commercial facility (household composting notwithstanding). In the event of permitting or operational difficulties and in the absence of other facilities capable of recycling food scraps (such as community composting projects), the most likely pathway for food scraps during any downtime at this facility would be for them to be landfilled or incinerated.
[20] According to the Resident and Business Online Solid Waste Survey conducted by CDM Smith as part of the master plan process, 9 percent of respondents living in single-family homes and 3 percent of respondents living in multifamily homes recycle their food scraps at home. According to the same survey, 5 percent of single-family respondents and 3 percent of multifamily respondents have contracted a private hauler for food scrap collection. CDM Smith 2019a, D-13.
[21] According to an interviewee, in FY 2019 Metro Public Works held 151 backyard composting workshops attended by over 3,100 people and distributed almost 1,400 backyard compost bins.
[22] ReFED 2019a.
[23] For more information on centralized food scrap recycling in Nashville, see NFWI's *Landscape Analysis of Industrial, Commercial, and Institutional Food Scrap Recycling in Nashville*.
[24] NFWI 2019.
[25] Metro Public Health Department 2013, 11, 19.

and similar material per year (or less) using other methods (such as windrows or turned piles, which are more likely to be in use at a small community composting facility[26]) are exempt from State permitting requirements.[27] As community composting projects typically process 100 cubic yards (≈40 tons) per year of organic material (including food scraps, which generally comprise a minority of compost feedstock, in addition to wood chips, yard waste, and other materials), community composting projects could easily be covered by this exemption.[28] Additionally, animal and crop production operations are exempt from permitting requirements if composting their own materials (including food scraps) onsite for use at an animal or crop production operation.[29]

IV. Discussion

A. *Barriers to community composting*

Interviewees identified a number of barriers to increased community composting in Nashville, including: limited interest in and awareness of community composting; limited available resources for management of community composting projects; difficulty recruiting and retaining volunteers; insufficient knowledge about the practice of composting; limited available land on which to site compost projects; zoning and regulations; and potential conflict with neighbors, who may perceive compost as likely to attract pests or create odors. Each of these barriers is discussed in turn.

Perhaps most critically, local interviewees indicated that there is not currently a high level of interest in organizing community composting projects. Interviewees explained that awareness of and interest in composting remain generally low in Nashville and that, in the absence of someone "passionate" who takes the initiative to start a community composting project, there is nothing to catalyze the growth of community composting. Interviewees noted that even those who are interested are more likely to save time and effort by composting in their backyards, or to pay a hauler to collect their food scraps for recycling elsewhere. Similarly, interviewees added that, even if there were community-based sites where community members could discard their food scraps, they may not have enough interest in community composting to expend the extra effort required and might continue to compost at home or to send their food scraps to landfill.[30] National expert interviewees confirmed that this lack of interest is not uncommon and explained that it is often necessary to build community awareness of the importance and practice of composting through master composter or other trainings.[31] As Brenda Platt, national community composting expert

[26] Platt et al. 2014, 13.
[27] TENN. COMP. R. & REGS. 0400-11-01-.11(1)(b)(3) (2019).
[28] Based on ILSR's survey of estimated volumes processed at select community-based operations, the median volume of which is 100 cubic yards, or approximately 40 tons using ILSR's conversion factor of 800 pounds per cubic yard. Platt et al. 2014, 29. *But see* ReFED 2019a (noting that community composting projects process 2,500 tons per year on average). *See also* US EPA 2016a, 3 (providing a conversion factor of 1,000 pounds per cubic yard of source separated organics).
[29] TENN. COMP. R. & REGS. 0400-11-01-.11(1)(b)(3)(ii) (2019).
[30] One interviewee indicated, however, that compost haulers could offer lower rates if they could drop off collected material at sites throughout the city and were not required to drive to the region's sole food scrap-accepting compost processor, which is located approximately 20 miles from downtown Nashville in Cheatham County. These lower rates could encourage more community members to begin paying a private hauler for food scrap collection and help spur community composting.
[31] Master composter trainings and their potential to kickstart community composting are discussed in greater detail in Section IV.B, "Opportunities for increased community composting."

with ILSR, noted, while there is no one way to build local composting, trainings accompanied by outreach and promotion had succeeded in building composting networks in several cities. As she put it, "You never know who you're going to get when you do…training," and even people without previous experience with or demonstrated interest in composting may go on to launch community composting projects or compost-related enterprises.

The limited availability of resources (namely, labor and funding) was cited by interviewees as another key reason for the lack of community composting in Nashville. Interviewees explained that a community composting project takes a significant amount of work to manage and operate: personnel are needed to add material and ensure that only compostable material and a proper balance of "green" and "brown" material is added;[32] monitor the system and temperature; and, in the less elaborate systems (such as windrows or bin systems) likely to be in use at community composting projects, turn the compost. Because community composting projects are often not operated as profit-generating enterprises and may not have funding to pay staff, these responsibilities often fall to volunteers.[33] One interviewee also noted that composting projects managed by groups of volunteers—such as, commonly, those located at community gardens—may lack a single accountable individual, increasing the likelihood that such projects fall into disrepair and attract pests or cause odors.

Many interviewees also opined that, even with a single individual coordinating composting efforts, it can be difficult to recruit and retain volunteers. As noted above, the perception among some interviewees is that in Nashville there is limited interest in—and understanding of the importance of—composting generally and in community composting in particular. Interviewees explained that, because composting projects are commonly co-located with or hosted by another community asset or organization (such as community gardens, food banks, or schools), people volunteering or otherwise involved with host organizations may be tasked with compost-related duties, even though they may have signed up to volunteer intending to help with other aspects of the organizations' work. Interviewees indicated that it can be difficult to keep these volunteers engaged, with one interviewee adding that otherwise enthusiastic and amenable volunteers may perceive compost as "smelly and dirty" and thus not be interested in working with it. Interviewees also noted that community gardens require more work than volunteers may realize, and that even volunteers who enthusiastically sign up to participate may become less interested once summer begins and outdoor temperatures increase, making manual labor more onerous. Interviewees stated that limited staffing can make proper composting difficult, or limit the viability of a given compost project.

Interviewees also identified limited practical knowledge of composting as a barrier to community composting. Inexperienced or inexpert compost managers may not maintain proper nutrient balance, particle size, moisture content, aeration, and temperature,[34] or may add inappropriate materials such as

[32] Successful aerobic composting requires a balance of nitrogen-rich "green" material (such as grass clippings, food scraps, and manure) and carbon-rich "brown" material (such as dry leaves, wood chips, and branches). US EPA 2016b; Bilsens Brolis & Platt 2019, 11.

[33] REFED 2019a. One notable exception discussed by ILSR's Brenda Platt is the case of New York City, whose Department of Sanitation pays for staff to manage compost programs hosted by seven local partners. For more, see New York City Department of Sanitation 2016.

[34] The Environmental Protection Agency identifies these quantities as the "five main areas that must be 'controlled' during composting." US EPA 2016b.

meat, bones, dairy, oils, diseased plants, or mature weeds with seeds.[35] For instance, one interviewee stated that they had heard of people "just toss[ing] food waste in the yard." Material deposited in improperly managed compost piles may decompose anaerobically instead of aerobically, which slows down the composting process and can discourage managers and cause them to stop composting.[36] Anaerobic compost piles also may not reach the temperature levels necessary to kill any pathogens in the feedstock.[37] Moreover, poorly managed compost piles can generate odors or attract pests, which can not only cause managers to stop composting but can also anger neighbors and create or encourage negative perceptions of composting. This can in turn make it more difficult for other composting projects to begin or continue, regardless of how well-operated they may be. Even projects that do not have pest or odor problems may produce low-quality compost, which can harm or fail to help plants to which it is applied. Interviewees indicated that it is preferable to have no community composting than to have poorly managed community compost projects; as Brenda Platt from ILSR put it, "[N]othing will doom small-scale [composting] more than a site with rat or odor problems, or that produces poor quality compost that kills plants." As explained above and below, these concerns can be especially pertinent at community composting projects, which may already struggle with effective composting due to limited staff/volunteer labor or oversight.

Interviewees also identified a lack of available land on which to compost as a barrier to community composting. One interviewee expressed that there might currently be people who are interested in beginning community composting projects, but who do not have access to land on which to do so. Another interviewee acknowledged that composting could and often does occur at community gardens, but said that the number of community gardens in Nashville has dropped in recent years as Nashville has grown, development has increased and intensified, and land has become more valuable. NFWI researchers could not determine the exact number of active community gardens in Nashville, but Sow Nashville—an initiative that works to facilitate the development of community gardens and urban farms and tracks community gardens in Nashville—currently identifies 16 community gardens in Nashville, and an interviewee stated that they identified 35–40 when last they counted approximately two years ago, both down from the "approximately 100" identified by the Metro Public Health Department (MPHD) in 2011.[38] Some of these gardens are located on Metro Parks land and thus may be suitable for composting. Additionally, Sow Nashville has identified 27 public and unused land parcels that are "available" for community gardening and that could potentially host community composting projects, and the Davidson County office of the University of Tennessee Agricultural Extension ("UT Extension") has identified flood buyback properties it is working to turn into community gardens.[39] One interviewee opined that land is not really a limitation because there are plenty of accessible flood buyback properties, but that there is a lack of awareness of and interest in the possibility of using these properties for gardening and composting, making it seem as though available land is limited.

One interviewee emphasized the importance of available land, noting that it would be less convenient for community members to drop off their food scraps at fewer and more dispersed composting sites than it would be if there were composting sites located at community gardens throughout the city. This

[35] Meat, bones, and dairy are compostable in some systems, but may attract pests or create odors and be slow to decompose in others. CalRecycle 2019; US EPA 2016b; Naeve 2015.
[36] Naeve 2015.
[37] *See, e.g.*, Whatcom County Extension n.d.
[38] Sow Nashville, n.d.; Metro Public Health Department 2013, 3.
[39] Sow Nashville, n.d.; Ag Extension 2019.

interviewee also stated that highly dispersed sites—along with Nashville's high car dependency—could inhibit compost collection by bicycle, which is a common method of material collection at the scale of community composting and can be cheaper, more environmentally friendly, and easier to launch than other methods of hauling.[40]

Even if an interested party is able to find a site on which to compost, they may face other problems related to the compost project's siting, according to interviewees who explained that zoning and related regulation could make it difficult to launch or operate a compost project. While NFWI review indicated that small-scale composting is permissible at community gardens in a wide range of zones, one interviewee indicated that the Metropolitan Zoning Code ("zoning code") does not "have anything that would make [composting] easy"; indeed, the zoning code does not explicitly state that small-scale composting is allowed or in what zones it is permissible. Another interviewee noted that small-scale composting is permissible in agricultural and sometimes industrial and commercial zones, and a third interviewee stated that they had never seen a community garden face zoning problems, that some community gardens are located in residential areas, and that composting would most likely be possible at a community garden in any zone. While MPHD has previously expressed support for community composting,[41] an interviewee indicated that composting projects could still run up against MPHD regulations, especially if projects are poorly managed or the subject of complaints from neighbors.

This prospect of concerns and complaints from neighbors and other community members was the last potential barrier to community composting identified by interviewees. As explained above and by interviewees, Nashville residents may be accustomed to sending their food scraps to landfills and be unfamiliar with composting. Potentially as a result of this unfamiliarity, they may perceive of compost as dirty, odorous, and/or likely to attract bugs, rodents, or other pests. Whether or not a given community composting project is well-managed, complaints from neighbors can create problems. For instance, one former community composting project in Nashville was dismantled by the state government after it was the subject of "steady" complaints.[42] An interviewee explained that it is important for communities to "choose" to be home to any composting projects, and that operators should not launch a community composting project without community consultation.

B. *Opportunities for community composting*

Interviewees suggested a number of approaches that could be used to increase community composting in Nashville. Most notably, multiple interviewees stressed that master composter or other training programs are an important first step in generating interest in a city with limited community composting and in ensuring that community composting projects are able to succeed. In addition to composter training, interviewees identified connecting community composting to existing networks, partnerships among community composting projects and local compost haulers, strategic siting of community composting projects, possible state funding, and technical support from national networks as strategies that could increase community composting in Nashville.

[40] Sloan 2018.
[41] Metro Public Health Department 2013, 18.
[42] George 2011.

Interviewees, including Platt, emphasized that master composter or other types of composter training is an essential step in launching community composting in Nashville (or any city) and could help address many of the barriers discussed above.[43] These interviewees explained that, while the specific structure can take a variety of forms depending on the needs and interests of the community (in terms of number of hours and participants, location and depth and breadth of topics covered), master composting courses are typically sponsored or supported by university agricultural extension agents, master gardener programs, local governments, or nonprofits. Courses are generally designed to "train the trainers," or train people to not only compost themselves, but to be able to lead composting projects and train others in turn. These interviewees stated that composter trainings can thus catalyze interest in community composting and composting generally, both directly (by motivating and encouraging those who come to the training) and indirectly (by including lessons on community engagement and volunteer management and thus helping those who come to the training engage others in composting). Trainings can also create a "community composting workforce" by requiring students to complete a capstone project—such as launching a composting project—as part of the course. Platt noted that master composter courses often require each person to complete their own project, but that in cities like Nashville with limited community composting, composting students might instead be able to work together to launch one or two composting projects. A composting project started as part of a composter training could be used as a demonstration project to train others and to show elected or other government officials what a well-managed compost project looks like. Interviewees also stated that composter trainings can ensure that compost projects are well-managed and thus avoid furthering (and help combat) perceptions of composting as dirty or likely to attract pests.

Interviewees also noted the importance of tying community composting efforts—including both recruitment for master composter or other trainings as well as management of established compost projects—to already existing networks such as school or student groups, scouting groups, or garden associations. Interviewees explained that master gardener programs and trainings—including and, in particular, the Master Gardeners of Davidson County (which is affiliated with UT Extension) and its master gardening course—are very popular, and that it would be much easier to get people interested and enrolled in a master composter training by offering the training through the Master Gardeners program. In some cases, qualified community partners can also help conduct training courses, building additional community capacity. In addition to the benefits of tying training to existing networks, interviewees explained that connecting active composting projects to existing networks could have benefits. Interviewees also stated that it would be easier to recruit and retain volunteers—who may be initially interested in composting, but lose interest once they have a problem or if they are the only ones spending their time managing a composting project, which can cause a composting project to fall into disrepair—if composting projects are managed by organized groups rather than by separately recruited individuals. One interviewee explained further that institutionally managed composting projects are more likely to be led by an individual with access to resources and who is accountable to the institution. Lastly, one interviewee added that providing compost education to organized groups of kids or young people would be a very effective way to cultivate interest in and awareness of composting, because kids can discuss composting and related issues with their families, in addition to participating themselves. A commenter added that providing compost education to teachers can also be beneficial because teachers often spearhead green efforts in schools and mentor and advise students in their environmental activities.

[43] A commenter added that composter training could also encourage increased home and industrial composting.

Relatedly, one interviewee suggested that partnerships between community composters and local compost haulers could ensure a reliable supply of compostable material and reduce the need for compost project managers to solicit or otherwise acquire feedstock. Even if a composting project generally has enough feedstock, having a relationship with a compost hauler could guarantee a backup source of green or brown material should one or the other be needed. This same interviewee expressed that dropping off material at a community composting project could make business sense in some cases for haulers that otherwise would haul material to the region's only commercial-scale processor. Furthermore, haulers may be able to deposit some materials at community composting projects for free or for a lesser amount than the tipping fee at the commercial processing facility. In addition, a commenter noted the value of involving stakeholders such as haulers in training events.

Interviewees also suggested several possible locations at which a community composting project could be sited. Most notably, interviewees indicated that a local public school or institute of higher education might be the best location at which to site a composting project because such a site would provide its own feedstock (e.g., food from the school's cafeteria and/or trimmings from landscaping). Also, composting could be tied into the host school's curriculum and/or the work of student environmental organizations, which would both increase the value of the project in terms of raising awareness and knowledge of composting and reduce or eliminate the need to recruit outside volunteers by providing a steady supply of labor to manage the project. One interviewee also opined that composting projects located at schools would be more likely to be properly managed because the teacher or student organization responsible for their management may be more likely to know how to compost properly, though another interviewee added that it would be important for a student-led project to have some degree of institutional involvement because students may be less engaged over the summer or during times when they are busy. A commenter also added that, as with sites managed by community volunteers, it is important that groups managing compost projects be properly trained on how to compost. Interviewees suggested that colleges or universities would make the best sites because they are active year-round and generally have the most control over their operations, and one interviewee also stated that composting projects would be more likely to succeed at high schools than at middle or elementary schools because high schools are generally more active year-round and because a sustained, ongoing composting project would be more easily integrated into a high school curriculum, which another interviewee indicated would be crucial to a project's success. A commenter agreed that a school might be the most suitable location at which to launch a community composting project, but added that it is important to ensure that such a project provide value to the school hosting it and not just to the surrounding community.

While interviewees indicated that a school might be the most suitable site for a community composting project, they also suggested other possibilities. One interviewee proposed that compostable material, including food scraps, could be dropped off at farmers' markets—four of which are located on Metro Parks land—and picked up by farmers for composting on their farms, though it is unclear whether the farmers' markets would have the staff and physical space to facilitate this. While on-farm composting is only exempt from permitting requirements if all composted materials are generated onsite, farmers accepting materials from offsite would still be exempt from permitting requirements if the amount of material composted annually is under the limits described above in Section III.B. While interviewees cautioned that composting projects at community gardens sometimes fall apart due to difficulties recruiting and retaining volunteers, they did acknowledge that community gardens are another potential site at which community composting projects could be hosted. One interviewee indicated that an institution such as a

university could operate a community garden and compost project and ensure proper maintenance and operation.

While siting a community composting project at a school or otherwise operating it through an organized group may mitigate the barrier of limited labor, prospective community composters may still lack the funding necessary to launch a composting project. To this end, one interviewee also indicated that TDEC's Organics Management Grants could be used to help spur community composting by paying for materials or by supporting a master composter training course. Organics Management Grants have been made available for Tennessee counties, municipalities, and non-profit organizations seeking to increase diversion of organic materials (especially food scraps) through reduction and education, rescue and donation, and recycling. While educational materials and equipment for composting were both eligible for 2019 grants,[44] TDEC's Materials Management Program (which administers the Organics Management Grants) is currently revising its grant program, and it is unclear what projects will be eligible when grant solicitations resume in spring 2020.[45]

Lastly, Platt proposed ILSR's Community Composter Coalition as a resource that could provide support to nascent community composting projects in Nashville. The Coalition is a nationwide network of organizations engaged in community composting, including small for-profit enterprises, community gardens, and bicycle-powered compost haulers, among others. Coalition members share experiences, best practices, and resources (such as model contracts), and ask and answer questions through a listserv. Platt and another interviewee indicated that the Coalition could help beginning community composters navigate any difficulties they encountered, particularly in a community such as Nashville where local support may not be readily available. A commenter added that, once community composting is more advanced in Nashville, a coalition of local compost trainers and compost site leaders could also be valuable.

V. Conclusion

Community composting provides social and environmental benefits that could complement Solid Waste Master Plan implementation efforts in Nashville. While a few attempts have been made to launch community composting projects in Nashville, these have been largely unsuccessful, and no such projects currently exist. Community composting in Nashville is inhibited by barriers including limited interest in and awareness of community composting, limited available resources for management of community composting projects, difficulty recruiting and retaining volunteers, insufficient knowledge about the practice of composting, limited available land on which to site compost projects, zoning and regulations, and potential conflict with neighbors. Nevertheless, NFWI identified several approaches that could encourage and facilitate community composting in Nashville, including master or other composter training, connecting community composting to existing networks, partnerships among community composting projects and local compost haulers, strategic siting of community composting projects, possible state funding, and technical support from national networks.

[44] TDEC 2019a.
[45] TDEC 2019b.

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