

Introduction

This memorandum endeavors to provide a brief summary of research completed by the Tennessee Department of Environment and Conservation (TDEC) Offices of Sustainable Practices and Policy and Planning to document current efforts in Southeastern States to address wasted food and food waste reduction **upstream of composting** and identify recommendations for opportunities for further wasted food and food waste reduction **upstream of composting** to be pursued for potential implementation in Tennessee.

The research completed provides an overview of key concepts and definitions related to wasted food and food waste reduction; describes national efforts to reduce wasted food and food waste; reviews wasted food and food waste reduction initiatives in Tennessee; details wasted food and food waste reduction efforts in other Southeastern states; and identifies opportunities for reducing wasted food and food waste in Tennessee based on research findings. However, this memo serves to summarize some of the more poignant research findings; the full research paper should be referenced for additional information.¹

Why reduce wasted food and food waste?

The prevalence of wasted food and food waste has increased in recent years as is evidenced by the following statistics. According to the U.S. Environmental Protection Agency (EPA), in 2013, 37 million tons of food waste was generated, only 5 percent of which was diverted from landfills and incinerators for composting. Food comprises approximately 21 percent of discarded municipal solid waste and is the single largest municipal solid waste stream in the U.S. The U.S. Department of Agriculture (USDA) indicated that Americans wasted over one third of the vegetables and fruit purchased in 2010.²

Reducing wasted food and food waste has a number of associated environmental, social, and financial benefits. Examples of these benefits include:

- Conservation of resources such as water, energy, land, labor, and more that are required to produce food.
- Reductions in methane emissions from landfills released by disposed food.
- Increased ability to feed undernourished populations via donation. The Food and Agriculture Organization (FAO) of the United Nations indicated that from 2012 to 2014 there were about 805 million hungry people on earth. FAO predicts that eliminating food loss and wasted food would provide enough food to feed the chronically undernourished without a need to increase food production or place additional pressure on natural resources.³
- Reduced need to increase food production.
- Reductions in food expenditures. According to USDA Secretary Tom Vilsack, "An average family of four leaves

¹ Contact Alle Crampton at Alle.Crampton@tn.gov, Tom Doherty at Tom.Doherty@tn.gov, or Kendra Abkowitz at kendra.abkowitz@tn.gov for information regarding the full research paper.

² "Sustainable Management of Food Basics." (October 3, 2016). U.S. EPA. <https://www.epa.gov/sustainable-management-food/sustainable-management-food-basics#what>.

³ "The State of Food Insecurity in the World." (2014). Food and Agriculture Organization of the United Nations. <http://www.fao.org/3/a-i4030e.pdf>.

more than two million calories, worth nearly \$1,500, uneaten each year.”⁴

- Reductions in disposal costs associated with food waste.
- Potential tax benefits received as a result of donating wasted food.⁵

EPA/USDA Food Waste Reduction Goal

At the national level, there are several initiatives ongoing to promote reduction of wasted food and food waste. One of the most prominent efforts is the current food waste reduction goal established by the EPA and USDA. In September 2015, guided by the 2013 U.S. Food Waste Challenge, EPA and USDA established a goal to reduce food loss and waste by 50 percent by the year 2030 in partnership with state, tribal, and local governments, businesses, and organizations.⁶ As part of this effort, the federal government committed to leading a new partnership with charitable organizations, faith-based organizations, the private sector and local, state and tribal governments to reduce food loss and waste in order to improve overall food security and conserve the nation’s natural resources.

Research Findings

Findings indicate that the majority of wasted food and food waste reduction efforts in Southeastern States are currently being undertaken by non-governmental groups, such as local food banks and charitable organizations,⁷ as well as local businesses and institutions of higher education. Within most Southeastern states, efforts to reduce wasted food and food waste are primarily driven at the local community level. There are very few formal wasted food and food waste efforts that are currently being led by state or local government agencies. Rather the majority of state- and local-government level efforts are focused on municipal waste reduction generally, through recycling, composting, and anaerobic digestion, but not necessarily active efforts designed to target reductions in wasted food and food waste in particular. Where state agencies are engaging in wasted food and food waste reduction, efforts are voluntary and heavily focused on stakeholder education and connecting interested parties with resources (e.g., food manufacturers or farmers with food banks). The few instances in which state agency-led programs do have any emphasis on wasted food and food waste reduction, these programs are financed and/or staffed through existing funding mechanisms. Regardless of sector or implementing entity, most frequent challenges cited by entities engaging in wasted food and food waste reduction efforts include lack of resources and infrastructure to implement robust programs.

Several Southeastern states have established state law pertaining to protection from civil or criminal liability for any adverse consequences that may arise due to the condition of donated food within the context of food donation (i.e., state level version of Good Samaritan Act) and/or tax incentives for food donation.

⁴ “USDA and EPA Join with Private Sector, Charitable Organizations to Set Nation’s First Food Waste Reduction Goals.” (Sept. 16, 2015). USDA.

http://www.usda.gov/wps/portal/usda/usdahome?contentid=2015/09/0257.xml&navid=NEWS_RELEASE&navtype=RT&parentnav=LATEST_RELEASES&edeployment_action=retrievecontent.

⁵ *Id.*

⁶ “United States 2030 Food Loss and Waste Reduction Goal.” (June 9, 2016). U.S. EPA.

<https://www.epa.gov/sustainable-management-food/united-states-2030-food-loss-and-waste-reduction-goal>.

⁷ Food recovery is deemed a cost-effective means of obtaining food sources for donation that has environmental co-benefits, however it is frequently not the driving force behind food donation efforts on behalf of these entities.

Based on the researchers' analysis of current wasted food and food waste reduction efforts in Tennessee and the Southeast, the following recommendations should be considered for implementation by TDEC. Each recommendation is briefly described and classified with regard to anticipated timeline and resources required for implementation.

a. Promotion of Existing Tools Available for Wasted Food and Food Waste Quantification (no additional resources, 1 month timeline)

TDEC could consider promoting existing tools that would help local businesses and communities engage in identification and quantification of current wasted food and food waste. EPA currently features a listing of such tools on its website, such as a food waste assessment guidebook, food waste management calculator, and more,⁸ and various other resources developed by non-governmental entities and the private sector also exist. By providing a presence for these existing tools on TDEC's website, stakeholders interested in engaging in these activities in the state of Tennessee may be better equipped to understand their opportunities for and benefits associated with food waste reduction as well as techniques for measuring wasted food and food waste reduction progress. TDEC could complete this immediately and at no cost.

b. Development of Educational and Guidance Materials Regarding Wasted Food and Food Waste Reduction (no additional resources, 6 month timeline)

Some Southeastern States have developed educational and guidance materials which identify opportunities for reducing wasted food and food waste and explain in plain English issues or factors that need to be considered by entities engaging in food waste reduction. This includes information such as: definitions of important terms; legal considerations; safety concerns; financial considerations, such as tax incentives; identification of potential partners; and communication and public outreach. Many of these guidance materials could be developed with a particular sector in mind as the target audience (e.g., food manufacturing sector, restaurant industry, hospitality industry, schools, etc.). To accomplish development of such resources, TDEC would be responsible for working with relevant stakeholders (such as the Departments of Health,⁹ Agriculture, and Revenue; restaurant and hospitality associations; businesses; local government; schools; communities; etc.) to draft guidance materials based on examples of what other states and organizations have already created and the experiences of wasted food and food waste reduction leaders throughout Tennessee, and promoting use of these materials among interested parties. TDEC would also be responsible for updating these guidance items as needed. Assuming development of these resources could be undertaken by existing Office of Sustainable Practices, Division of Solid Waste Management, and Office of Policy and Planning staff, no additional financial or manpower resources would be necessary. To fully develop comprehensive materials it would be necessary for TDEC to engage with local food banks, community service organizations, restaurants, local governments, institutions of higher education, the hospitality industry, and peer state agencies to gather and report information. Ideally, these resources would be hosted on a wasted food and food waste reduction page on TDEC's website.

⁸ "Tools for Assessing Food Waste." (April 15, 2016). U.S. EPA. <https://www.epa.gov/sustainable-management-food/tools-assessing-wasted-food>.

⁹ Feedback from stakeholders indicates that there is a significant information gap within the restaurant and hospitality industries regarding donated food and liability.

c. Development of Sample Language for Stakeholder Adoption of Wasted Food and Food Waste Reduction Goals or Policies (no additional resources required, 6 month timeline)

TDEC could consider developing a listing of sample language for stakeholder adoption of food waste reduction goals and/or policies. While at this time no southeastern state has formally adopted a comprehensive policy pertaining to wasted food and food waste reduction,¹⁰ there may be individual communities or businesses who wish to more formally recognize their efforts in this arena via adoption of a food waste reduction goal, statement, or policy. TDEC could develop sample language which could be utilized and/or customized by interested entities.

d. Hosting Wasted Food and Food Waste Reduction Workshops Focused on Efforts Upstream of Composting for Interested Stakeholders (minimal resources required, 6-12 month timeline)

Hosting wasted food and food waste reduction workshops focused on strategies upstream of composting for several different types of industries may also be an area of opportunity for TDEC. Convening stakeholders by industry or sector with a shared interest in wasted food and food waste reduction could serve as a forum for sharing best practices from entities who are already wasted food and food waste reduction leaders in Tennessee, while also identifying simple steps for entities who are just starting their food waste reduction efforts to take. This could also be a forum where stakeholders could identify actions that TDEC and/or other state or local government agencies could take to further drive wasted food and food waste reduction efforts in Tennessee. It is anticipated that these forums and their respective curricula could be planned and executed with existing TDEC staff. Funding in terms of travel as well as meeting supplies (snacks and meals) would be required. Potential funding sources include current Office of Sustainable Practices and/or Division of Solid Waste Management funds which could be dedicated towards wasted food and food waste reduction efforts.

e. Establish a Means of Recognizing Wasted Food and Food Waste Reduction Excellence (minimal resources required, 6-12 month timeline)

Recognition programs are often an effective means for incentivizing certain behavior, and could be utilized to increase diversion of wasted food and food waste. TDEC should consider opportunities it may have to establish a recognition or certification program specific to wasted food and food waste reduction. One potential option may be to add a Governor's Environmental Stewardship Award category specific for wasted food and food waste reduction efforts. This would not only encourage increased diversion, but would also provide TDEC with access to best practices implemented by stakeholders across the state. The addition of this category could be fairly easily incorporated into the Governor's Environmental Stewardship Awards framework with additional minimal resources. A second option would be to design a wasted food and food waste certification program, whereby businesses, governments, and non-governmental organizations throughout the state could embark upon a process that would maximize their ability to reduce food waste through a number of strategies, including but not limited to source reduction, donation, diversion as animal feed, and industrial uses of food byproducts. Such a program could be created with existing Office of Sustainable Practices, Division of Solid Waste Management, and Office of Policy and Planning; however long-term ownership and responsibility for implementation must be considered.

¹⁰ Independent policies have been developed pertaining to specific aspects of wasted food and food waste reduction, such as tax exemptions or donor liability.

f. Explore Opportunities for Facilitating Exchange of Excess Food Items (minimal to moderate resources required depending on implementation approach, 12-18 month timeline)

TDEC could consider serving as a resource or establishing forums that would facilitate the exchange of excess food items to community organizations with a focus on alleviating hunger. Several Southeastern states indicated that connecting organizations in need of food resources with sources of excess food was a critical support role to accomplishing wasted food and food waste reduction initiatives. Such forums or services could be established in a variety of ways. They could be informally established through provision of contact information on a regularly-updated website for entities interested in providing and/or receiving excess food and these entities could be responsible for facilitating transfer of goods among one another. If there are high demands for services, a more formal system could be established whereby entities input specific information regarding excess food available and/or into a web-based application with TDEC serving as the entity matching excess food with organizations. Conversely, TDEC could encourage entities to utilize an already-developed application such as Zero Percent to help businesses identify markets for surplus, edible food.¹¹

g. Explore Opportunities to Establish State-Specific Laws Regarding Food Donation (moderate resources required, 12-18 month timeline)

Several Southeastern states have implemented laws pertaining specifically to food donation. Research indicates that these types of laws typically focus on two aspects of food donation: (1) relief of any civil and criminal liability that would result from the condition of the food or the nature or condition of the land entered, unless an injury is caused by gross negligence, recklessness, or intentional misconduct on behalf of the donor; and (2) tax incentives (via exemption or credits) for entities engaging in donation of excess food. The former would effectively be implementation of state-specific language that mirrors the Good Samaritan Act at the federal level, and is the most widely of laws already adapted by Southeastern states. The latter could be structured in a variety of fashions, applying broadly to any entities engaging in food donation, applying only to specific types of entities, such as agricultural operations, groceries, or restaurants engaging in food donation, or applying only to entities engaging in donation of quantities of a certain threshold. Exemptions or credits could potentially be offered via business taxes, franchise and excise taxes, or sales and use taxes in Tennessee. As with the proposal of any legislation, it would be necessary for TDEC to adequately gain support and anticipate potential opposition, as well as estimate the costs and benefits associated with proposed legislation prior to proceeding.

h. Explore Opportunities for Coordinated Food Labeling within the State (moderate to significant resources required, 18-24 month timeline)

While other Southeastern states have yet to tackle the establishment of requirements for coordinated food labeling, Tennessee could opt to investigate the need for and benefits associated with doing so. To accomplish this objective, it would be necessary for TDEC to conduct extensive research regarding successful efforts in other states, as well undertake a robust stakeholder engagement process to understand how implementation of food labeling

¹¹ Zero Percent. <https://www.zeropercent.us/>.

standards would impact businesses and consumers within Tennessee. Additionally, the potential for national efforts to establish food labeling should be considered prior to initiating any state-specific actions. Any proposed legislation would have to be thoroughly informed by anticipated costs and benefits to local governments, businesses, consumers, and the state, and would have to receive support from stakeholders.

i. Develop Granting Programs for Wasted Food and Food Waste Reduction Efforts Upstream of Composting (significant resources required, 12-18 month timeline)

One of the frequently cited barriers to further adoption of wasted food and food waste reduction practices upstream of composting is lack of available infrastructure (e.g., places to store excess, consumable food as well as food waste; availability of markets for wasted food or food waste products; lack of anaerobic digestion facilities) and resources (e.g., funding to pay for training of staff with regard to sorting of organics from other waste streams or costs for transporting excess food items from one location to another; funding to pay for city investment in anaerobic digester¹²) to implement such practices. To address these concerns, TDEC could explore and eventually implement granting programs specifically designed to fund efforts to reduce wasted food and food waste upstream of composting. TDEC's Division of Solid Waste Management currently offer grants for composting and is considering opportunities to retool its composting grants to further incentivize food waste reduction. Additional expansion of this grant offering to include financing for wasted food and food waste infrastructure and resources upstream of composting presents an opportunity to broaden the impact of the granting program, while leveraging existing TDEC financial resources. Alternatively, TDEC could consider establishing a new source of funding for such a grant program, which could be supported by modifications to tipping fee structures, tax structures, or allocation of existing materials management grant funds.

Conclusion

Currently, formal policy pertaining to the topic of wasted food and food waste reduction is limited to protection of food donors from any civil or criminal liabilities that may result from the condition of donated food and provision of tax incentives for entities engaging in food donation. Beyond these available incentives, wasted food and food waste reduction efforts appear to be voluntary at this time within Tennessee and Southeastern states.

Despite being voluntary in nature, Southeastern states have a number of innovative wasted food and food waste reduction initiatives ongoing. The majority of these efforts are currently being undertaken by non-governmental groups, such as local food banks and charitable organizations, as well as local businesses and institutions of higher education. From TDEC's perspective immediate areas of potential action include development of educational resources and guidance materials to further communicate opportunities for and the benefits of wasted food and food waste reduction and identification of existing resources available to guide such efforts. A number of mid-to-long-term efforts have also been identified, including but not limited to the convening of industry workshops focusing on wasted food and food waste reduction, development of language for adoption of wasted food and food waste policies or goals, recognition of wasted food and food waste reduction excellence, excess food donation matching services, legislation incentivizing food donation, potential legislation standardizing date labeling, and development of additional grant offerings. Prior to pursuing any of these actions, TDEC must consider its availability

¹² Conversations with multiple stakeholders in the Nashville area have indicated that there is significant interest in resources available for the investment in an anaerobic digester for the city.

to implement and maintain these initiatives, support of opposition to these efforts, as well as any intended or unintended consequences of pursuing these efforts. TDEC should also consider partnership opportunities available with other state or local agencies.

This research also revealed that there are several opportunities for further investigation of topics relating to wasted food and food waste reduction. For example, while it was not the focus of this paper, many businesses have taken on food waste reduction at the international and national corporate level. Additional research needs to be completed to understand more fully if wasted food and food waste initiatives are driven more significantly at the corporate level or at the individual site level. That is, for example, are large national chains like Whole Food, Publix, Marriott, restaurants, etc. undertaking food waste driven by corporate leadership? Or, are these efforts more driven at the individual site level?

This paper also did not fully discuss state and local agencies within Tennessee with food operations that may be currently engaged in food waste reduction efforts. TDEC should conduct additional research to determine what entities such as Tennessee State Parks, the Tennessee Department of Corrections, the Tennessee Department of Health, the Department of Education and local school systems, and hospitals may be doing to reduce environmental impacts associated with food service.

It was also out of the scope of this research to engage in in-depth conversations with businesses and industries which have a desire to engage in wasted food and food waste reduction efforts regarding current unmet needs for accomplishing greater reductions and/or any challenges which arise during efforts to reduce wasted food and food waste reduction. Engaging in such in-depth conversations would allow TDEC to further identify areas of opportunity to increased assistance. This is something that could be accomplished as part of the workshop process identified in the recommendations portion of this memorandum.

Last, TDEC could conduct additional research to determine if there are any aspects of food waste reduction that are currently not being regulated at the state level that should be. Given the breadth of types of entities which could be involved in wasted food and food waste reduction efforts, there could be several sectors and state agencies involved in this conversation, such as the agricultural sector/Department of Agriculture, educational sector/Department of Education, health sector/Department of Health, and potentially others.