

Food Waste and Food Recovery
White Paper for Baltimore County
 Prepared by the Baltimore County Advisory Commission on Environmental Quality (CEQ)
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[Overview](#)

Studies show that globally 40% of food is wasted and humans waste one of every three food calories produced. The United States' contribution to the problem is more than 63 million tons per year.ⁱ

More than 850,000 tons of food are wasted each year in Maryland. Based on 2016 state population estimates, that amounts to around 282 pounds of food waste per person, per year, or more than 23 pounds per person, per month.ⁱⁱ While such numbers are alarming, they are even more significant when placed in context of social, environmental, and economic impact. See Table 1 for a summary.

People: In the United States, approximately 12% of our population lives in food insecure households.ⁱⁱⁱ Additionally, 36% of college students don't get enough to eat. In Maryland there are more than 682,000 people who don't have enough to eat – one in nine Marylanders are food insecure. Baltimore County has 11% of total population as food insecure including 14.9% of children, equating to 26,620 children.^{iv} In nearby Baltimore City hunger rate is 23.8%,^v is nearly double the national average.

Planet: In Project Drawdown's list of 100 solutions to reduce carbon impact and cost to society, reducing food waste ranked number three.^{vi} Environmental impacts include:

- 8% of greenhouse gas emissions comes from wasted food.^{vii}
- 28% of global agricultural land is to grow food that is never eaten.^{viii}
- 21% of water usage in the U.S. is used to grow and produce food we toss.^{ix}
- 70% of biodiversity loss is due to food production

Economics: Throwing away food is throwing away money! “Globally, people waste about \$1 trillion of food each year, with a total economic impact of about \$3 trillion each year if you consider the environmental and social costs of things like deforestation, soil erosion, increased greenhouse gases, water scarcity, exposure to chemicals and reduced profits for farmers...Food waste also drives up prices, reducing the number of people who can afford the healthy food they need. The average family of four throws away about \$1,500 worth of food each year. This food waste strains wallets, changes the way people buy food and can ultimately hurt the economy.”^x

Table 1. Summary of Food Waste and Insecurity Data

	Global	United States	Maryland	Baltimore County	Baltimore City
Food wasted	<ul style="list-style-type: none"> • 40% of all food • One in three calories produced is wasted 	<ul style="list-style-type: none"> • 63 million tons/year • 20 billion pounds produce never leaves the farm 	850,000 tons	No data	100,000 tons
Food insecurity	<ul style="list-style-type: none"> • 12.9% of population 	<ul style="list-style-type: none"> 12% of population 41 million 	<ul style="list-style-type: none"> • 11% of population • 682,000 people 	<ul style="list-style-type: none"> • 11% of population • 26,620 food insecure children or 14.9% 	23% of population

Solution Frameworks

Municipalities, government agencies, nonprofit organizations, private entities, and funders are all working at the intersectionality of food waste, food recovery, and food insecurity. This section provides a select set of solutions followed by a summary in Table 2.

Policy and Program Toolkit: The Natural Resources Defense Council, with support from the Rockefeller Foundation, published a policy and program toolkit for cities to address food waste.^{xi} The toolkit showcases ten strategies across categories of rethink, reduce, rescue, and recycle (see Figure 1).

Rethink Strategies: Efforts that help a city to understand the scale and nature of the problem and inform future policy and program development.

1. Estimate local baseline level of food waste
2. Assess potential to increase food rescue
3. Set short-term and long-term targets to reduce the amount of food going to waste and develop a plan for ongoing measurement
4. Lay groundwork for broader food waste prevention, food donation and recycling efforts through changes in waste system collection and financing
5. Lead by example

Reduce Strategies: Efforts that prevent food from being wasted in the first place.

6. Increase public awareness and provide concrete strategies for how households can prevent food from being wasted in the first place
7. Engage businesses and institutions to prevent food from being wasted

Rescue Strategies: Efforts that facilitate the donation of surplus, unsold food.

8. Assess and expand food rescue system capacity
9. Address policy barriers to safe donation of food

Recycle Strategies: Capturing food scraps as a resource through anaerobic digestion or composting.

10. Create and expand infrastructure for organics recycling



Figure 1
NRDC Food Waste Strategies

Food Recovery Hierarchy: The Environmental Protection Agency's (EPA) Food Recovery Hierarchy^{xii} is a guide for how organizations can reduce food waste. Each tier of the Food Recovery Hierarchy (see Figure 2) focuses on different management strategies for your wasted food. The top levels of the hierarchy are the best ways to prevent and divert wasted food because they create the most benefits for the environment, society and the economy.

- **Source Reduction:** Reduce the volume of surplus food generated. [Most preferred]
- **Feed Hungry People:** Donate extra food to food banks, soup kitchens, and shelters.
- **Feed Animals:** Divert food scraps to animal food.



Figure 2
EPA Food Recovery Hierarchy

- **Industrial Uses:** Provide waste oils for rendering and fuel conversion and food scraps for digestion to recover energy.
- **Composting:** Create a nutrient rich soil amendment.
- **Least Preferred: Landfill/Incineration:** Last resort to disposal [Least preferred]

Baltimore City’s Interagency Food Policy Initiative^{xiii}: This initiative uses food as a catalyst to address health, economic, and environmental disparities in Healthy Food Priority Areas, areas where residents face compounded challenges in accessing healthy foods. Food waste and recovery are an integral part of this effort. Categories of strategies with interest to the food recovery topic include:

- Measure and track
- Repurpose and innovate
- Embrace Technology
- Support Buy Local
- Partnerships and Animals/Farmers
- Convert to energy (grease recycling)
- Experimentation & Diversion
- Lead the Way/Spread the Word

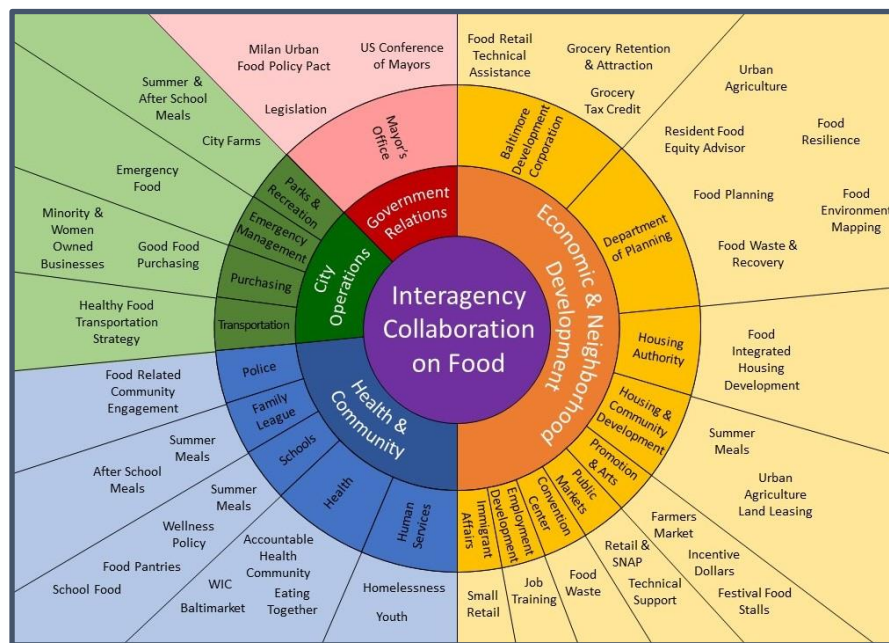


Figure 3
Baltimore City Interagency Collaboration on Food

Table 2. Summary of Solutions, Strategies, and Resources

United States	Maryland	Montgomery County	Baltimore County	Baltimore City
<ul style="list-style-type: none"> • EPA Food Recovery Hierarchy • NRDC – Save the Food • Feeding America • Food Recovery Network • MEANS • Hungry Harvest 	<ul style="list-style-type: none"> • Food Recovery Summits (2016, 2018) • MDE Organics Diversion and Composting • Maryland Food Bank • Middle Mile 	<ul style="list-style-type: none"> • Strategic Plan to Advance Composting, Compost Use, and Food Scraps (2018) • County Council Bill 28-16 Strategic Plan to Advance Composting, Compost Use, and Food Waste Diversion (2016) • Food Security Plan 	<ul style="list-style-type: none"> • Food Policy Task Force established by Bill 9-16, met from September 2016 to 2018 and then stopped meeting. 	<ul style="list-style-type: none"> • Baltimore Food Policy Initiative • Baltimore Food Policy Action Committee • UEmpower MD – Food Project • Farm Alliance of Baltimore

CEQ Recommendations for Baltimore County

The CEQ strongly recommends that Baltimore County develop and implement a plan to reduce food waste, increase food recovery, and decrease food insecurity. Below are the CEQ recommendations.

Short Term:

1. **Establish a Baltimore County Interagency Food Policy Commission** that will bring multiple perspectives to food system solutions in the County. Include the Department of Planning, Department of Health, the Baltimore County Sustainability Officer, Department of Public Works, among others. Use the NRDC Toolkit and the Baltimore City Food Policy Initiative as templates.^{xiv}
2. **Collaborate with surrounding jurisdictions** to share resources and build infrastructure about food waste, food recovery, and food insecurity. For example, work with Baltimore City office of Sustainability, Montgomery County Food Council,^{xv} and the State of Maryland^{xvi}. Join with Baltimore City's Food Waste and Recovery work group.^{xvii} This will increase the efficiency of the County's efforts to reduce food waste and increase food recovery.
3. **Reduce food waste by "Leading by Example."** Demonstrate best practices at County-run events: measure food waste; prevent wasted food; donate surplus food; and compost the rest.

Long Term:

4. **Rethink current operations by establishing baselines of data** to define, measure, and track food access and security, food waste, and food recovery in the County. Establish measurable goals.
5. **Organize by engaging County businesses and institutions** to reach County-wide goals to recover, collect, and redirect food waste. Convene them regularly to coordinate efforts and measure progress.
6. **Educate for public awareness** in the County about food access, food waste, and food recovery.
7. **Decrease policy barriers** to reducing food waste and redistributing food in the County.

Some Observations Informed by COVID-19:

Farmers and Growers need assistance to reduce food waste. Here's why:

1. Most produce has a harvest window of opportunity within five to seven days or the quality of the product will be lessened. The quality determines the pricing of the product and the pricing determines the difference between profit and loss to the producer. Farmers need to get produce to market in a timely fashion.
2. When processing plants close because of employees having COVID-19, a link in the distribution chain is broken. For example, broiler chickens take about nine weeks to grow, they eat about ten pounds of feed and will weight around 4.5 pounds when ready for processing. When there is a disruption to the normal flow in hatching to marketing, this causes a need for hatching eggs and young chick numbers to be reduced, causing a loss for producers.
3. Cattle farmers and meat packers have been experiencing an added marketing problem since high end restaurants which sell the good high-quality meat cuts, are closed. Producers need assistance in getting product to market.

Endnotes

- ⁱ ReFED (2016). A Roadmap to Reduce U.S. Food Waste By 20 Percent. (retrieved from <https://www.refed.com/download>)
- ⁱⁱ Polasky, Jeanette G. (2017). Taking a Bite Out of Food Waste. Baltimore County Department of Public Works. (retrieved from <https://www.baltimorecountymd.gov/News/BaltimoreCountyNow/taking-a-bite-out-of-food-waste>)
- ⁱⁱⁱ United States Department of Agriculture, Economic Research Service (2018). Household Food Security in the United States in 2017. (retrieved from <https://www.ers.usda.gov/webdocs/publications/90023/err-256.pdf?v=0>)
- ^{iv} Feeding America. Childhood Food Insecurity in Baltimore County. (retrieved from <https://map.feedingamerica.org/county/2017/child/maryland/county/baltimore>)
- ^v Baltimore Office of Sustainability (2018). Baltimore Food Waste & Recovery Strategy. (retrieved from <https://www.baltimoresustainability.org/baltimore-food-waste-recovery-strategy/>)
- ^{vi} Project Drawdown (2018). 100 Solutions to Reverse Global Warming. (retrieved from <https://www.drawdown.org/solutions>)
- ^{vii} World Wildlife Fund (2019). Fight Climate Change by Preventing Food Waste. (retrieved from <https://www.worldwildlife.org/stories/fight-climate-change-by-preventing-food-waste>)
- ^{viii} Food and Agricultural Organization (2013). Food Wastage Footprints: Impacts on Natural Resources. (retrieved from <http://www.fao.org/3/i33347e/i3347e.pdf>)
- ^{ix} ReFED (2016). A Roadmap to Reduce U.S. Food Waste By 20 Percent. (retrieved from <https://www.refed.com/download>)
- ^x Teshome, M. (2017). How Food Waste Hurts the Economy – And How You Can Help. (retrieved from <https://www.3blmedia.com/News/How-Food-Waste-Hurts-Economy-And-How-You-Can-Help>)
- ^{xi} Mugica, Y. and Rose, T. (2019). Tackling Food Waste in Cities: A Policy and Program Toolkit. Natural Resources Defense Council. (retrieved from <https://www.nrdc.org/resources/tackling-food-waste-cities-policy-and-program-toolkit>)
- ^{xii} Environmental Protection Agency (nd). Food Recovery Hierarchy. (retrieved from <https://www.epa.gov/sustainable-management-food/food-recovery-hierarchy>)
- ^{xiii} See: <https://planning.baltimorecity.gov/baltimore-food-policy-initiative>
- ^{xiv} See: <https://planning.baltimorecity.gov/sites/default/files/BFPI%20Org%20Structure%202019%207.0.pdf>
- ^{xv} See: <https://mocofoodcouncil.org/>
- ^{xvi} See: <https://mde.maryland.gov/programs/LAND/RecyclingandOperationsprogram/Documents/Maryland%20Food%20Recovery%20Summit%20-%20Summary.pdf>
- ^{xvii} See: https://www.baltimoresustainability.org/wp-content/uploads/2018/09/BaltimoreFoodWasteRecoveryStrategy_Sept2018_FINAL.pdf)