

Food (Waste) Interventions Options

Prepared for City of Boulder

This document is to be used by City of Boulder employees to help determine effective strategies and interventions to minimize the abundance of wasted food throughout the city. There are many independent factors that influence food supply, surplus, and waste. The City of Boulder can influence and reduce food waste by implementing the following interventions in order to create system-wide changes. These interventions paired with other food waste interventions – such as, reduction, donation, and recycling – are discussed throughout this document.

Intervention Summaries

The following are the summaries of the food surplus and waste interventions elaborated upon in this document.

Framing and Reframing: the term and framing of “food waste” might not be useful in creating effective solutions to the issue. The city could investigate different metaphors and narratives that could better lead towards collective action and understanding among the populace. Successfully framing food waste will likely cause the people of Boulder to have more passion about the subject and support other initiatives put forward.

Alternative Markets & De-commodifying Food: Many farmers are stuck in market systems that require them to overproduce food to stay in business. The city could continue improving its alternative markets, enabling sustainable local production, and de-commodifying food. Targeting food waste from the source will prove to have a much greater impact than solely reducing waste once it has reached the consumer.

Coalition Building: A coalition around reducing the amount of surplus and wasted food could be highly effective in creating collaborative visions, goals and strategies. The city could catalyze the creation of such a coalition. Increasing the amount of awareness around food waste by creating visions, goals, and strategies will make it easier to decipher and locate the most effective levers to target.

Reduction: Every actor in the supply chain has surplus/excess food that will end up wasted. The city could increase awareness of the issue, distribute information, and create initiatives that reduces this surplus. Assuming other interventions have been put into place (such as coalition building and reframing of the issue) this will be fairly easy for the City to engage and roll-out concurrently.

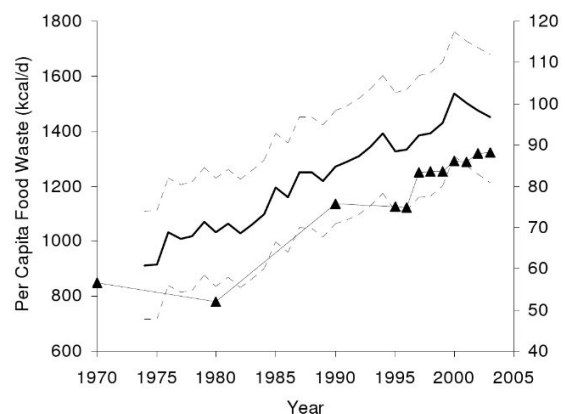
Redistribution: There are excess, edible foods that can be used to feed people that require infrastructure and support for redistribution. The city could invest in improving infrastructure and supporting organizations to redistribute food. The City should engage in improving infrastructure because it will not only lead to better access to food for low-income communities, but also improve allow the City to build more energy-efficient structures and positively impact the community in ways outside of food waste prevention.

Recycling: There will always be unavoidable food waste. The city could continue improving upon its current initiatives and ordinances to improve the effectiveness of its food waste recycling. The City of Boulder is continually referenced as a leader in composting requirements -- by improving the efficiency and making it easier for everyone to participate they will continue to be a model for other forward-thinking cities throughout the world.

Introduction

The term “food waste” has [variable meanings](#). For example, the USDA counts food waste as edible foods that weren’t eaten by humans, whereas the EPA considers food waste as both inedible and edible parts that are composted, combusted, or landfilled. Using different definitions, the USDA and the EPA estimate different volumes of food waste – 66.5 million tons and 38.4 million tons, respectively. In response to the varying definitions and uses of the term “food waste” the World Resources Institution created a [Food Loss and Waste Protocol](#) that assists in standardizing communication and measurement of food waste and loss. In order to make the City of Boulder’s work translatable, we recommend that any measurement and reporting around food waste should use the Food Loss and Waste Protocol. Throughout this document, the term “food waste” will refer to edible and inedible food not eaten by humans, “food surplus” will refer to still edible food in excess of the intended use, and “food scraps” will refer to the edible and inedible parts of food that are used for non-human purposes such as feed for animals or composting.

[In 2010 the Economic Research Service](#) of the USDA estimated that there were 3,796 calories available per American per day. They estimated that 1,249 of these calories were wasted and 2,547 were consumed. The number of calories being produced and imported into the United States has been increasing for decades, and food surplus and waste have subsequently followed. The following two images from the influential paper [“The Progressive Increase of Food Waste in America and Its Environmental Impact”](#) show the trend in increasing food availability and waste.



Due to many reasons, including the consolidation of agricultural input and processing corporations, consolidation of farms, new technologies, and policy, our current global and national food systems are oriented towards systemic food overproduction. If the city wishes to reduce its overall food waste, it would have to reduce its food surplus, the amount of food coming in over what it intends to use. Since there are so many independent actors influencing the supply of food in the city, it would be very difficult for the city to directly alter the food supply and surplus. However, municipalities can do their part in reducing “food waste.” Interventions that create system-wide changes include reframing the issue, coalition building, and de-commodifying food. These interventions along with more common food waste-related interventions – reduction, donation, and recycling – will be expanded upon in the next section.

When it comes to food waste interventions, one size doesn't fit all. Different communities, organizations, and businesses generate and divert food surplus and wastes for different reasons and with different results. For examples, [one study](#) states “studies have consistently found that the food discard ratio of small generators (e.g., convenience stores) is much higher than generators in supermarkets, mostly due to their limited flows.” Restaurants, convenience stores, hospitals, schools, business cafeterias, coffee shops, grocery stores, movie theaters, stadiums, food pantries and all the other distributors of food are operating within different systems motivated by various incentive structures. Some interventions work better with certain types of businesses and organizations than others. Continuous experiments/pilots and adjustments are necessary to progressively decrease food surplus and waste.

This document is informed greatly by a review of the current literature on food surplus, waste, communications, and commodification. As much as possible, sources and extra information are hyperlinked for a deeper look.

Framing and Reframing

Summary: the term and framing of “food waste” might not be useful in creating effective solutions to the issue. The city should investigate different metaphors and narratives that could better lead towards collective action and understanding.

The term “food waste” [evokes the image](#) of rotten, unusable food. However, it is often used to describe good foods that just weren’t eaten. “Food waste” creates a set of associations with certain problems and solutions. “Waste” creates a sense of something that needs disposed of and dealt with instead of something to be utilized. Other terms such as “food surplus,” the EPA’s “sustainable materials management,” or even “wasted food” change the perceived nature of the food and the associated problems and solutions.

Furthermore, in the current framing of the issue of food waste, consumer responsibility, education, and action are often emphasized. We see [messages](#) like “Food is being wasted at an alarming rate. And we - consumers - are the largest source of it...we can do something about it. Everything we need is right here (and in our fridges).” However, survey [findings](#) show that nearly 75% of people believe they waste less than the average consumer. If people believe they waste less, they may find consumer-related communications and campaigns irrelevant. Furthermore, this messaging often ignores the systemic and structural causes behind consumer food waste such as the [progressive loss of culinary skill](#) due to the stresses of modern living.

The [FrameWorks Institute](#), a non-profit dedicated to finding messaging that will help solve social issues finds that (emphasis my own):

Framing research on a host of issues, from health care to day care, confirms that when social problems are framed in ways that appeal to people as consumers of information and products *the public dimensions of the problem are obscured*. Perhaps nowhere is this more evident than in how Americans think about food. For most Americans, food is a commodity and their interaction with it begins at the point of purchase

Reframing the issue of “food waste” to another story or metaphor might help create a community understanding that will allow for systemic improvements in the city’s relationship with food. Reframing could take away the impulse to consider the issue from the individual or consumer point of view.

Overall, the FrameWorks institute found that the framing food systems problems as the “Runaway Food System” was the most effective frame for creating a mindset for systemic change and collective action. The following is their example of how the [Runaway Food System](#) could be communicated:

Experts are increasingly concerned about what they call our Runaway Food System. The way we produce food today has radically changed, and now has the power to alter the foundations of life as we know it almost by accident. Farming chemicals like pesticides

and weed-killer are permanently altering our soil and water. Genetic engineering is changing the nature of the plants and animals we eat. And mile-long fishing nets are dragging the ocean floor and altering ecosystems. America needs to retake control of this runaway food system before it does more damage to the foundations we depend on

The message does not place blame but emphasizes a system that needs increased oversight and management to flourish. The examples in the middle can be altered to reflect the issues more relevant to the city. Such as – food overproduction results in nearly twice as many calories as we could eat and this food is inevitably thrown out – combined with some of the other statements could bring food surplus and waste into the conversation.

Other important framing considerations include:

- Putting progress on the side of food system reform
- Attribute collective responsibility and explain why inaction is not an option
- Start with a value. Legacy (thinking about the next generation) and Protection (ensuring our current health for example) are strong values in food systems work.
- Any facts must help the shift from consumer to systems-thinking
- Do not assume people know the causal links. Give them an A to B to C explanation to make sure they understand the connection between A and C.

There are many ways to reframe the issue of food waste. The City of Boulder should determine the frames that resonate with its citizens and create a willingness to support and create systemic change. The frames could just include the issue of food waste, or they can encapsulate related issues such as food choice, food security, food justice, and the viability of farming to name a few. The following are a few frames the city could investigate and use within the larger runaway food system narrative:

- Food surplus – There is too much food coming into the city and all of it cannot be consumed, so it is thrown out. Food surplus results from incentive structures and pressures that result in overproduction throughout the supply chain.
- [Sustainable Materials Management](#) – “Sustainable materials management (SMM) is a systemic approach to using and reusing materials more productively over their entire life cycles. It represents a change in how our society thinks about the use of natural resources and environmental protection. By looking at a product's entire life cycle, we can find new opportunities to reduce environmental impacts, conserve resources and reduce costs.”
- (Un)Sustainable Consumption – Improving the efficiency of consumption. For example, reducing food waste or reducing the amount of inputs that went into food that was wasted.
 - More [radical \(un\)sustainable consumption](#) - “a sustainable consumption approach focusing on the question of appropriate levels and patterns of consumption, paying attention to the social dimension of well-being, and assessing the need for changes based on a risk-averse perspective”
- [Circular Economy](#) – Food and waste (including human and animal waste) are resources that have important nutrients for humans, animals, and soils. At any point in their cycles

they can be used to the advantage of the cycle. Nothing is “waste” in this frame and everything is “resource.”

- Public Health and Food Choice – some foods (junk foods, sodas) and overconsumption of any foods are inherently detrimental to health. Furthermore, many of the foods that are produced and not consumed are highly healthful foods (fruits, vegetables, fish). If we stop inherently detrimental and possibly wasteful foods from displacing perishable food consumption we could improve both the issues of public health and “food waste.”

Reframing the issue of “food waste” to one of these or others and incorporating within an understanding of a Runaway Food system will work to change public perception, create new problems and solutions, and build a new route for systemic change that will improve the city’s relationship with food and food waste.

Alternative Markets & De-commodifying Food

Summary: Many farmers are stuck in market systems that require them to overproduce food to stay in business. The city should continue improving its alternative markets, enabling sustainable local production, and de-commodifying food.

Unfortunately, our current global and national food systems and food policies are oriented towards [systemic food overproduction](#). Many farmers are locked into selling to undifferentiated commodity markets where producing more is the only way to maintain cash flow. Those that don't succeed in producing more go bankrupt and [consolidation ensues](#). They are also stuck on a [technology treadmill](#) where they adopt new technologies, total yields rise, prices go down and they need to buy newer, better technologies. Throughout this cycle the amount of food created rises and the prices drop. Now we have [nearly 4000 calories](#) available per person per day in the United States.

The processes of commodification, turning foods into economic goods that are interchangeable with other commodities of the same type, and standardization of food, require foods to meet rigid specifications, are both reinforced by and reinforce these production cycles of concentration and overproduction. Food commodity markets are also [more volatile](#) than ever, due to a large number of interrelated global factors. This volatility is harmful to both farmers and the food insecure as neither group can plan for these price fluctuations as they become stronger and more unpredictable.

In order to enable farmers to break the bonds of undifferentiated commodity markets, alternative markets and/or the de-commodification of food must occur. Alternative markets are markets separate from the globalized commodity markets that often have shorter supply chains and often create incentives for improved production practices, food safety practices, environmental stewardship through greater accountability. The FAO published [insights and findings](#) regarding alternative, innovative markets. The abstract of the publication includes the following possibilities (emphasis my own):

Specifically, private sector and civil society actors are leading partnerships with the public sector to build market infrastructure, integrate sustainable agriculture into private and public education and extension programmes, and ensure the exchange of transparent information about market opportunities. The results are: (i) system innovations that allow new rules for marketing and assuring the sustainable qualities of products; (ii) new forms of organization that permit actors to play multiple roles in the food system (e.g. farmer and auditor, farmer and researcher, consumer and auditor, consumer and intermediary); ***(iii) new forms of market exchange, such as box schemes, university kiosks, public procurement or systems of seed exchanges;*** and (iv) new technologies for sustainable agriculture (e.g. effective micro-organisms, biopesticides and soil analysis techniques). ***The public sector plays a key role in providing legitimate political and physical spaces for multiple actors to jointly create and share sustainable agricultural knowledge, practices and products.***

The City of Boulder already does a lot to [support local agriculture](#), which is probably already very beneficial to the farmers that participate. The more the city can expand these markets; ensure the exchange of transparent information about sustainable agriculture practices, market opportunities, and community opportunities; help build public infrastructure for the cleaning and processing of local foods; and help build public exchanges for information, practices, technology, infrastructure, and seeds, the more strongly more farmers can escape the perils of undifferentiated commodity markets.

Furthermore, commodity markets are associated with commodity prices. As supplies in the market fluctuate, the prices of the commodities fluctuate. In our current system, food crops go towards the use that provides the producer and processors the best price. Some foods have many different pathways – food for humans, food for animals, bio-fuels, and not going to any use at all. Though food for humans might be the moral choice, it is often not the chosen path, as seen with the massive amounts of food grown for biofuels and the massive amounts of food that is never used at all (termed food waste) in the presence of 1 in 8 Americans food insecure. If food is “de-commodified” price wouldn’t be the only determination of its use. This is often communicated as turning [food into commons](#) instead of commodities.

Methods to de-commodify food include differentiating it, creating guaranteed universal access to food, and paying farmers consistently for their harvest.

Food differentiation makes it so food is no longer standard and thus no longer an undifferentiated commodity. It takes on other, societally important aspects and is allowed to have characteristics independent from those required in commodity markets. Methods of food differentiation include:

- Local food (vs generic food)
- Heirloom/non-standard varieties (vs standard varieties)
- Having aspects of taste, culture, society, community, recipes, seasonality (vs generic foods)

Paying farmers, no matter their harvest level allows farmers to escape the difficult value fluctuations and general trends towards lower per unit prices. Farmers can focus on sustainable agriculture methods that are important to them and don’t have to overproduce. Methods of paying farmers no matter their harvest include:

- Community Shared Agriculture (CSA)
- Paying a farm for their full harvest
- Paying a farm a salary for their full harvest

Commodity markets [perpetuate food insecurity](#) through putting foods towards the most profitable uses. However, food is a human right and should be made into a commons. Methods of creating guaranteed universal access to food include:

- Providing money/credit to access food to everyone
- Providing food (ideally local) to everyone

It is important to do this work [because](#):

The recognition that modern food systems are ripe with market failures should not, thus, lead to the conclusion that markets should not be used (or that they should be abolished). The presence of market failures only suggests that it is foolish to trust the invisible hand of markets to govern our societies. Intelligent policy can use markets as tools for improving social efficiency.

Coalition Building

Summary: A coalition around reducing the amount of surplus and wasted food could be highly effective in creating collaborative visions, goals and strategies. The city should catalyze the creation of such a coalition.

Though there are systems at play that are beyond the current reach of the City of Boulder. There are wasteful systems within the city that can and should be tackled. Every actor in the food chain from farmers and distributors to restaurants and communities are not fully utilizing good food. The Boulder food community can come together and make real change within the city. The city can step up and catalyze the creation of this coalition and become a member of the mature group. Since all stakeholders create food surplus and waste, representatives from many groups and backgrounds should be involved including:

- Grocery Stores
- Convenience Stores
- Consumer Groups
- Schools
- Caterers
- Food Access Organizations
- Farmers
- Hotels
- Distributors
- Food Manufacturers and Brands
- Food Rescue and Gleaning Organizations
- The Public

The coalition must work to first create a shared vision of the problem and a shared vision of the ideal situation – the goal. Together it will collaboratively develop plans and strategies to reach its goals. The goals must be specific but allow for flexibility within each sector. Because there might be competitors within the coalition, collaboration and opportunity must be stressed.

One option for the coalition could be reframing the Boulder County Food Waste Subcommittee. The subcommittee is established and has representatives from the government and food access organizations. It periodically also has people from food waste generating organization. Using the existing infrastructure of the subcommittee, the City of Boulder could collaborate to expand its members and mission.

Other interventions that could have similar collaborative, information sharing, shared vision-esque results include creating forums or roundtables for organizations to collaborate.

Reduction

Summary: Every actor in the supply chain has surplus/excess food that will end up wasted. The city could increase awareness of the issue, distribute information, and create initiatives that reduces this surplus.

Food waste reduction involves reducing the amount of food surplus in the first place so that less food becomes food waste. Reduction interventions vary along the supply chain and the following is a list of the common reduction techniques for each link.

Production/Farming

- Improved market and weather forecasting technology to improve planting decisions
- Improved access to farm workers so that all foods can be harvested
- Contracts negotiated that decrease the pressure on farmers to overproduce

Distribution/Transportation

- Tracking technologies that improve food environment and deterioration awareness and allow for more efficient marketing.

Food Retail/Grocery

- Tracking and forecasting technologies that improve inventory management
- Work with farmers and suppliers to share information and improve decision-making throughout the supply chain.
- Change contracts to allow other actors the freedom to choose production levels
- Using foods that are less saleable in prepared food sections
- Markdown bins for reduced price less saleable foods

Restaurants/Caterers/School Meals/Food Service

- Tracking and forecasting technologies (LeanPath, Phood, etc) that improve inventory management.
- Staff and chef training on using all parts of foods
- Smaller portion sizes/smaller plates
- Customizable portion sizes

Consumers/Individuals

- Consumer education/awareness campaigns such as [Save the Food](#).
 - Include education on meal planning, list making, food storage techniques, and the general issue of food waste.
- Documentaries such as Wasted and Just Eat It.
- Dumpster diving and freeganism

Examples of where cities assist with food reduction initiatives include:

- Paying for or subsidizing the use of LeanPath or other food accounting systems
- Disseminating kitchen best practices through technical assistance, webinars, and websites for food service to reduce pre-consumer food surplus

- Integrate food waste prevention practices into food service training
- Performing or subsidizing waste audits to increase awareness of wasted food.
 - Or [help businesses](#) learn how to measure their food waste through audits or technology.
 - Or create a standardized food waste assessment performed by the city or a contractor for businesses to understand the amounts and types of wastes they create
- Working with haulers to measure the amount of waste coming from participants and informing them.
- Hosting a [food waste challenge](#) to gain qualitative and quantitative data on the level of food waste across sectors.
- Hosting a [food waste challenge](#) (different link) among food service organizations and recognize those participating.
- Implementing [pay as you throw](#) disposal program
- Including a food excess and waste plan in the business licensing process
- Run consumer campaigns that address the systemic causes of consumer food waste (ex. busy schedules and stress that do not allow time for perfect planning or meal preparation)
- Create a forum where food-waste generators and food access organizations can gather and generate system-wide interventions
- develop “[standardized and consistent](#) metrics... essential for understanding and scaling work within and between sectors, for measuring progress towards goals or fluctuations in the system, and for identifying priorities”
 - Like the [Food Loss and Waste Protocol](#)

Redistribution

Summary: There are excess, edible foods that can be used to feed people that require infrastructure and support for redistribution. The city could invest in improving infrastructure and supporting organizations to redistribute food.

The redistribution of edible surplus foods is most often performed through food donation. Food donations come from farmers, distributors, grocery stores and food service. Food donors are protected from liability by the Bill Emerson Good Samaritan Food Donation Act as long as they donate to a non-profit that feeds “needy individuals” in good faith. Other forms of food redistribution include food sharing (ex among neighbors), [community fridges](#), and even alternative markets made by organizations such as [Imperfect Produce](#) that sell “ugly” produce.

In the City of Boulder, Community Food Share and Boulder Food Rescue serve as food redistributors. Community Food Share is a Feeding America associated food bank and is able to collect and distribute large quantities of food. Boulder Food Rescue is a local food rescue that can collect and distribute smaller amounts of more perishable foods. They both primarily work with grocery stores in the area. The City of Boulder already does a lot to support these organizations through funding from the sugar sweetened beverage tax.

Examples of where cities can assist with food redistribution initiatives include:

- Creating and upkeeping [community refrigerators](#)
- Enable health inspectors or the health department to educate restaurants and grocery stores about safe, liability free food donation.
- Providing support to food access organizations to increase food collection and storage capacity.
- Creating a “how” and “what” guide for businesses to know how and what to donate
- Creating and upkeeping refrigerated donation hubs for restaurant food donations.
- Subsidizing the use of food redistribution services (currently the City of Boulder is in the process of doing this with the JCC and Copia)
- Establish a [food diversion roundtable](#) where businesses can share best practices

The following is a quote from the article [Commercial and Anti-Hunger Views on Local Government Strategies for Helping to Manage Food Waste](#):

Anti-hunger agencies had specific ideas for how local government and public agencies could support them to help address challenges in the system. These included outreach, policy approaches, grant funding, and drawing attention to the changing needs of the food-insecure. All anti-hunger agencies requested that the City help increase food donation via public outreach or policy approaches. Suggested strategies included implementing donor education about how and what to donate and Good Samaritan Laws; establishing stronger and better-defined regulations for the commercial sector to donate food; and utilizing City partnerships to create connections with non-traditional donors such as schools. Anti-hunger agencies also felt that grant funding from the City for infrastructure costs or negotiating reduced rates for some of the hidden costs of the

system, such as compost bills and transportation fees (e.g., driver wages, fuel, and vehicle insurance), would allow them to put their focus on providing healthy food to clients.

Recycling

Summary: Every actor in the supply chain has surplus/excess food that will end up wasted. The city could increase awareness of the issue, distribute information, and create initiatives that reduces this surplus.

Food waste recycling involves getting the nutrients from food back into useful cycles. Common forms of food recycling include feeding food scraps to animals, composting, and anaerobic digestion (food to energy and fertilizer). The vast amount of resources that go into food production cannot be completely recaptured in food recycling, so it is the last, but still highly important, resort for food use. Recycling is almost always better than landfilling unless the resources used in the process of recycling are greater than the benefits it creates (this can happen if the food processing before recycling is energy intensive or the food must be shipped much larger distances than those to the landfill).

The City of Boulder has already taken great steps towards supporting its food recycling through the Universal Zero Waste Ordinance. The main improvements here will be the progressive increase of the proportion of food scraps being recycled and the decrease in contamination that can reduce the quality of the compost, digestate, or animal feed. The city could also work with the county to implement a more local composting facility so fewer resources are used in food scrap transportation. Finally, the city could further collaborate with local food waste generators (restaurants and grocery stores) and farmers to create flows of useful foods towards farmers and their animals.

It must be noted that some [research](#) has found that composting makes people feel less guilty about disposing of food and can counteract information given about the negative impacts of food surplus and waste. [Here](#) is a good article on this topic. However, [the NRDC found](#) that of the food waste, 30-40% of that wasted food is inedible or questionably edible (parts of the food that would never be eaten in the first place like banana peels). Thus, there is definite need for food waste recycling as there will always be unavoidable food waste.

Recommendations

The following table [from the EPA](#) shows that reducing the amount of wasted food by a ton reduced CO₂ emissions by 3.66 tons, compared to 0.18 tons for composting.

Exhibit 1-10: Net Emissions for Food Waste and Mixed Organics under Each Materials Management Option (MTCO₂E/Short Ton)

Material	Net Source Reduction Emissions	Net Recycling Emissions	Net Composting Emissions	Net Combustion Emissions	Net Landfilling Emissions	Net Anaerobic Digestion Emissions ^a
Food Waste	-3.66	NA	-0.18	-0.14	0.54	-0.05
Food Waste (non-meat)	-0.76	NA	-0.18	-0.14	0.54	-0.05
Food Waste (meat only)	-15.10	NA	-0.18	-0.14	0.54	-0.05
Beef	-30.05	NA	-0.18	-0.14	0.54	-0.05
Poultry	-2.47	NA	-0.18	-0.14	0.54	-0.05
Grains	-0.62	NA	-0.18	-0.14	0.54	-0.05
Bread	-0.67	NA	-0.18	-0.14	0.54	-0.05
Fruits and Vegetables	-0.44	NA	-0.18	-0.14	0.54	-0.05
Dairy Products	-1.74	NA	-0.18	-0.14	0.54	-0.05
Mixed Organics	NA	NA	-0.16	-0.16	0.20	-0.07

Note: Negative values denote net GHG emission reductions or carbon storage from a materials management practice.

NA = Not applicable.

^a Emission factors for dry digestion with curing of digestate before land application

The most effective measures to reduce CO₂ emissions will be reducing food surplus, then reducing food waste, then recycling and finally composting.

We recommend the following prioritization of food surplus and waste action:

1. Reframing - this can have wide-ranging benefits for a low cost.
2. Interconnecting efforts
 - a. Parts of the city and county are working on empowering local agriculture. Back these efforts knowing food surplus will be beneficially reduced.
 - b. The County has the Food Waste Subcommittee. Use this group to build a coalition while also reframing the issue.
 - c. Businesses are already working to reduce their food waste due to the economic incentives, further enable them to know their waste levels through audits and subsidizing measurement technology such as LeanPath.
3. Finally Reduction over reuse/recovery over recycling/composting