Compost Up, Downtown
BEAD Restaurant Composting Incentive Program

EarthKeepers
Bloomington Compost

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March 15th, 2023 **Final Report** EarthKeepers

In 2021, the City of Bloomington was given funding through the American Rescue Plan Act, a portion of which was allocated by the City for economic recovery initiatives that could dovetail with sustainable development goals. Per the City's goals of revitalizing COVID-affected downtown businesses and implementing public actions in response to the Climate Crisis, the City of Bloomington's Economic and Sustainable Development Department reached out to EarthKeepers about partnering on a project to serve these and related ends. In meetings between the City's former Assistant Director of Sustainability, Lauren Clemens, and EarthKeepers leadership, the contours of the collaboration took shape around the economic development case for downtown restaurants to consider food-waste reduction through the provision of composting services and related commercial-kitchen consulting.

Derived from leading climate science, food systems, and waste management research results, the *Compost Up, Downtown* program was launched as a proof-of-concept pilot intended to sense market interest, perceived barriers, operational barriers, price-sensitivity, and trainability, around composting services for local commercial kitchens. Restaurants located within the Bloomington Entertainment and Arts District (BEAD) constituted the pool of potential applicants from which up to 16 would be accepted, on a quarterly basis for 1 year, to take part in the program. Participation in the program involved a 3-month commitment to a free trial of commercial composting services, including mandatory administrative consultation, staff training, and waste auditing, with such services valued at approximately $5,000 per restaurant.

The program succeeded in attracting and administering services to all 16 expected participants; however, significant financial, operational, and behavioral barriers emerged that resonate with findings in waste management research and reportings in public news media. Bloomington's "Culture of Composting" is currently underdeveloped, requiring significant educational outreach and institutional investment if a long-term, community-scale organic waste processing apparatus is to avoid pitfalls experienced in similar communities and parallel recycling systems.

Background:

Project Drawdown, a flagship coalition of climate scientists, has consistently ranked “Reducing Food Waste” as the #1 most impactful measure that any business, government, individual, or nonprofit can take to fight climate change, highlighting the environmentally protective significance of any food waste management project undertaken at scale (Drawdown 2022).

PROJECT DRAWDOWN

https://www.drawdown.org/

Reducing Food Waste is the #1 Action that any Company, Government, or Individual can take to fight climate change, according to climate science.

* Gigatons CO2 Equivalent Reduced / Sequestered (2020–2050)

SOLUTION	SECTOR(S)	SCENARIO 1 *	SCENARIO 2 *
Reduced Food Waste	Food, Agriculture, and Land Use / Land Sinks	87.45	94.56
Health and Education	Health and Education	85.42	85.42
Plant-Rich Diets	Food, Agriculture, and Land Use / Land Sinks	65.01	91.72
Refrigerant Management	Industry / Buildings	57.75	57.75
Tropical Forest Restoration	Land Sinks	54.45	85.14
Onshore Wind Turbines	Electricity	47.21	147.72
Alternative Refrigerants	Industry / Buildings	43.53	50.53
Utility-Scale Solar Photovoltaics	Electricity	42.32	119.13
Improved Clean Cookstoves	Buildings	31.34	72.65
Distributed Solar Photovoltaics	Electricity	27.98	68.64

[Image: Project Drawdown 2022]

Further, ReFED – the nation’s leading research conglomerate studying the logistics, econometrics, and impact of food waste – has generated research reports demonstrating that commercial kitchens can save up to 6% on their operating costs just by starting to monitor their production of food waste, highlighting a clear case for sector-wide economic development through resource conservation: ReFED estimates that organic waste tracking in the Foodservice Sector of Indiana, alone, could save it $53.1M annually (ReFED 2018, ReFED 2022, includes figures below).

PREVENTION SOLUTIONS

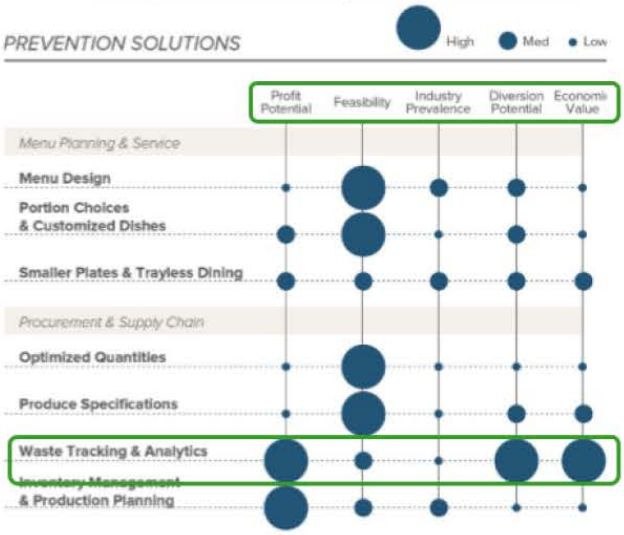
ReFED | Rethink Food Waste
Through Economics and Data

THE CURRENT LANDSCAPE

The full cost of food, including purchases, preparation, and disposal costs, to restaurants averages approximately $4,000 per ton.[18] Based on a survey conducted by the National Restaurant Association, nearly half of restaurant operators track food waste as a prevention method,[19] but there is still an opportunity to do more, especially in capturing post-consumer food waste. Prevention solutions are not only some of the most cost-effective but can also be easier to implement without having a negative impact on the guest experience.

KEY INSIGHTS

- Solutions that prevent waste in restaurants have the greatest economic value and net environmental benefit, saving almost 400 thousand tons of waste annually.
- Prevention solutions provide restaurants nearly $620 million in business profit potential annually.
- Tracking food thrown away could cut food costs by 2 to 6% by increasing awareness of food waste within the company and focusing attention on front- and back-of-house prevention activities.



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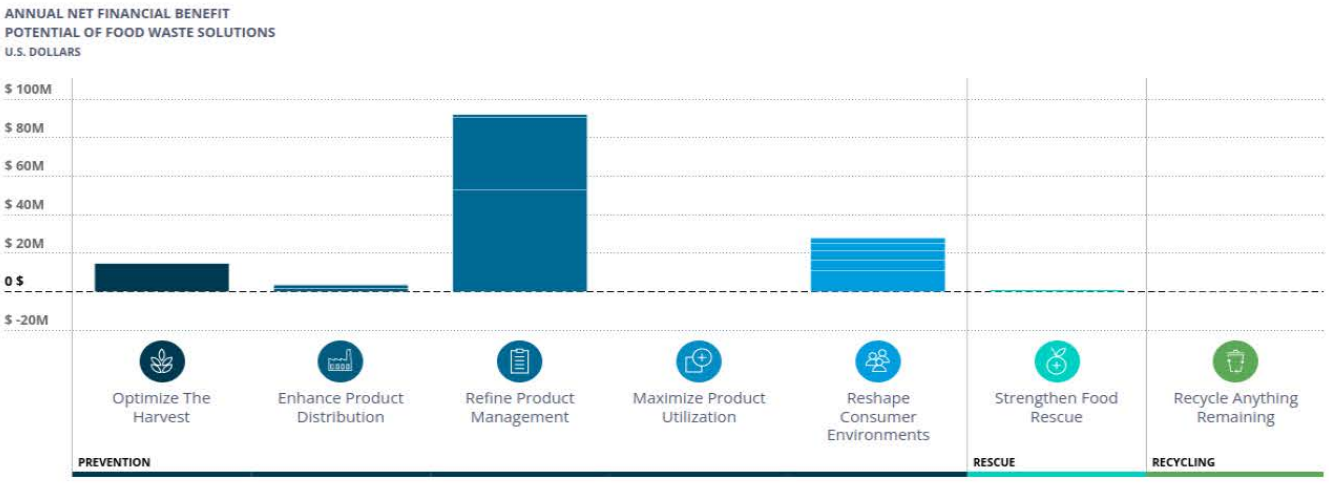
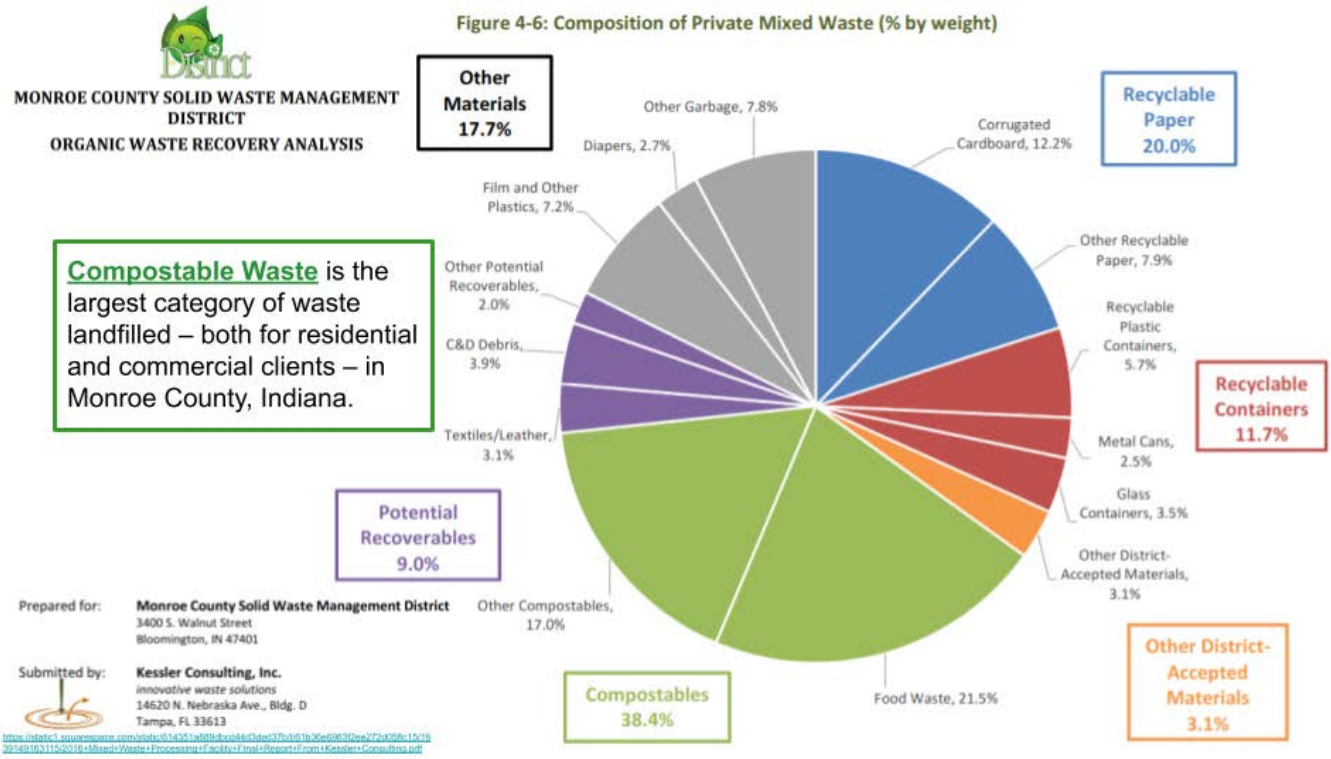


Noting all of this, the *Compost Up, Downtown* program is an object-lesson in Triple Bottom Line program development, specifically given the fact that recent studies on the local waste stream – conducted by Kessler Consulting, under agreement with the Monroe County Solid Waste Management District in 2018 – revealed that almost 40% of the County waste stream was food and potentially compostable waste (Kessler 2018a, 2018b).



This level of waste is an indicator of potential economic development opportunities which could be captured through the remediation of operational inefficiencies that can be productively addressed through cultivating awareness of food waste at various steps in operations management, including procurement, inventory handling, food prep, portioning, and plating. Industry research on kitchen operational costs corroborates this macro-level indication, suggesting that (1) a typical food service location wastes 4%-10% of procured food inventory *before* it leaves the kitchen; (2) the labor wasted on handling food that ends-up wasted – inventorying/stocking, preparing/trimming, overproducing/overplating – is estimated to be between 4%-8% of compensated labor-hours (LeanPath 2022a, 2022b).

CHAMPIONS 12.3

THE BUSINESS CASE FOR REDUCING FOOD LOSS AND WASTE: RESTAURANTS

A Report on Behalf of Champions 12.3

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

SUMMARY FINDINGS

We analyzed data of preconsumer waste from 114 restaurant sites, located across 12 countries, and calculated the following results:

- The average benefit-cost ratio for food waste reduction was 7:1 over a three-year time frame.
- Within the first year of implementing a food waste–reduction program, 76 percent of the sites had recouped their investment. Within two years of implementing a program, 89 percent of the sites had recouped their investment.
- By reducing food waste, the average site saved more than two cents on every dollar of cost of goods sold (COGS).
- There appears to be no clear correlation between benefit-cost ratios and a site's market segment or geography.
- Key strategies for achieving food waste reduction were to measure the food waste, engage staff, reduce food overproduction, rethink inventory and purchasing practices, and repurpose excess food.

ABOUT THIS PUBLICATION

This publication focuses on the financial business case for reducing food loss and waste in restaurants. It is a supplement to *The Business Case for Reducing Food Loss and Waste* and provides additional sector-specific data and analyses. *The Business Case for Reducing Food Loss and Waste* was published in March 2017 and is available at www.champions123.org/the-business-case-for-reducing-food-loss-and-waste/.

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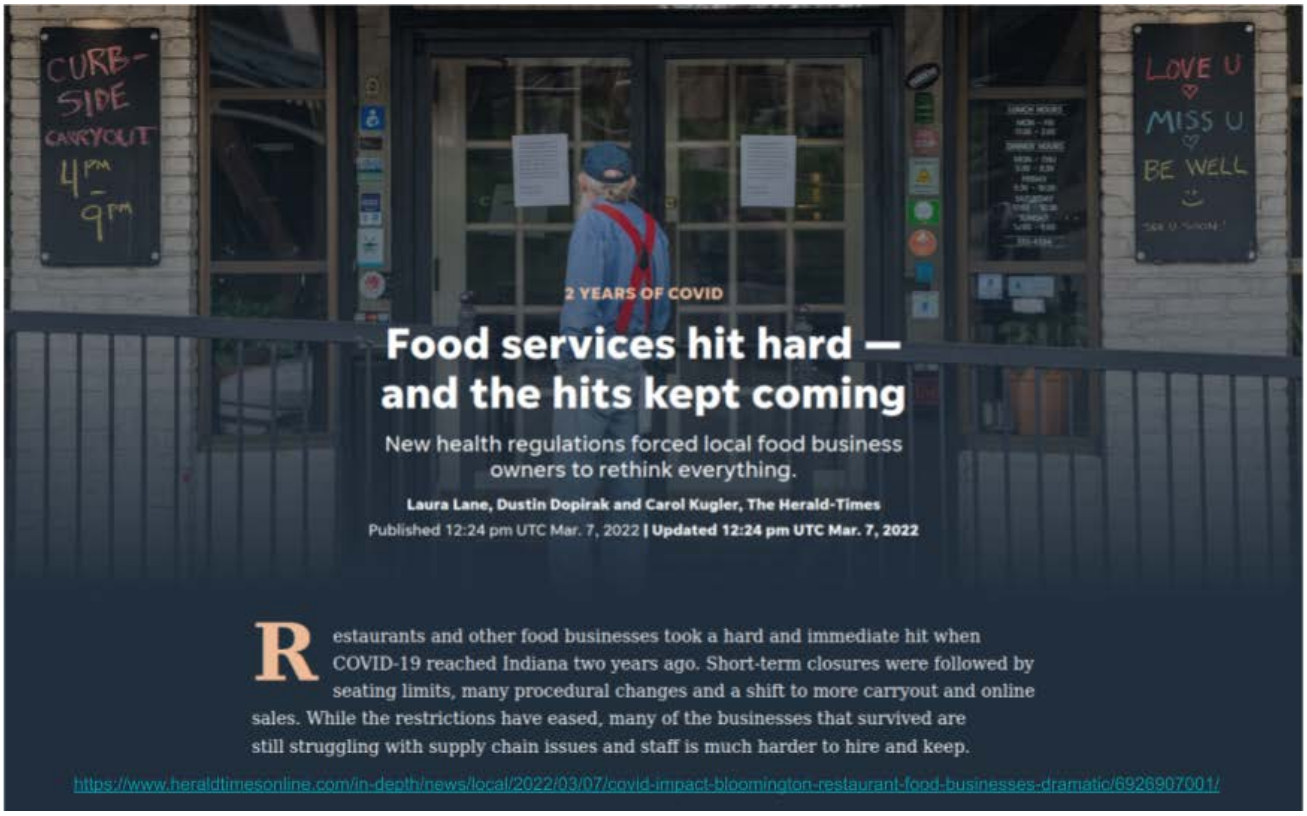
[Image: Champions 12.3 2019]

Investigating precisely these economic development opportunities, Champions 12.3 – a global, cross-sector group of industry and institutional executives organized to achieve the United Nations Sustainable Development Goal 12.3, to halve per capita global food waste and food loss by 2030 – commissioned a series of studies on the financial case for organic waste reduction [Champions 12.3 2023]. The series included studies on the economic effects of organic waste reduction in Catering, Households, Hotels, and, most relevant to this program's purpose, Restaurants. The results suggest a staggering potential for medium-term and long-term economic gains ($7 returned for each $1 invested, over a 3 year period); however, the ascendant power of short-term financial incentives and perceived risks of operational change – in a tight and fluctuating COVID-era market environment – call into question the durability and

generalizability of these results to the Bloomington food service market, warranting both investigation (to gather data) and short-term intervention (to overcome short-term incentives).



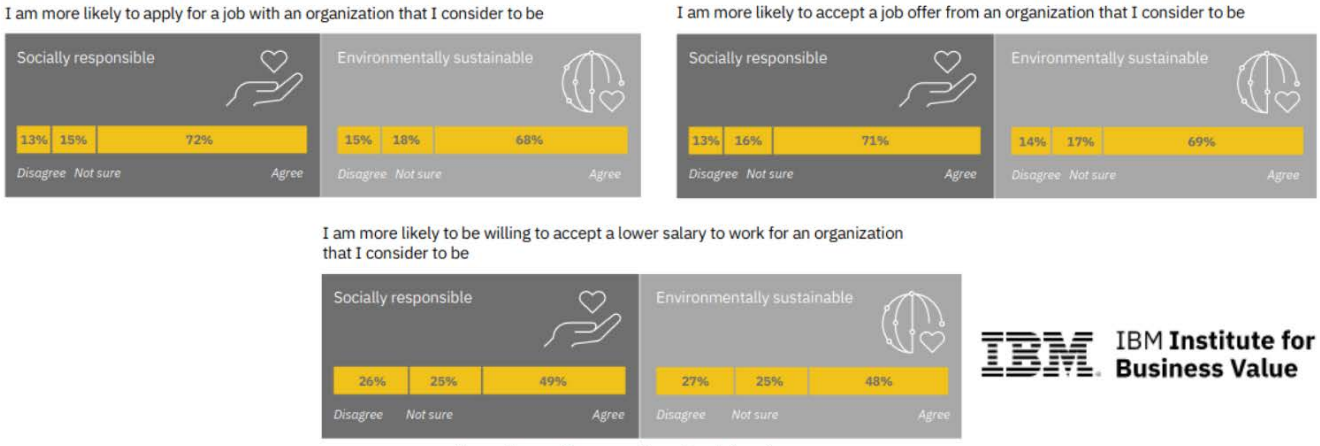
The coherence among the results of the aforementioned research consortiums and their associated studies suggested a strong financial case for commercial kitchens to track and divert food waste. However, to address additional proprietor concerns regarding their perceived risk of short-term losses from the process of operational change, additional research literatures were consulted to consider indirect economic benefits and operational benefits that could more immediately accrue from the adoption of organic waste tracking and diversion.

According to local and national reporting, maintaining adequate staff to support conventional open-hours has been a major struggle for restaurants in the COVID-era, compounding the sector's troubles born from the downregulation of consumer interest during government-mandated lockdowns, occupancy restrictions, mask mandates, and the general, public promotion of responsible personal caution (IDS 2022, HT 2022, WAPO 2022, RBO 2022). As such, designing educational interventions about the staffing benefits of organic waste diversion became an imperative. Since EarthKeepers administrators have had lived-experience working in commercial kitchens, the potential staff benefits were intuitively obvious: throwing-out huge, heavy bags of commercial kitchen waste is an unpleasant and potentially hazardous duty that most kitchen operators would prefer to avoid.

This is corroborated by Occupational Safety and Health Administration (OSHA) research and findings by the Bureau of Labor Statistics (BLS) that suggest: (1) the #3 most common injury for fast food kitchen employees is to be “Hurt while lifting or carrying items” (34% of employees have experienced lifting injuries); (2) the #4 most common injury for fast food kitchen employees is to be “Injured by a fall on a wet, slippery, or oily floor” (23% of employees have experienced slipping injuries); and, (3) 25% of workers compensation indemnity claims involve back injuries (Mashed 2021, UoM 2022). Hence, it became clear that a major asset of organics diversion services that deserves emphatic promotion is the workplace-safety benefits and staff-satisfaction benefits that accrue from shifting organic waste disposal from mixed-waste garbage-bags – which need to be hurled into a dumpster – over to leakproof rolling carts (“rollers”) that can be easily maneuvered from the side of a prep-table out into an alley, by staff of varying physical capacities. Minimizing the hazards of a least-favored task in the kitchen can boost staff morale by reducing physical load, reducing psychological stress, and increasing a sense of being cared-for, all while reducing the commercial operation’s overall risk profile.

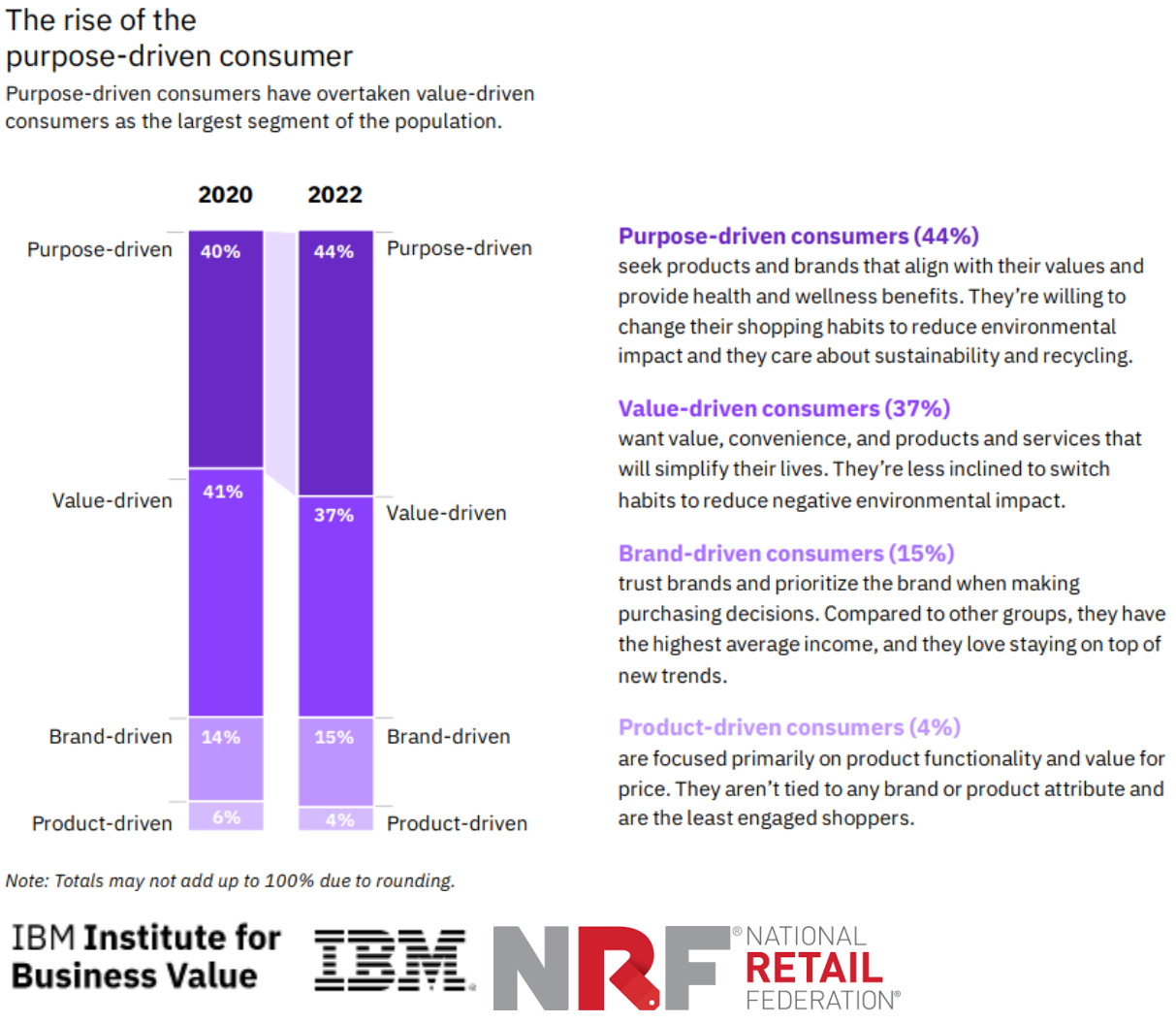
VS

The safety-enhancing operational changes brought by adopting organics diversion services can be a helpful tool for retaining staff but promoting organics diversion programming during the hiring search can also help to *attract* new staff. In 2021, IBM’s Institute for Business Value conducted research on consumer and labor-pool opinions around sustainability programming in business, finding that 68%-69% of employment-seekers say that environmentally sustainable companies are more attractive employers (IBM). 48% said they would even consider a pay-cut!



https://www.ibm.com/downloads/cas/WLJ7LVP4

Regarding the downregulation of restaurant patronage in the COVID-era, committing to commercial organics diversion services – and being sure to proudly promote it – can have knock-on benefits for client attraction, much as it can for employee attraction. In early 2022, IBM's Institute for Business Value partnered with the National Retail Federation to analyze consumer demands and experiences in the COVID-era, noting that "Retailers and brands must align their offerings and capabilities with these new consumer expectations that have emerged from the crucible of COVID. But what changes are mission critical?" [IBM NRF 2022, 1]. According to their survey work, "consumers expect companies to cater to their needs and live up to their social and environmental responsibility claims" [ibid 1]. Specifically: "roughly 4 in 5 consumers say sustainability and health and wellness benefits are important to them when choosing a brand" [ibid 8]. Further, "While Millennials are leading the charge, every age group indicates that sustainability, environmental, and/or personal wellness attributes are significant considerations in selecting brands" [ibid 8].



With all of this research in-hand, the next clear steps were to outline program details, to create targeted proposals and consulting interventions, and to approach both restaurants and the wider business community with the information and offerings.

Program Design and Official Launch:

The principal elements of the pilot program were crafted to maximize restaurant benefit from the organics services and minimize operational friction with perceived barriers, so as to demonstrate the ease and long-term financial viability of such commitment. Specifically, the program was designed to relieve barriers-to-entry associated with the time-cost of training staff and routinizing procedures, hoping also to inspire proprietor confidence in the existing research that suggests multi-year cost-recovery timelines, even in the face of immediate reshuffling and a potential, short-term break-even.

The maximum number of participants was decided to be 16 restaurants, so that an even and reachable number of applicants could be designated for each quarter of the program's yearlong rollout (April 2022 through May 2023), with each quarter constituted by a cohort of 4 restaurants. It was intuited that there could be quarterly discrepancies in restaurant willingness to participate, due to seasonal fluctuations in staff size, labor-pool availability, and staff turnover; however, no viable way of executing the program within 1 year could be discerned if staff-disrupting periods of Summer Break and Winter Break were to be avoided. Hence, it was agreed among the parties that the 4-cohort timeline would proceed but with openness to program recruitment adaptations that could account for seasonal disruptions of staffing and related proprietor interest in the pilot. Participating restaurants were also slated to receive customized, discounted quotes for choosing to continue organics diversion services by the end of their trial-period.

After launching the program through an Informational Webinar, hosted by City of Bloomington ESD on March 7th 2022, food service businesses were invited to apply for the program through an online form found on the program's webpage, which included entrance-survey questions regarding the eatery's current waste management operations, their desired cohort for the year, and requiring a scanned copy of their Monroe County Health Department permanent retail food establishment license. Anticipating inertial difficulties in gaining attention and interest, the program was also amended to be open to eateries outside of the BEAD if a cohort's application deadline passed without being full.

When a business applied and was approved through the online application portal, they were immediately eligible for the included suite of services: EarthKeepers would schedule administrative meetings and staff trainings, explain the program-kickoff waste-audit, review kitchen waste-management logistics, discuss common barriers and contamination hazards, negotiate optimum indoor and outdoor rolling cart placement, and consult on the development of new standard operating procedures to reduce food waste and sustainably divert it from the landfill. EarthKeepers also developed educational materials, slide presentations, and various signage that was deployed and situated during trainings, and which eateries adapted to their convenience and workflow over the course of the free trial. Total program incentives included:

– Weekly collection of hot-stamped rollers (32-gallons each) and delivery of sanitized replacement rollers. Rollers may be collected two or three times per week, depending on assessed needs.

– 5-gallon buckets and 1.5-gallon pails, with lids, for internal use.

– Waste audit, including presentation and Q&A for owners and staff, a staff training session, discussions with staff to identify common composting contaminants, and custom signage and bin placement.

– *Window decals for participants. (most participants were not interested or didn't post it)

– *Personalized web-profile on the EarthKeepers website. (some interest emerged but difficulties in getting buy-in and follow-up on bios and descriptions inhibited implementation)

– Mixed-media promotions of participating restaurants as EarthKeepers partners.

Anticipated Cohort Dates:

Cohort 1: April 2022 - July 2022

Application due date: March 25th
Confirmation of participation: March 31st
Program prep and waste audit: April 4th - April 18th
12 week trial period: April 18th - July 17th

Cohort 2: June 2022 - October 2022

Application due date: June 10th
Confirmation of participation: June 17th
Program prep and waste audit: June 27th - July 11th
12 week trial period: September 16th

Cohort 3: September 2022 - January 2022

Application form due date: September 9th
Confirmation of participation: September 16th
Program prep and waste audit: September 26th - October 10th
12 week trial period: October 10th - January 8th, 2023

Cohort 4: January 2023 - May 2023

Application due date: January 13, 2023
Confirmation of participation: January 20, 2023
Program prep and waste audit: January 30, 2023 - February 12, 2023
12 week trial period: February 12, 2023 - May 14th, 2023

Recruitment Efforts, Barriers, and Innovations:

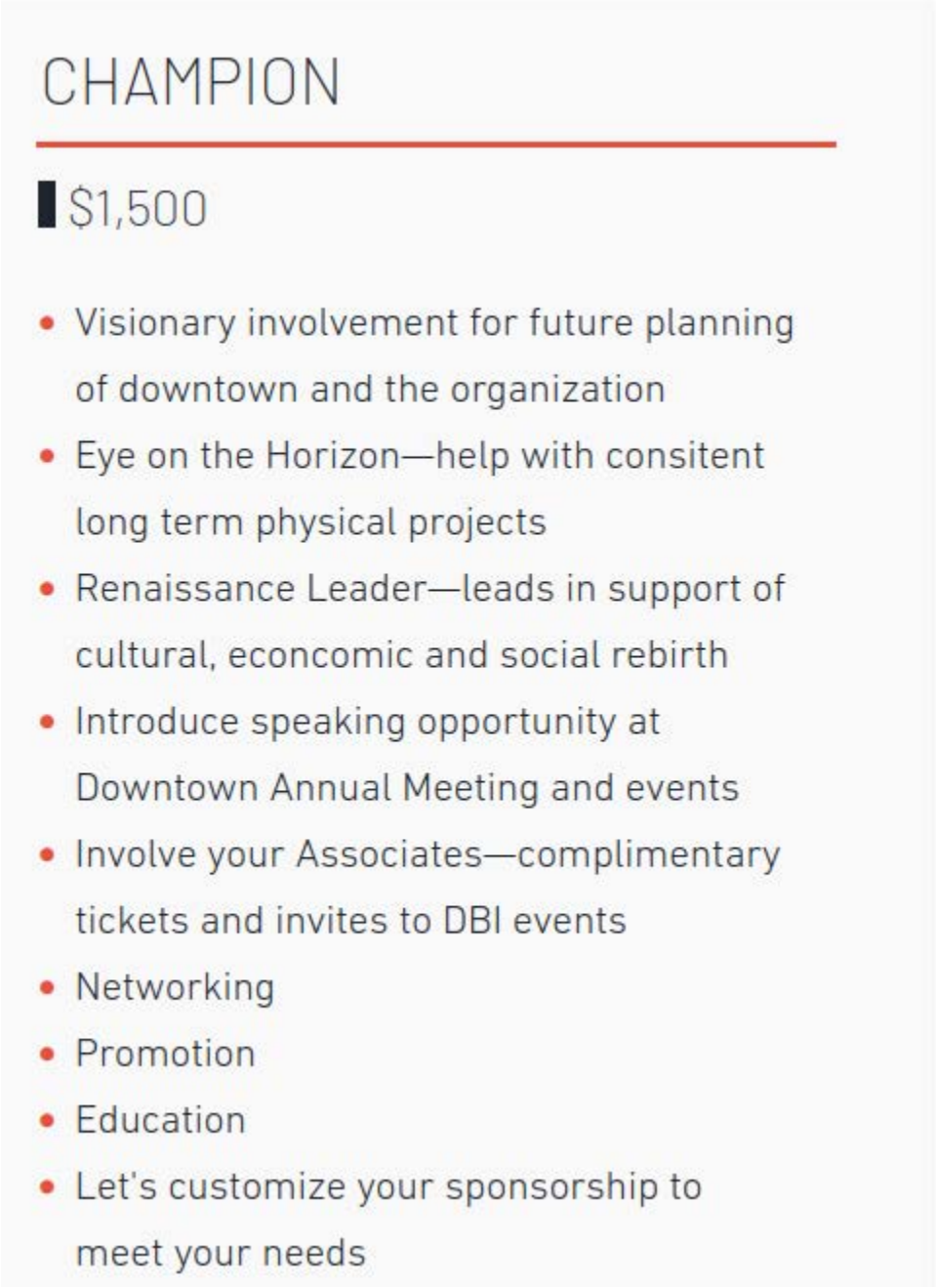
As noted from the research above, EarthKeepers anticipated that restaurant proprietors would perceive barriers-to-entry for organics diversion programming; hence, recruitment efforts and consulting materials were designed to alleviate those concerns. EarthKeepers initially attempted to contact proprietors through site-visits as well as emails and voicemails to owners or top-level administrators, leading with research on the business-case for deploying organic waste reduction and diversion programming. EarthKeepers routinely encountered communications barriers with proprietors, usually being unable to find them on-site or not getting responses to email or voicemails. As such, every prospective applicant received multiple site-visits, emails, and voicemails to advertise the benefits of the program.

Due to these challenges, the application deadline for Cohort 1 passed without a sufficient number of applicants, so the BEAD-area limitation was relaxed for that cohort – in accordance with the plan memorialized on the program launch page – and new recruitment methods were deployed. Though a candidate just outside of the BEAD was immediately recruited to fill the open slot – completing the roster for Cohort 1 – EarthKeepers was inspired by the challenge and quickly went about addressing it by seeking to identify collaborative organizations in the local food-service sector that could help disseminate information and promote participation in the program. EarthKeepers first came across the Bloomington Independent Restaurant Association (BIRA), which has existed since 1995, and Local First Bloomington (LFB), which nonprofit data shows has existed since 2009 after beginning as a project of the Center for Sustainable Living. Unfortunately and to our surprise, both BIRA and LFB have fallen out of existence: both organizations' website links are dead or redirected; plus, corroborating this, BIRA's last Facebook post was made in May 2019 and LFB's last Facebook post was made in July 2017, suggesting that neither are maintained.

In order to bypass this challenge – to broaden the reach of recruitment and to demonstrate credible commitment to promoting the health of the downtown businesses we wished to serve through the program – EarthKeepers resolved to join local economic development groups like Downtown Bloomington Inc., the Greater Bloomington Chamber of Commerce, and the Bloomington Economic Development Corporation to expand the reach and authenticity of the program messaging content.

Downtown Bloomington Inc (DBI) is Bloomington's local manifestation of Main Street America and Indiana Main Street, subsidiaries of the National Trust for Historic Preservation that were launched in 1980 to address a multitude of issues negatively affecting the economic development potential of older and historic downtowns across the United States. With a board consisting of local government and economic development leaders and with a broad membership base of businesses in downtown Bloomington, working with DBI presented an unparalleled opportunity to learn about specific challenges in the local market and to learn about on-the-ground challenges facing local business owners, beyond the headlines and the studies. Particularly, DBI offers a tiered membership structure that provides a variety of benefits to members based on their desired level of contribution and involvement, creating opportunities for motivated local community members to plug-in and help shape the collective's downtown vision.

As such, EarthKeepers signed-up with DBI as Champion members, hoping to make the most of what was offered to community organizations opting for that level of membership:



DOWNTOWN BLOOMINGTON
MAIN STREET AMERICA

YOUR **CONNECTION**. YOUR **PARTNER**. YOUR **VOICE**.
A MAIN STREET AMERICA PROGRAM

As Champion members, EarthKeepers was given the opportunity to attend a wide variety of organizational meetings, with both the leadership and general membership, wherein the program and the broader concept of a Culture of Compost could be presented. Having gathered information from the leadership team and the organization's web-presence, EarthKeepers requested 3 presentations – to the DBI Board, to DBI's Kirkwood Group, and to the DBI membership – and agreed to be a part of the Taste of Bloomington steering committee. Though Taste of Bloomington ended-up being canceled in 2022 – due to restaurant-staffing issues and the reluctance of regional beer distributors – conversations with steering committee participants were insightful. Further, the 3 presentations to DBI sub-groups were both insightful and immediately successful, establishing solid contact with administrative representatives of multiple restaurants, 6 of which ultimately participated in the *Compost Up, Downtown* program, including the Monroe Convention Center out of which DBI operates.

With similar hopes of accessing and understanding the challenges facing downtown eateries, EarthKeepers also joined the Greater Bloomington Chamber of Commerce as Classic members and attended mixer events, where we had an opportunity to pitch the program and get feedback. Though it did not directly yield a cluster of applicants, learning about the local culture of business networking and the overall health of the small-business economy was helpful for understanding barriers and refining the program pitch to address local proprietors' pain-points. Concurrently, EarthKeepers applied for Board Membership with the Bloomington Economic Development Corporation to afford us the opportunity to communicate the business-case for commercial organics diversion, meet members in food-service with catering divisions that serve the areas larger corporations, and to broaden the word-of-mouth reach of the program through highly-central local business network actors.

The additional effort to join local business and economic promotion organizations was pivotal to successfully recruiting applicants, providing EarthKeepers leadership with market-specific insights and direct connections to leaders and proprietors in the local food service sector. Nonetheless, recruiting prospective participants to fill the 16 available slots remained challenging, with 47 total eateries recruited and only 16 eateries applying and participating, even though EarthKeepers spent 3x as much time as anticipated on recruitment-oriented site-visits. Most of the eateries that were recruited for the program but failed to apply did not articulate a defining reason for non-participation but, rather, the bulk of them continued to express cautious interest that did not ultimately result in a callback or application. Nonetheless, a handful of generic concerns and doubts tended to inflect their hesitancy, typically those already anticipated from the background research: staffing issues, doubts about training staff given issues, COVID-era operational adaptations, and COVID-era economic shocks (rising prices, fewer clients).

Summary Program Results:

COHORT	Restaurant	Pilot Start Date	Pilot End Date	Organic waste diverted	Number of bins collected	Collection frequency	Average number of bins collected per pickup	Contamination Rate (% of bins containing contaminants)
1	**Nicks**	4/1/2022	9/30/2022	5811	73	Mon, Wed, Fri	1.2	3
	Osteria	4/1/2022	9/30/2022					
	Southern Stone	4/1/2022	9/30/2022	10605	124	Tues, Fri	3.5	18
	Convention Center	4/1/2022	9/30/2022	8624	108	Tues, Thur, Sun	4	8
2	**FARMbloomington**	5/1/2022	10/31/2022	11746	139	Tues, Fri, Sun	3.3	4
	BuffaLouie's	6/1/2022	10/31/2022	18206	348	Mon, Wed, Fri, Sun	6	31
	Soul Juice	6/1/2022	10/31/2022	4587	66	Mon, Wed, Fri	1.3	5
	Uptown Cafe	7/1/2022	11/30/2022	14822	150	Tues, Fri, Sun	4	6
3	**Crazy Horse**	9/1/2022	12/31/2022	294	15	Mon, Thur	1	13
	DaVinci's Pizza	9/1/2022	12/31/2022	3259	43	Mon, Wed, Fri	1.2	9
	Trojan Horse	9/1/2022	12/31/2022	0	0	Tues, Fri	0	0
	Juannita's	9/1/2022	12/31/2022	140	10	Tues, Fri	0.7	40
4	**InBloom**	9/16/2022	1/6/2023	561	18	Mon, Thur	1	6
	Cup & Kettle	9/16/2022	1/6/2023	236	32	Mon, Thur	1.5	0
	Baked!	9/16/2022	1/6/2023	400	15	Thur	1	7
	Pili's Party Taco	9/16/2022	1/6/2023	1720	42	Mon, Wed, Fri	1	12

			***This is equivalent to Greenhouse Gas Emissions from**			***This is equivalent to carbon sequestered by**	
Total Tons of Food-waste recovered	Tons of Methane (CH4) emissions reduced	Equivalent tons of CO2	Gallons of Gasoline consumed	Miles driven by an average gasoline-powered passenger vehicle	Home's electricity use for one year	Tree seedlings grown for 10 years	Acres of U.S. forests in one year
40.5	10.125	279	28,483	628,308	49.3	4,185	300

* Data calculated with the EPA Greenhouse Gas Equivalencies Calculator

Program Successes:
The program, overall, was a remarkable success given the economic and labor-market circumstances. Not only were all 4 cohorts filled and completed but responding participants also provided very positive reviews of the program, while many new market and institutional connections were made in the advancement of a local Culture of Compost.

Cohort 1 (*April 2022 - July 2022*) kicked-off with the iconic Bloomington eatery Nick's English Hut and it's sister-operation Osteria Rago, was anchored by the commercial kitchen (MCL Restaurant & Bakery) at the Monroe Convention Center, and was rounded-out with an eagerly wait-listed eatery just outside of the BEAD, at the time known as Southern Stone. The owners and managers at each location were exceptionally forward-thinking in rapidly adopting the program while promoting buy-in from their managers and staff. Not only were these administrators receptive to the research in the consultations but several had already implemented food-waste tracking measures in their kitchens that interfaced with their financial analysis, with standout spreadsheet wizardry going to Nick's English Hut and Osteria Rago. Monroe Convention Center provided broad exposure to a wide range of local and visiting clients while also promoting program awareness in support of downtown businesses, through DBI.

The total amount of organics diverted by **Cohort 1 was 25,040lbs** (12.5 tons) through the servicing of 305 rollers.

Cohort 2 (*June 2022 - October 2022*) kicked-off with a solid connection from DBI and Nick's English Hut: FarmBloomington administrators had heard about the program from a DBI Kirkwood Group meeting plus a manager there had a good relationship with Nick's from a prior stint of managing there, too. Michael's Uptown Cafe was quick to join as soon as they knew what was going on next door…and with over 90 staff in the all-staff training, there was some serious awareness being raised! SoulJuice's management was skeptical, at first, but once the owner became excited about the idea, it was revealed that the skepticism had been rooted in their already-existing diversion of some organic waste to a local farmer that they wanted to keep supporting. BuffaLouie's was something of a crowning achievement, joining the program after EarthKeepers administrator's *fifth* site-visit made the pile of applications worthy of an actual meeting…But, come on, their burgers are just too good and it was a great excuse to eat them!

The total amount of organics diverted by **Cohort 2 was 49,361lbs** (24.7 tons) through the servicing of 703 rollers.

Cohort 3 and *Cohort 4* were anticipated to run from September 2022 through May of 2023; however, ground-level learning in the restaurant recruitment process – coupled with emergent developments of instability in geopolitical and macroeconomic indicators, around the Russian invasion of Ukraine and the Inflation/Interest-Rate nexus – informed EarthKeepers that the level of owner receptivity to the program could change for the worse, or even collapse through the winter. As such, after a rapid-action acquisition of the Cohort 3 participants, CoB ESD was consulted to request a combining of timelines of Cohort 3 and Cohort 4 in the hopes of completing the program before any potential worsening of global or local economic conditions

could occur. With that approval in-hand, EarthKeepers set about rapidly recruiting the final restaurants for cohort 4, ultimately running the two cohorts side-by-side. Though the major concern with this approach was manageability for EarthKeepers' staff and fleet, it worked-out that the 8 eateries of Cohorts 3 & 4 were much smaller and produced waste volumes that were tiny in comparison to those in Cohorts 1 & 2, fortuitously allowing a smooth run to program completion by the end of January 2023. Though the hope was to divert consistently large volumes of organic waste from each of the cohorts, what our experience with Cohorts 3 & 4 reveal is a heterogeneous distribution of waste among the commercial kitchens of downtown, a reality that is helpful when considering logistical solutions to organic waste diversion throughout the whole sector.

Cohort 3 kicked-off with another DBI connection, this time with long-time DBI supporter, Board member, and core organizer Ron Stanhouse, who's staff at Crazy Horse was welcoming. Another horse joined the race – The Trojan Horse – after seeing their neighbors at Uptown and FarmBloomington on the organics track. Language barriers were overcome with EarthKeepers' Spanish-speaking assets, allowing us to plant the seed with kitchen managers at DaVinci's and Juanita's, whose owners were buoyed and quickly onboard.

The total amount of organics diverted by **Cohort 3 was 3,693lbs** (1.8 tons) through the servicing of 68 rollers.

Cohort 4 began much as Cohort 3 ended, with Pili's Party Deli being first to the punch, likely on the good-influence of their neighbors at Trojan Horse, Michael's Uptown, and FarmBloomington. InBloom Juicery was the second participant from the downtown juice-brigade, though it took 4 visits to get a meeting among the owners…at least we never walked away thirsty! Bloomington's late-night cookie-ninjas at Baked! brought sweetness to the final lap and the Cup & Kettle tea house was a welcome respite at the end of the trail, with matcha cookies and golden milk as innovative menu favorites.

The total amount of organics diverted by **Cohort 4 was 2,917lbs** (1.46 tons) through the servicing of 107 rollers.

	Cohort 1	Cohort 2	Cohort 3	Cohort 4	TOTAL
Lb	25040	49361	3693	2917	**81011**
Tons	12.5	24.7	1.8	1.5	**40.5**
# bins	305	703	68	107	**1183**

Knock-on benefits from pursuing the program also became clear throughout the process: First off, even the eateries that didn't apply were given consulting information and local waste system data, raising overall awareness about the organics problem and planting the seeds of data-driven solutions. For the few that did respond directly that they weren't sure if it was the right time for them, EarthKeepers still encouraged their tracking of organic waste to help improve their bottom-lines.

Second, the greater Bloomington business networks have each been primed on the topic, given EarthKeepers' work to connect with the core economic organizing platforms at DBI, the Chamber of Commerce, and the BEDC: the business-case for composting can now be more commonly considered and discussed, now that core concepts and research has been brought to the table. Social proof can be a key driver for adoption of organics diversion programming, so with many businesses now participating – and many more interested in the discussion – subsequent programmatic interventions are likely to be successful, assuming market conditions stabilize or improve.

Third, in the process of raising awareness around the organic waste issue, other modes of traditional recycling almost always became part of the discussion with eatery administrators. Two major recycling issues were often repeated: doubts about the efficacy & affordability of existing services as well as spatial constraints on placing organics rollers. In the process of our consulting with these proprietors, EarthKeepers was able to help several downtown restaurants navigate their other recycling challenges by connecting them with the Green Business Network that operates discounted commercial recycling services under the auspices of the Monroe County Solid Waste Management District. Not only did this raise awareness about the GBN program but it also helped reduce restaurants' overall waste-management costs and resolved the spatial constraints issues facing some in their alleys and parking lots: medium-sized rolling bins are much more spatially adaptive than multi-yard dumpsters.

Lastly, the awareness-raising was not limited to restaurant proprietors or the area's business development organizations but also expanded to include kitchen and dining staff. We see this as an important benefit of the program because it has the potential to broaden the reach of the organic diversion idea as well as the potential to spread effective organics management procedures learned in training. Kitchen staff can be highly mobile in the local labor pool and, as we have learned from this program experience, they bring their ideas and training with them wherever they go: EarthKeepers locked-in a pilot participant because their former employer spoke highly of the program; further, EarthKeepers has been approached by clients outside of the downtown restaurant pool whose new kitchen managers have had previous exposure to EarthKeepers services and found the diversion work to be both easy and important. This also speaks to the importance of cultivating staff-level manager buy-in: staff-manager enthusiasm can go a long way in keeping-up morale during SOP-adoption periods and is the core source of reinforcing the trainings provided by EarthKeepers. If the staff are enthusiastically motivated and consistently reminded of their training, it can stick and travel with them when they move on.

Program Challenges:

The most immediate and obvious challenges to the program are the persistent shortages of staff and persistent sector-level hardship from COVID-era economic shocks, which both put strain on margins and drive consolidation in the restaurant industry (as further demonstrated by back-to-back cancellation of the 30-year running Taste of Bloomington event). Perhaps surprisingly, this strain was illustrated by EarthKeepers' experience with restaurants in the Endeavor Hospitality Group: only one of the group's restaurants agreed to participate in the

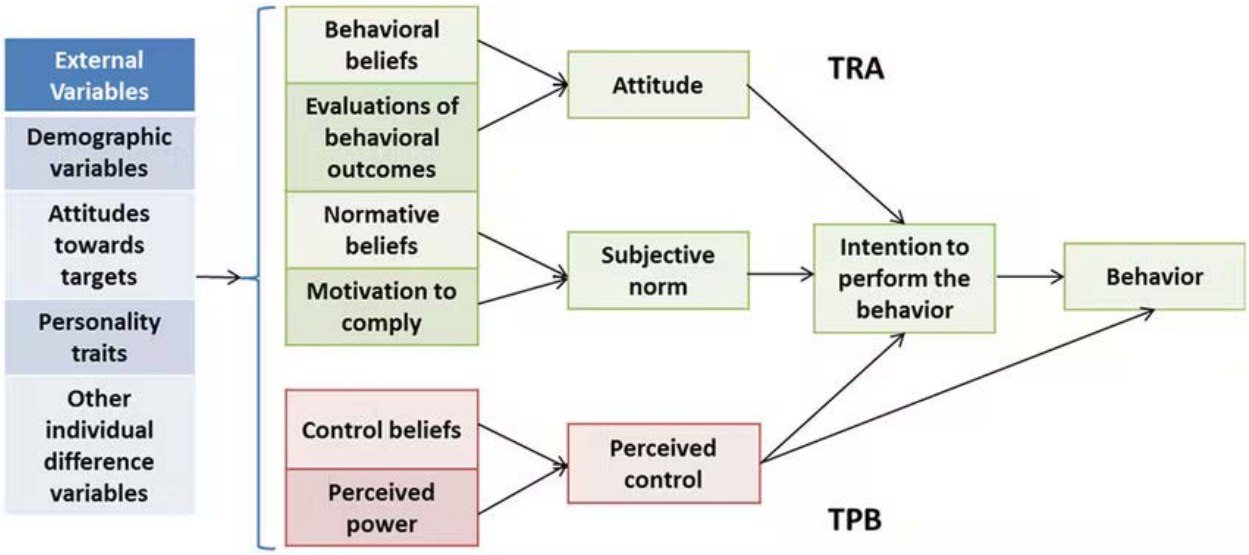
program and when there was a change in management after the program was complete, the new manager was confident in maintaining the service, only to report-back, days later, that corporate demanded immediate termination of the service. It turned-out that the original manager was paying for the post-trial service out of his own funding, which was heroic but couldn't last. Given the size of the group's restaurant holdings – 11 local eateries – this is a huge missed-opportunity. Supposing that economies of scale and resource-shuffling could more easily be accomplished by a multi-holding hospitality group, it is tempting to speculate that shareholder demands were actively trumping local value demands; however, a similarly missed opportunity presented itself in the refusal by Finney Hospitality Group to have it's 4 restaurants participate in the program, even though the founding proprietor of the group is local to the area, hailing from Bedford. These two groups represent a sizable portion of the restaurants on the Square and surrounding blocks; hence, special efforts should be made to work with their administrators to get detailed descriptions of their perceived barriers, pain-points, and risks.

The time spent on applicant recruitment was enormous given that **47 restaurants** were approached for recruitment and only 16 participated, with all prospective restaurants receiving at least 2 site-visits, some receiving 4 site visits, and one receiving 5, not to mention several phone-calls in the process of prospecting. This was expected to be the case for Cohort 1, given the lack of social proof in addition to the very brief latency between the program's official launch and the cut-off date for starting programmatic service. However, it was a high recruitment failure-rate in pursuit of Cohort 2 that suggested a change of strategy and a modification of recruitment tactics would be needed to accomplish the full scope of the pilot. These developments drove the acceleration of recruitment and combination of Cohorts 3 & 4, suggesting that our adaptation of recruitment tactics was successful but still leaving concerning questions about the future ability and interest of the sector to participate in organics diversion.

Time spent on calibrating and re-training was also surprisingly immense, though the surprise quickly faded once we became aware of these calibration difficulties and training issues being related to cycles of mass staff-turnover. Calibration difficulties took the form of things like negotiating where rollers were designated to be set in an alleyway, how full a roller should be before needing collection, and how many times per week would collection be desired. Re-Training issues primarily took the form of serious and repeated contamination offenses that required an additional presentation, conversation, or redesign/redistribution of signage. To be fair, this last issue was somewhat expected given emerging research on organics recycling contamination issues and enduring facts about contamination issues in the (inter)national, conventional recycling market (fibers, glasses, and metals, but most especially plastics) [EPA 2021, Resource Recycling 2018]. The pilot's inclusion of a waste-auditing component of the program was specifically intended to identify and to prevent contamination issues, anticipating it to be the most pernicious challenge to the long-term viability of organics diversion services. Indeed, all eateries fell prey to some degree of this challenge – even the occasional glove or hairnet – which is the hardest to address: behavioral change, even among the highly motivated.

The Value-Action Gap is a notorious problem in the social sciences, plaguing everything from New Year's Resolutions to the implementation of environmental policies. The core of the

problem stems from the widespread intuition that people's beliefs translate into effective actions that manifest those beliefs. Research conducted in the 1960's first formalized these intuitions as Theories of Reasoned Action (TRA) and were updated in the 1980's with an elaborated Theory of Planned Behavior (TPB) [The Decision Lab 2023]. Indeed, beliefs can certainly motivate implementation; however, analyzing the gap between values and actions can help to reveal structural challenges that condition the incentives of individual actors, promoting their ability to act or inhibiting it. The original research on TRA and TPB has increasingly been challenged by observational studies around citizen/consumer behavior and, especially in the environmental context, it has been noted that: "while people over time had reported increased awareness of issues such as global warming and high concern for the environment, there was no notable increase in pro-environmental behavior, such as recycling or limiting energy use" [ibid].



[Image: The Decision Lab 2023]

Experts in the field have generated a compelling set of variables that can intervene between a person's stated values and their observable behavior [list & links from Effectivology]:

- **Failure to generate concrete intentions for acting in accordance with values**.
- **Failure to recognize opportunities to act in accordance with values**.
- **Motivational complexities**, for example in cases where people have competing values that support different actions.
- **Social dilemmas**, such as feeling that it's unfair to support a certain value when many other people don't.
- **Lack of trust that acting in accordance with values will be effective**, for example when it comes to not believing that a certain product will actually be recycled if you put it in the recycling bin.
- **Counter-incentives that outweigh the associated values**, for example when a product that is manufactured in a more ethical way is more expensive than competing products (this specific example is a case of an *attribute tradeoff*, whereby the attribute of the product being more ethical is balanced by it being more expensive).

- **Lack of relevant options or increased difficulty of choosing those options**, for example in the case of having no environmentally friendly version of a necessary product available for purchase.
- **External forces that prompt people to act against their values**, such as marketing that encourages people to buy a certain type of unhealthy food.

And, similarly, general consideration for overcoming the value-action gap can be summarized in a short series of steps [Effectivology]:

- First, people must acquire the necessary *knowledge* on a certain topic.
- Then, people must process this knowledge in a way that causes them to form relevant *values*.
- Next, people must translate these values into *intentions* to take action.
- Finally, people must translate these intentions into real *actions*.

However, this articulation of potential hazards and guidepost for effective solutions must always be understood in the specific context to which the general analysis is being applied. In the context of the *Compost Up, Downtown* pilot, the Value-Action Gap first manifests itself in the administrative decision of whether or not to participate in the organics diversion program, in the first place. From our discussions with proprietors, this example of the Gap seems largely driven by “Counter-incentives” imposed by current market constraints; “Lack of trust [in efficacy]” regarding the research on cost-recovery, staff-retention, and client-attraction; and “Social dilemmas” wherein a strained proprietor perceives insufficient collective adoption by the sector and doesn’t want to be the one individual making a personal sacrifice for the greater good.

The Value-Action Gap then manifests itself more specifically in this context as related to the waste-handling behaviors of individual staff members. Structural risk for externalizing personal labor-cost and succumbing to moral hazard are huge in a context where staff waste behaviors are not periodically monitored and when neither management nor staff perceive a cost to recycling food waste improperly. In the case of providing costless trial service, there is a latent temptation for staff to forgo assigning value or risk-evaluation to their behavior with that service: there is no “stake in the game” to incentivize adhering to the behaviors outlined in the service trainings. Moral hazard – a “situation when an individual can take advantage of a deal or situation, knowing that all the risks and fallout will land on another party” – still remains a dominant behavioral risk even in the context of clients actively paying for the service: the client may be paying to have their organics collected for composting but they are not paying for the extra staff hours, equipment use, and commercial disposal costs EarthKeepers expends to handle the gloves, hairnets, metals, and plastics that some staff repeatedly toss into the organics bins [Corporate Finance Institute 2022]. Financial penalties for contamination and other service-violations have been the only tool that EarthKeepers has at its disposal to manage these structural risks to individual behavioral incentives; however, the limitations of this tool are revealed in studies of organics recycling markets in similar communities, with the most salient example being Madison, Wisconsin, where multiple attempts at municipal and university composting have been stymied by the increasing cost of contamination management (because of implemented financial penalties) and the breakdown of the agricultural systems where their

organics were sent to be composted or biodigested [Kessler 2018b, MinnPost 2022].

Indeed, the Madison Wisconsin experience deserves detailed attention from local policymakers and has been pointed-out by previous, publicly-funded research on our community's waste stream. Excitement around the *concept* of municipal composting or biodigesting must be tempered by the behavioral, market, and logistical *realities* that are clearly and repeatedly demonstrated in the reporting on our community and similar communities. There is a temptation for public officials to fixate on the "make it go away" element of organic waste collection services, often to the perilous neglect of system-level perspectives that necessarily include the processing of that waste and the distribution of the processed residual (compost or biodigestate). If we break the place the "make it go away" goes away to, it can't go away anymore. [Timeline source: UW-Madison Office of Sustainability: Compost]

The Madison Wisconsin example, suggested to our community by Kessler Consulting in 2018, is particularly helpful because of their resilient insistence on learning from their prior mistakes and re-launching ever-tighter programming around organic waste diversion [UW-Madison 2022]. According to Madison-area news reporting and publications available at the UW-Madison Office of Sustainability composting webpage, Madison has been through *three iterations* of large-scale composting programs that have failed because of contamination, cautiously stepping through their fourth attempt. Summarizing some of the learning in their experience, Green Fund Program Manager Ian Aley notes:

"We found that the entire chain of food systems at UW-Madison was intimately connected. Purchasing decisions affect staff training, which in turn affects messaging within an organization. That messaging affects waste hauling, which affects compost processing. Through relationship building and regular communication, we have been able to harmonize our efforts across the system." [UW-Madison 2018]

Unfortunately, even with this enhanced level of insight, instances of the Value-Action Gap plaguing operational waste-management behaviors continued for several years. Indeed, the UW-Madison campus was not alone in this struggle, as the City of Madison fumbled through their own attempts at municipal composting services, which are both described in Madison-local news coverage [MinnPost 2022]. System-level insights are, again, articulated by frontline operators, this time by DNR solid waste coordinator Casey Lamensky, noting:

“We need people to divert material to create enough business for facilities that want to compost and then have enough end markets for those. And they all need to happen simultaneously…And we’re still early enough that if one of those options falls through, there aren’t a lot of backup solutions” [MinnPost 2022].

Noting these experiences and this research, it becomes clear that logistical and infrastructural capacity are necessary but insufficient assets for the development of a long-term sustainable organic waste recycling system. If waste-management behavioral change for commercial kitchen operators is not well incentivized, monitored, and consistently updated, contamination will spoil the organics recycling system and squander the available assets.

Corroborating these conclusions are a host of parallel developments in the traditional recycling market, both domestically and internationally. Recyclable materials long fell-prey to the moral hazard problem, wherein we have collectively treated recycling processors in developing countries as dumping grounds for our “wishcycling,” greasy pizza boxes, and unwashed plastics: *attempts* to recycle have been half-hearted for decades and resulting contamination has long gone unchecked, leading to a critical level of impurities that began to reduce the capacity of international processors to transform all of the recyclable materials into new goods, owing to the amount of contaminated solid waste they had to separate and landfill. [Image: Resource Recycling 2013]

Relying on their processors for almost 25 years, by 2013, recyclable scrap was the United State's top export to China, which was importing approximately 70% of the world's electronic waste (500m tons) and plastic waste (12m tons) every year [Guardian 2013]. In that same year, China had had enough: to signal credible commitment about its contention with the current state of its imported recyclables, China implemented "Operation Green Fence" to try to stem the tide. The policy imposed a 10-month window in which it set a strict allowance of 1.5% contamination per bale of imported recyclables, rejecting 55 shipments and approximately 7,600 tons of imported materials [ibid]. And this was just the start.

By 2017, the contamination of internationally-shipped recyclables had continued, mostly unabated, and China's policy leadership felt it was time to take more drastic action. "Operation National Sword" was announced, portending more strict import inspections and increased rejection of contaminated shipments. Implemented by March of 2018, Operation National Sword reduced the variety of recyclable materials accepted and imposed a 0.5% contamination limit per bale for post-consumer plastics. The effects of the program are stark: in 2017, China imported nearly 5.7million metric tons of plastic from around the world; by 2018, it was only importing 50,000 metric tons. [Sustainability 2022, JCP 2022, YE360 2019]

Given that several other global recyclables processors quickly followed suit with China's policy – Indonesia, Malaysia, Taiwan, Thailand, and Vietnam – U.S. domestic material recovery facilities (MRF's) were left with few alternatives for export, and the volume of U.S. plastics exports dropped from 1.25million metric tons in 2017 down to 600,000 metric tons in 2021 [JCP 2022]. And what became of those plastics? New research on the effects of Operation National Sword suggests that the quantity of plastics *landfilled* in the U.S. increased by 23.2% in just the first year of the policy [Sustainability 2022].

The reckoning for recycling has come.

Indeed, this could easily become the fate of the domestic organics recycling market and it must be avoided – even at great and enduring cost – given the massive environmental impact that science suggests we can achieve through the reduction and diversion of food waste.

Contamination – or rather our failure to robustly manage our behaviors, through reflection or incentive-building – is the great threat, the result of the moral hazard at the heart of our waste-commons tragedy. Investments in organic waste management systems are squandered if they are not predicated on larger investments in awareness-raising, education, commercial consultation, and widespread training. Institutionalizing these educational investments – through policymaking, interlocal partnership, and public-private partnership – is the only way to guarantee that sufficient behavioral and commercial norms are cultivated and enforced for the greater flourishing of the entire community, in its struggle to reduce and manage its waste.

Moving Forward: Reflections on Building a Culture of Compost

The analyses in this report paint a hopeful yet challenging picture of Bloomington's commercial organic waste management landscape. Importantly, this pilot program contributed substantially

to EarthKeepers 5-year (and ongoing) efforts to help the local community cultivate a Culture of Compost. It has been a labor of love to forge working-relationships with multiple divisions of City and County government, and among multiple stakeholders in the economic community from which our fabled food scene emerges and upon which it depends. The *Compost Up, Downtown* program was a welcome and supportive boost from the City of Bloomington, providing us with a programmatic incentive to pursue a deepening of the network of partnerships we have slowly been weaving in pursuit of a local organic waste management apparatus. There are many people to thank and much work to do.

Planning for public policymaking in the organics space must be research-based, locally contextualized, and coordinated for coherence. As an interlocal special-district, whose governance is shared among the City administration, City legislature, County administration, and County legislature, the Monroe County Solid Waste Management District (MCSWMD) is the most appropriately network-central, power-sharing government entity within which policy-planning pursuits can be most fruitfully negotiated. It is encouraging that the City of Bloomington forged-ahead to produce not one but *two* sets of policy-plans for addressing Climate and Sustainability action, while the MCSWMD lagged in producing an update to its 1992 long-range plan. However, organics-related actions outlined in the Climate Action Plan are unrealistic or misaligned with infrastructural and logistical realities, while the MCSWMD has recently produced a 5-Year Plan from updated research and community feedback that could help to bring the City's waste-management plans into alignment with what is currently feasible (City of Bloomington 2018, City of Bloomington 2021, MCSWMD 2021).

EarthKeepers believes that Planning updates are needed for the City's Climate Action Plan (CAP), particularly around food waste collection. Currently, the #1 Goal (Strategy WM 1-A) of the CAP in the Waste Management section is to "Increase organics diversion by 40% of 2018 values," a worthy goal, indeed (City of Bloomington 2021). However, the #1 Action proposed for meeting this goal (WM1-A-1) is to create a " 'Food Scraps Bag' pilot program to test food scraps composting collection across restaurant, commercial and residential customer base where food scrap bags are separated at landfill without separate compost bins and collection vehicles"(ibid). Contained within the description is the key source of the error: things don't get separated at a landfill, they get landfilled. Who would do the separating? What would be their financial incentive? Where would the organics be taken, once separated? These questions aren't addressed because they can't be answered: the only places EarthKeepers have found that are *piloting* such programs rely on high-technology Material Recovery Facilities (MRFs) with optical-sensors and robot-arms that detect and push the organics-specific specialty bags onto a conveyor that sends it for further preprocessing before being taken to an area composting facility. This is even specifically noted in the *only* waste district where this is piloting:

"How are the bags going to be sorted from the trash?"
Robotic sorting technology will be used to separate the bags from the trash. Robotics have been used successfully for this purpose in other locations. [Ramsey/Washington Recycling & Energy 2023]

Not to mention that *rollout is only beginning this year* (2023), meaning that it was neither a common nor feasible practice worthy of suggestion by the consultancy team running the Climate Action Plan development (ibid). The only evidence for prior piloting of such a program comes from the mention of a 2016 pilot conducted in partnership with Randy's Environmental Services, which simple web search reveals was acquired, since then, by Republic Services, who do not offer organics services in the Randy's service area, even though that area is within reasonable driving distance of the MRF where such mixed-waste loads would need to be taken (City of Osseo 2016, Republic Services 2023). According to reporting, Ben Knudson, Hennepin County Minnesota's waste reduction and recycling supervisor suggests that:

"[O]ut of the 44 local governments in the county collecting organics, he isn't aware of any that collect their food and yard waste together. The vast majority use separate carts for these streams, though a small (and potentially shrinking) number use bags of a specific color to co-collect organics with MSW. [Waste Dive 2022]

By comparison, the MCSWMD's updated 5-Year Plan addresses community waste issues by prioritizing Education and Waste Reduction goals over and above its emphasis on Diversion (MCSWMD 2021). EarthKeepers agrees that this is wise: overproduction of waste is the upstream crisis that is in need of resolution; focusing on how and where we truck that waste is downstream-thinking and misses the point on the nature of the crisis while also missing the mark in terms of cost-savings: *reducing* organic waste is the most environmentally impactful and what helps commercial & household wallets. To create more waste diversion programs – without investing significant public finance into a multi-year educational and training campaign – is to continue using local policy to engineer a moral hazard for commercial clients and residents by essentially saying "Sure, throw out as much as you like; we won't ask you to think about it."

Further, where the MCSWMD's 5-Year Plan *does* address Diversion planning, it recognizes the priority of educational initiatives around Diversion guidelines, information-outreach needed to expand the compost end-user market, and increased data collection on contamination issues affecting current diversion programs [ibid]. Specifically:

1. Diversion Education
Both recycling and composting require clear guidance and adherence to best practices to ensure a successful end result. The district can provide business and residents with easily accessible, streamlined resources to explain these practices and the importance of following them. Digital and printable versions of accepted materials, contamination control, home composting, and food waste diversion guides will help residents divert their waste reliably and minimize land-filled material. [ibid]

4. Expand Compost End-User Market
Advancing the widespread diversion of organics to the composting stream will not be possible without planning for the finished compost that is produced as a result. The district can reach out to public and private sector parties who can incorporate high volume compost application into their SOP for uses like back fill, public space landscaping, erosion control, and others to

develop a market that makes large-scale composting a viable industry. [ibid]

5. Increase Available Data on Diversion Performance and Contamination Rates/Losses
Because recycling data is not closely tracked or widely available, the efficacy of management practices is difficult to analyze. The district should work with the Association of Indiana Solid Waste Management District's, the Indiana Department of Environmental Management, and the State legislature, to lobby for improved reporting requirements on all waste streams which would provide better insight into developing optimal practices, and better means of evaluating their results in the long term. [ibid]

The significance of Contamination cannot be overstated and is a substantial risk to any facility that receives recyclable waste, either conventional or organic. EarthKeepers is highly supportive of the concept of Waste-to-Energy and of the City's investigation of how its wastewater treatment plant can be updated to run more efficiently through the capture and biodigestation of fats, oils, and greases (FOGs) and local brewery waste that can enter the current water system. However, we humbly offer our most sincere concern and dire warning that seeking to create a biodigester system that relies both on our wastewater solids and a 5-county area's worth of compostable waste is an invitation to a crisis larger than those experienced, above, in Madison, Wisconsin. For Madison's case, at least it was just their municipal and campus food scraps pilots that had to be shelved. For Bloomington, if the wastewater treatment plant that treats our sewer solids must also attempt to capture and treat 5 counties worth of organic waste, a contamination-based facility failure would affect 5 counties worth of people, logistical systems, and our city's sewer solids. Nobody wants the toilet clogged. A contamination-based facility failure is not simple speculation; it has actually occurred in Monroe County at the former Green Earth composting facility in 2018 because of Contamination in Indiana University's original composting pilot, documented in a televised MCSWMD meeting [MCSWMD 2019].

Based on our research and 5 years of experience in the local commercial and residential organics diversion markets, EarthKeepers believes that this type of consolidated system engineers a single-point-of-failure that increases the scale and cost of risk in the entire system of organics collection, processing, and compost distribution. EarthKeepers, instead, proposes that the City of Bloomington and Monroe County governments partner with the Monroe County Solid Waste Management District and the Monroe County Soil & Water Conservation District to work with area farmers and landowners to develop a multi-site "distributed system" that is more robust in the face of potential failures, with a design where several facilities in the system can make-up the difference if one facility in the network goes down. This is no more of a stretch-goal than is the current speculation that the City would create stable, contractual relationships with enough farmers to distribute the estimated 600 acres worth of Class B biosolids that would be created from biodigesting our current sewer solids, alone, not to mention the vast increase in acreage needed if organic waste was imported from a 5-county area. A local network to robustly process local organic waste – with both lower infrastructure development costs and lower risk – may be more suited to local goals, local needs, and local values.

Planning and forging partnerships around commercial consulting, community education, and

kitchen operator training is the foundational next step. Institutionalizing collaborative partnerships inherently requires careful cultivation and consistent maintenance of relationships among leaders within and across multiple sectors. EarthKeepers' goal has been to leverage the nucleic collaboration between EarthKeepers and Fable Farms Indiana to form an apparatus of overlapping, cross-sector partnerships for the advancement of a **Culture of Compost** – *that is, the policies, markets, and behavioral norms a community shares around organic waste management that consistently provide incentives for individual behaviors to benefit collective goals*. Hence, the mission is a mode of Policy Entrepreneurship that leads by identifying dispersed assets and aligning their incentives through proven research, to link and leverage them for mutual gains [Mintrom 1997, Ostrom 2005, Arnold 2020].

Deliberate institutional development through the cultivation of an overlapping network of partnerships can create a county-wide organics waste management apparatus that bridges community needs identified by local government leadership with economic development imperatives facing commercial bottom-lines. Identifying and articulating the intersecting incentives for both the public good of the community and the private benefit of individual market actors can help to bring alignment among the market of policy ideas and the market of organics waste management services, conferring long-term prospects for synergies among private investments and public policymaking, furthering both economic and democratic development in Bloomington and Monroe County.

Partner education, policy advocacy, client consultancy, and staff training have been core modalities of project implementation, given that the main barrier to institutional development in the organics space is a lack of actionably collated information. Research exists on the economics of organic waste, on policy frameworks for addressing organic waste, and on the psychology of behavioral change, meaning that the information is out there, waiting to be found, combined, and applied in-context. Technical assistance, then, has been core to this project and to demonstrating commitment and leadership in the organics space: to attract the participation of corporate clients, the econometric case had to be demonstrated; to maintain corporate client performance, staff trainings have been mandatory; to encourage the development of local policymaking, the public & environmental benefit case has had to be demonstrated; and, to maintain a high-efficiency, high-precision business model, our team is continuously reminded of these cases while all operational training is delivered in the context of the whole system's functioning, in pursuit of the community mission.

EarthKeepers is grateful to the City of Bloomington and the area businesses and residents that support the development of the local organic waste recycling market. To advance education and training around this market, EarthKeepers representatives remain on the Board of Directors of the Bloomington Economic Development Corporation, Champion members of Downtown Bloomington Inc., and fulfill a statutory advisory role on the Citizens Advisory Committee to the Board of Directors of the Monroe County Solid Waste Management District. We are grateful to all of these organizations for their work for the Bloomington and Monroe County community.

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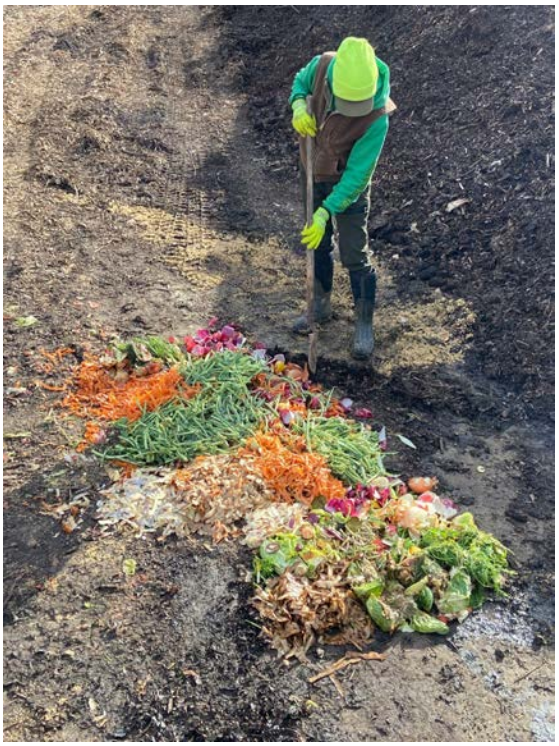
Audits




Restaurant 1 - Audit & Contamination Sample, Week 2



Restaurant 2 - Audit & Contamination Sample, Week 3

Restaurant 2 - Audit & Contamination Samples, Week 6 (left), Week 7 (middle), Week 8 (right)

Restaurant 3 - Audit Week 3 (top). EarthKeepers bucket accidentally melted in the kitchen. Week 5 (bottom). Organics bin was filled with yard waste.

Restaurant 4 - Audis, Week 2 & Week 3

Restaurant 4 - Audit & Contamination Sample, Week 3 and Week 4

FARMbloomington - Initial set-up in alley; bungies secure roller lids closed and discourage people from using them as trash cans (top-left); Farm joined the Green Business Network (top-right). During September, a new gate was installed to keep recycling and compost rollers secured (bottom-left). FARMbloomington also made signage for their staff (bottom-right).

Restaurant 5 - Audits Week 2, Week 3, Week 4. Use of certified compostable sauce containers (bottom-center)

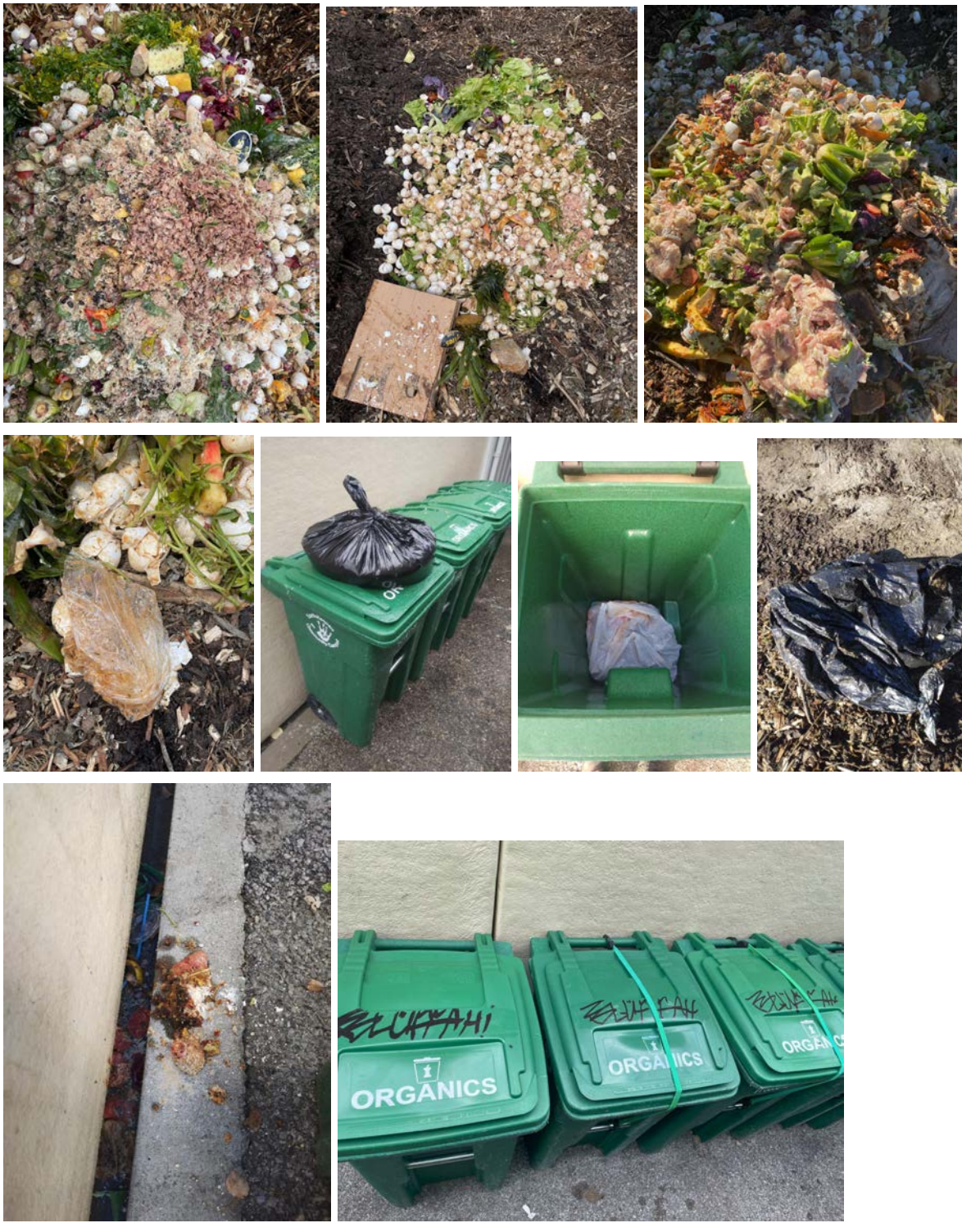






Restaurant 6 - Set up in the alley with 6 rollers collected at least 4 times per week. Regular disposal of greasy liquid (presumably not from the fryer).

Restaurant 6 - Audits, week 3 and week 4. Mostly paper products, lettuce and chicken wing bones.

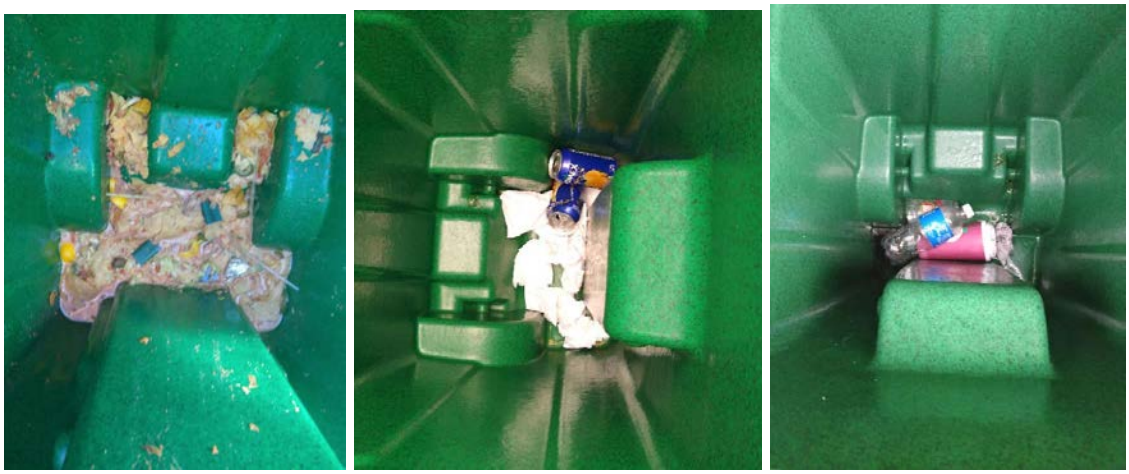


Restaurant 7 - Audits, week 3 and week 4 (top). Repeated contamination with plastic liners, presumably from the dish washing area (middle). Spilled food on the ground in the alley (bottom-left); rollers were graffitied in October (bottom-right).

Restaurant 8. Plastic contaminant (left). Recurring spills on the alley (middle). Use of safety cones to park on Walnut and load full rollers (right).

Restaurant 9. Audits, Week 2 and Week 4 (left and middle). Neglected roller, left open, filled with rain water and contaminants (right)

Restaurant 10. Audits and contamination samples for Week 1, Week 2, Week 3 (top). Overflowing roller with contaminant (bottom-left). Large dumpster area in a room accessed through the alley, good signage (bottom-right).



Restaurant 11. Rollers were frequently filled with trash (top). Audits, Week 1, Week2 and Week 3.

Restaurant 12. Audits Week 1 and Week 2. Egg shells and flour bags are discarded every Thursday after weekly dough preparation.

Restaurant 13. Audit, Week 2 (left). Dumpster corral was frequently blocked by vehicles of apartment tenants (right).

Restaurant 14. Audits Week 1 and Week 2 (top). Repeated tossing of vegetables with twist ties (bottom).

Restaurant Impact Reports

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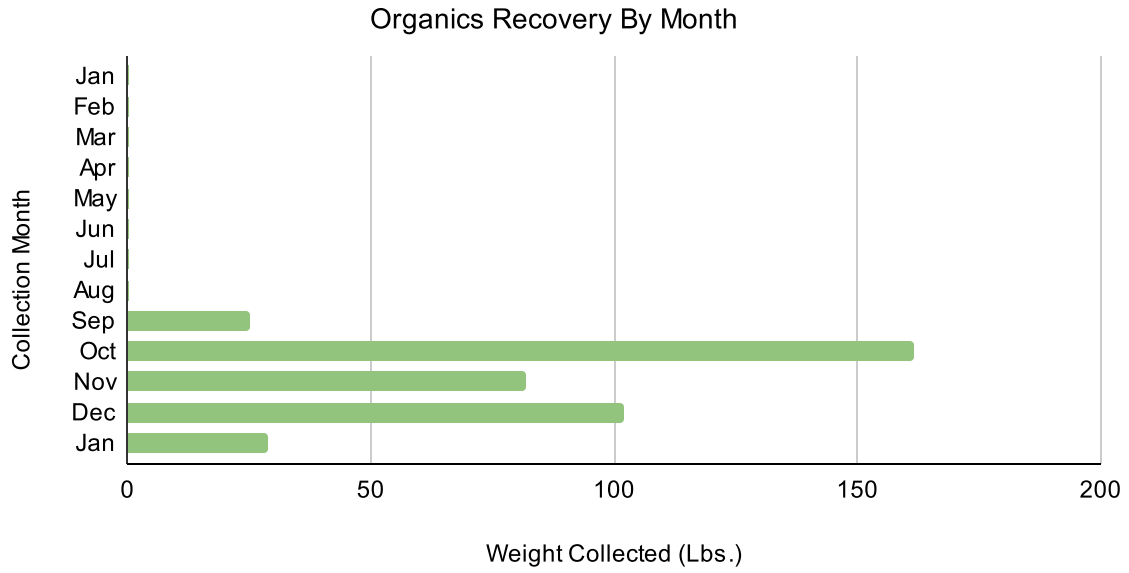
Baked! Composting Impact Report, Compost Up, Downtown Program

During the Compost Up, Downtown Program, Baked! diverted a total of 400 lbs (0.20 tons) of organic waste from the landfill with EarthKeepers Compost. By composting these materials, local landfill methane emissions were reduced by 0.05 tons, equivalent to 1.14 metric tons of CO2 emissions.

This greenhouse gas reduction is equivalent to preventing 128 gallons of gasoline from being consumed, or eliminating 0.2 home's electricity consumption for one year. It is also the equivalent amount of carbon sequestered by 0.1 acres of U.S. forests in one year. (source: EPA greenhouse gas equivalences calculator)

The figure below shows the breakdown of organics collected at Baked! during each month of the program



We apprecate your commitment to keeping organics out of the landfill, and thank you for your support in 2022!

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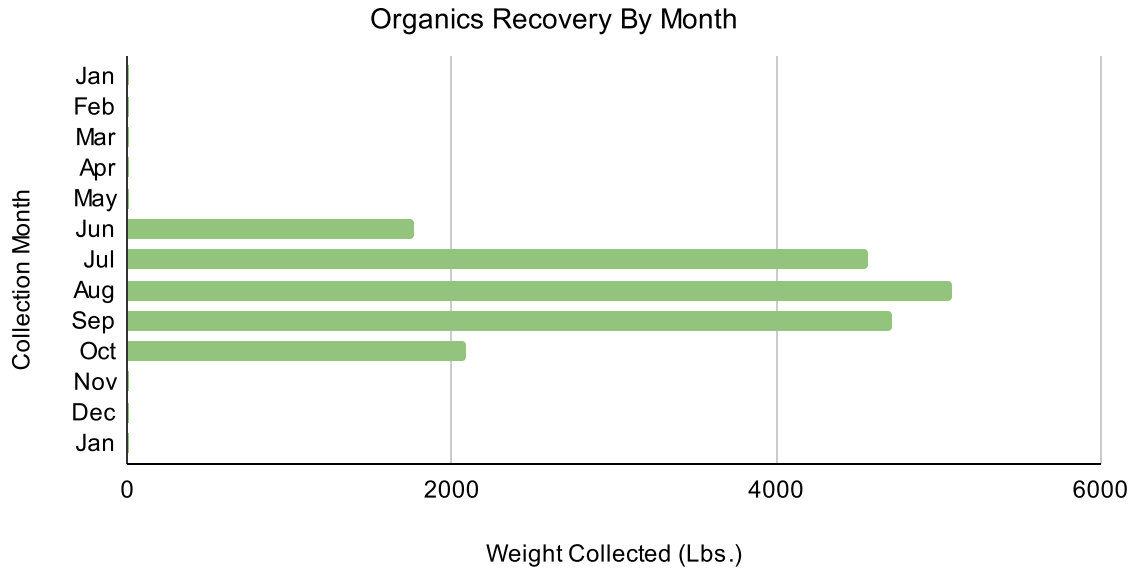
BuffaLouies Composting Impact Report, Compost Up, Downtown Program

During the Compost Up, Downtown Program, BuffaLouies diverted a total of 18,207 lbs (9.10 tons) of organic waste from the landfill with EarthKeepers Compost. By composting these materials, local landfill methane emissions were reduced by 2.28 tons, equivalent to 51.66 metric tons of CO2 emissions.

This greenhouse gas reduction is equivalent to preventing 5,813 gallons of gasoline from being consumed, or eliminating 10.1 home's electricity consumption for one year. It is also the equivalent amount of carbon sequestered by 6.1 acres of U.S. forests in one year. (source: EPA greenhouse gas equivalences calculator)

The figure below shows the breakdown of organics collected at BuffaLouies during each month of the program



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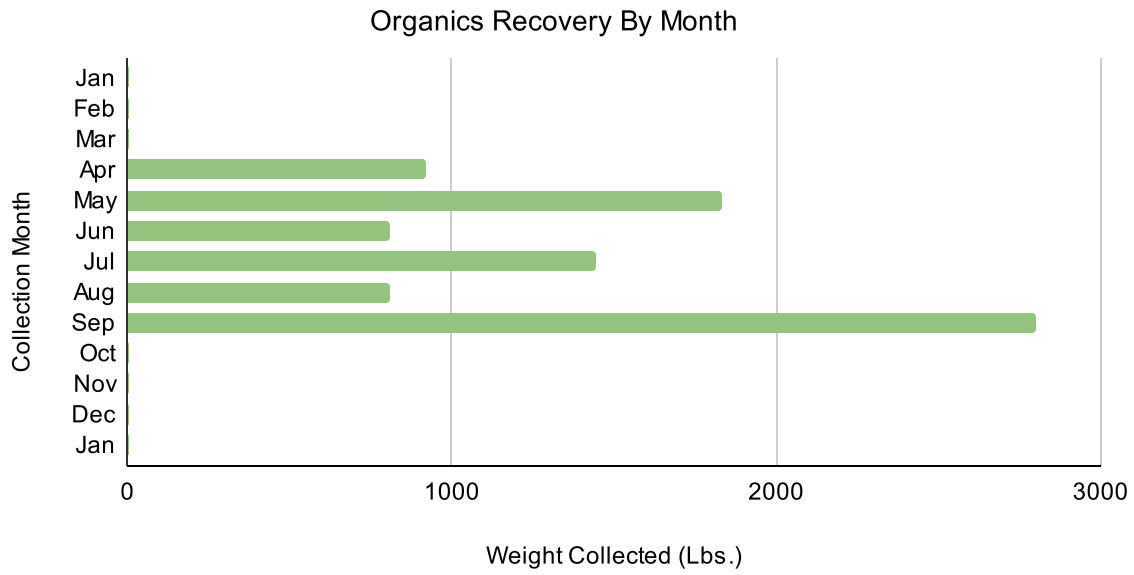
Convention Center Composting Impact Report, Compost Up, Downtown Program

During the Compost Up, Downtown Program, Convention Center diverted a total of 8,624 lbs (4.31 tons) of organic waste from the landfill with EarthKeepers Compost. By composting these materials, local landfill methane emissions were reduced by 1.08 tons, equivalent to 24.47 metric tons of CO2 emissions.

This greenhouse gas reduction is equivalent to preventing 2,754 gallons of gasoline from being consumed, or eliminating 4.8 home's electricity consumption for one year. It is also the equivalent amount of carbon sequestered by 2.9 acres of U.S. forests in one year. (source: EPA greenhouse gas equivalences calculator)

The figure below shows the breakdown of organics collected at Convention Center during each month of the program



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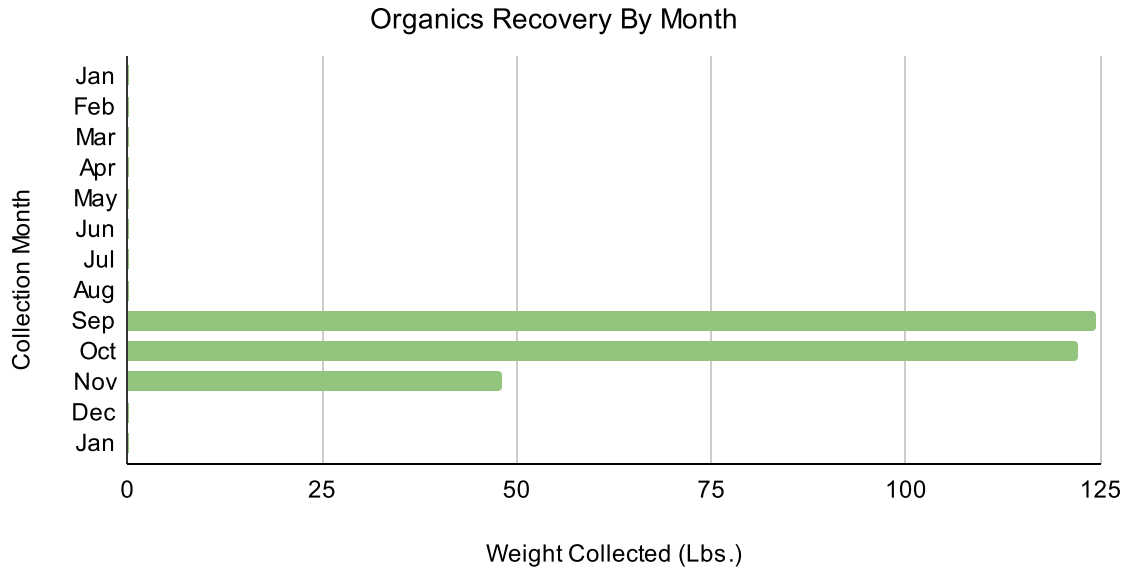
Crazy Horse Composting Impact Report, Compost Up, Downtown Program

During the Compost Up, Downtown Program, Crazy Horse diverted a total of 294 lbs (0.15 tons) of organic waste from the landfill with EarthKeepers Compost. By composting these materials, local landfill methane emissions were reduced by 0.04 tons, equivalent to 0.84 metric tons of CO2 emissions.

This greenhouse gas reduction is equivalent to preventing 94 gallons of gasoline from being consumed, or eliminating 0.2 home's electricity consumption for one year. It is also the equivalent amount of carbon sequestered by 0.1 acres of U.S. forests in one year. (source: EPA greenhouse gas equivalences calculator)

The figure below shows the breakdown of organics collected at Crazy Horse during each month of the program



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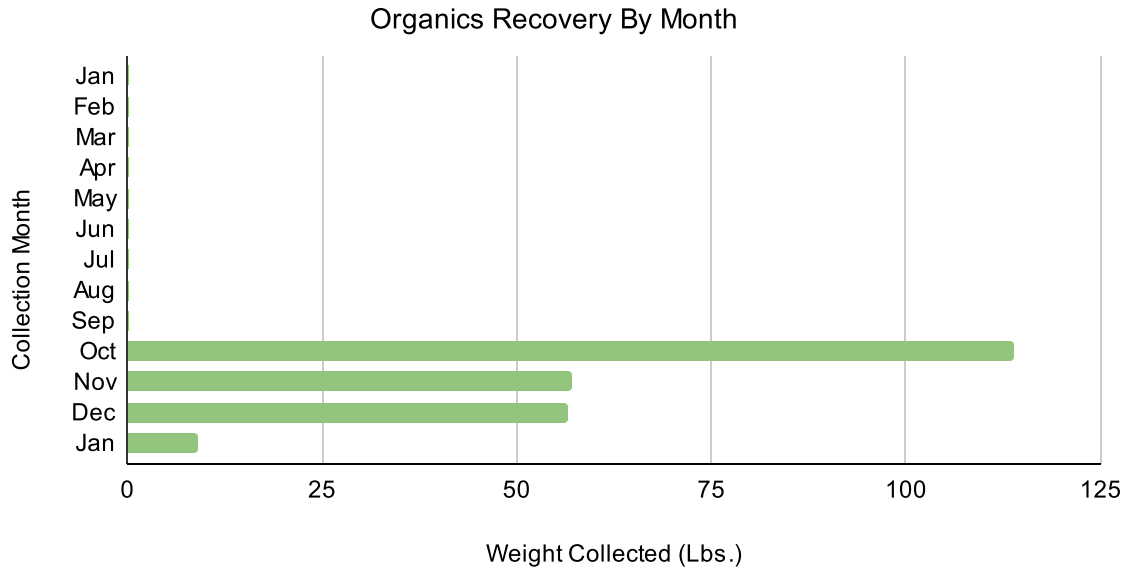
Cup & Kettle Composting Impact Report, Compost Up, Downtown Program

During the Compost Up, Downtown Program, Cup & Kettle diverted a total of 237 lbs (0.12 tons) of organic waste from the landfill with EarthKeepers Compost. By composting these materials, local landfill methane emissions were reduced by 0.03 tons, equivalent to 0.67 metric tons of CO2 emissions.

This greenhouse gas reduction is equivalent to preventing 76 gallons of gasoline from being consumed, or eliminating 0.1 home's electricity consumption for one year. It is also the equivalent amount of carbon sequestered by 0.1 acres of U.S. forests in one year. (source: EPA greenhouse gas equivalences calculator)

The figure below shows the breakdown of organics collected at Cup & Kettle during each month of the program



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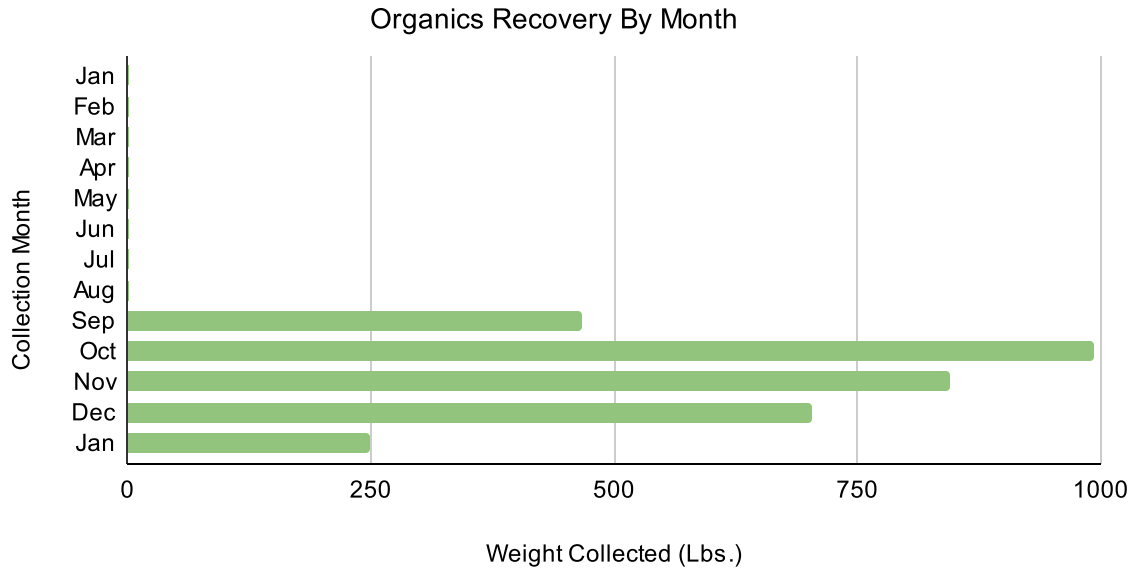
DaVinci's Composting Impact Report, Compost Up, Downtown Program

During the Compost Up, Downtown Program, DaVinci's diverted a total of 3,259 lbs (1.63 tons) of organic waste from the landfill with EarthKeepers Compost. By composting these materials, local landfill methane emissions were reduced by 0.41 tons, equivalent to 9.25 metric tons of CO2 emissions.

This greenhouse gas reduction is equivalent to preventing 1,041 gallons of gasoline from being consumed, or eliminating 1.8 home's electricity consumption for one year. It is also the equivalent amount of carbon sequestered by 1.1 acres of U.S. forests in one year. (source: EPA greenhouse gas equivalences calculator)

The figure below shows the breakdown of organics collected at DaVinci's during each month of the program



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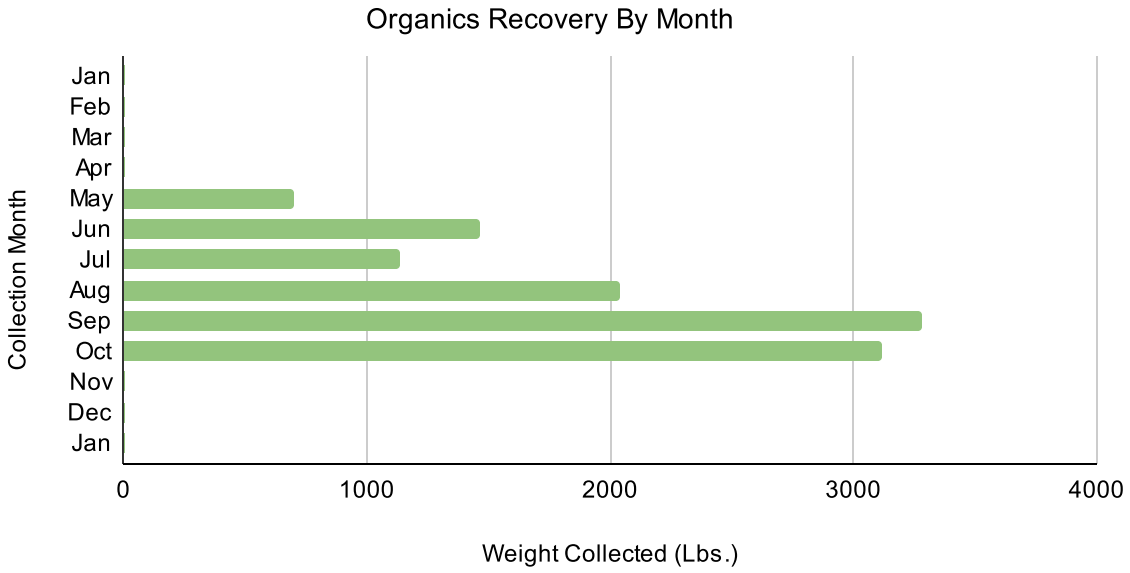
Farm Composting Impact Report, Compost Up, Downtown Program

During the Compost Up, Downtown Program, Farm diverted a total of 11,746 lbs (5.87 tons) of organic waste from the landfill with EarthKeepers Compost. By composting these materials, local landfill methane emissions were reduced by 1.47 tons, equivalent to 33.33 metric tons of CO2 emissions.

This greenhouse gas reduction is equivalent to preventing 3,750 gallons of gasoline from being consumed, or eliminating 6.5 home's electricity consumption for one year. It is also the equivalent amount of carbon sequestered by 3.9 acres of U.S. forests in one year. (source: EPA greenhouse gas equivalences calculator)

The figure below shows the breakdown of organics collected at Farm during each month of the program



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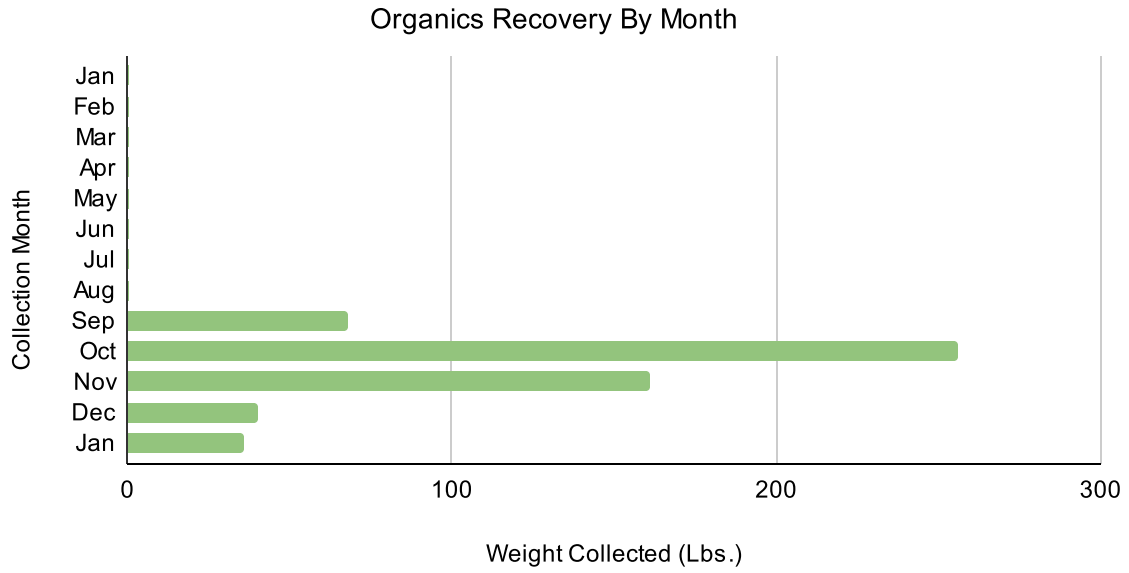
InBloom Composting Impact Report, Compost Up, Downtown Program

During the Compost Up, Downtown Program, InBloom diverted a total of 561 lbs (0.28 tons) of organic waste from the landfill with EarthKeepers Compost. By composting these materials, local landfill methane emissions were reduced by 0.07 tons, equivalent to 1.59 metric tons of CO2 emissions.

This greenhouse gas reduction is equivalent to preventing 179 gallons of gasoline from being consumed, or eliminating 0.3 home's electricity consumption for one year. It is also the equivalent amount of carbon sequestered by 0.2 acres of U.S. forests in one year. (source: EPA greenhouse gas equivalences calculator)

The figure below shows the breakdown of organics collected at InBloom during each month of the program



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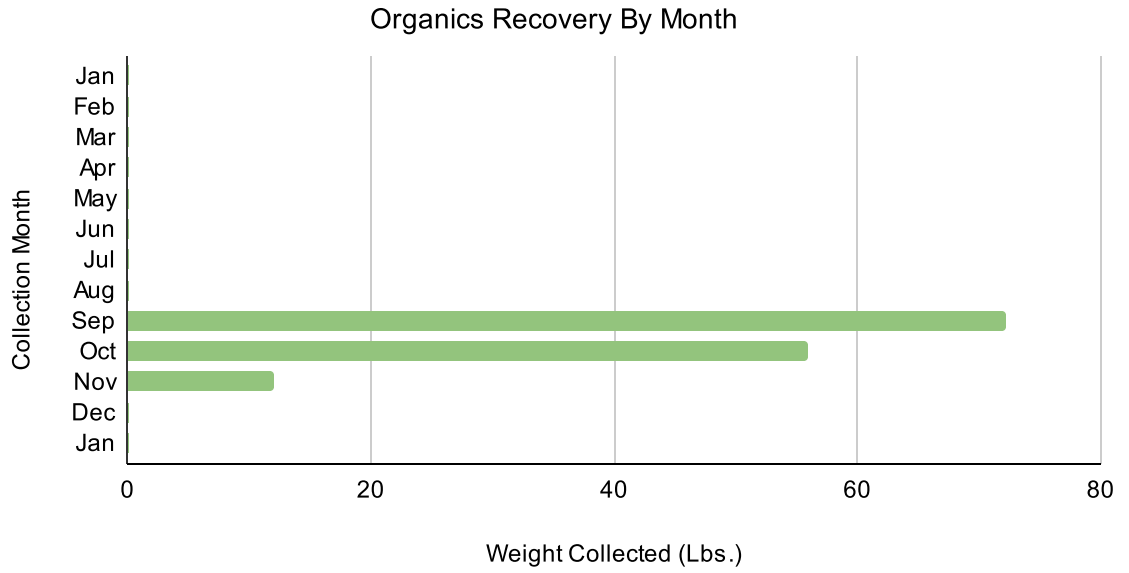
Juannitas Composting Impact Report, Compost Up, Downtown Program

During the Compost Up, Downtown Program, Juannitas diverted a total of 140 lbs (0.07 tons) of organic waste from the landfill with EarthKeepers Compost. By composting these materials, local landfill methane emissions were reduced by 0.02 tons, equivalent to 0.40 metric tons of CO2 emissions.

This greenhouse gas reduction is equivalent to preventing 45 gallons of gasoline from being consumed, or eliminating 0.1 home's electricity consumption for one year. It is also the equivalent amount of carbon sequestered by 0.0 acres of U.S. forests in one year. (source: EPA greenhouse gas equivalences calculator)

The figure below shows the breakdown of organics collected at Juanitas during each month of the program



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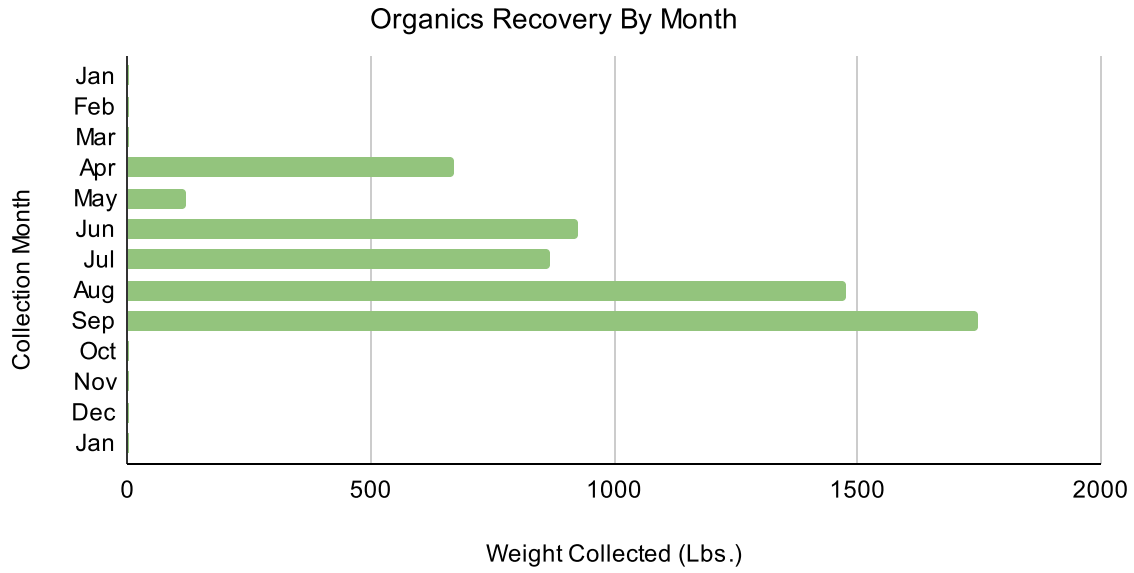
Nicks-Osteria Composting Impact Report, Compost Up, Downtown Program

During the Compost Up, Downtown Program, Nicks-Osteria diverted a total of 5,811 lbs (2.91 tons) of organic waste from the landfill with EarthKeepers Compost. By composting these materials, local landfill methane emissions were reduced by 0.73 tons, equivalent to 16.49 metric tons of CO2 emissions.

This greenhouse gas reduction is equivalent to preventing 1,855 gallons of gasoline from being consumed, or eliminating 3.2 home's electricity consumption for one year. It is also the equivalent amount of carbon sequestered by 2.0 acres of U.S. forests in one year. (source: EPA greenhouse gas equivalences calculator)

The figure below shows the breakdown of organics collected at Nicks-Osteria during each month of the program



We apprecate your commitment to keeping organics out of the landfill, and thank you for your support in 2022!

- The EarthKeepers

EarthKeepers
Bloomington Compost

contact@earthkeeperscompost.com

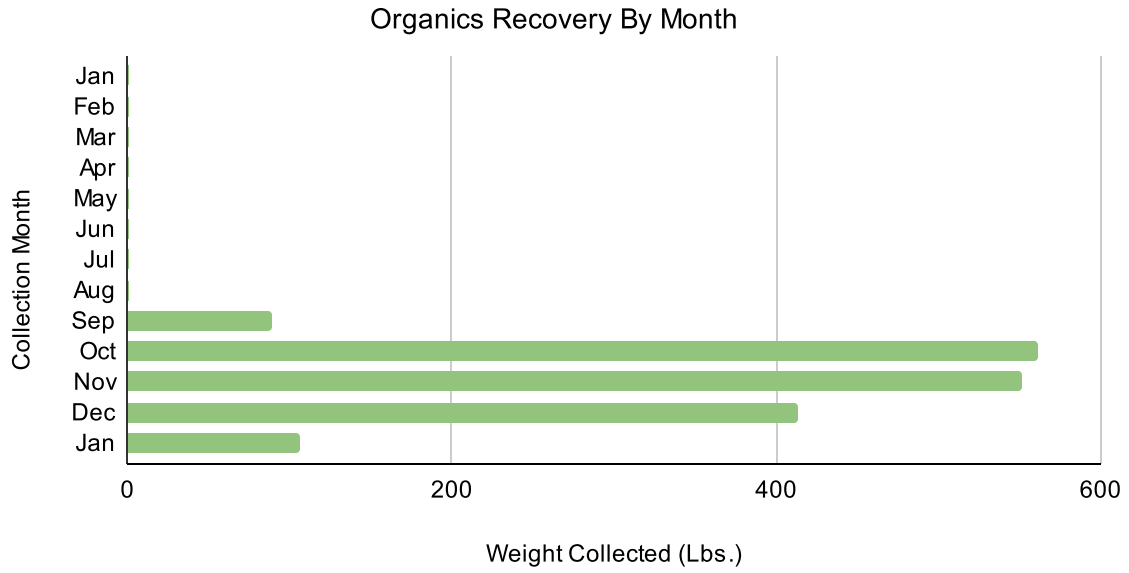
(812) 269-8200

Pili's Party Taco & Deli Composting Impact Report, Compost Up, Downtown Program

During the Compost Up, Downtown Program, Pili's diverted a total of 1,720 lbs (0.86 tons) of organic waste from the landfill with EarthKeepers Compost. By composting these materials, local landfill methane emissions were reduced by 0.22 tons, equivalent to 4.88 metric tons of CO2 emissions.

This greenhouse gas reduction is equivalent to preventing 549 gallons of gasoline from being consumed, or eliminating 1.0 home's electricity consumption for one year. It is also the equivalent amount of carbon sequestered by 0.6 acres of U.S. forests in one year. (source: EPA greenhouse gas equivalences calculator)

The figure below shows the breakdown of organics collected at Pili's during each month of the program



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- The EarthKeepers

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Bloomington Compost

contact@earthkeeperscompost.com

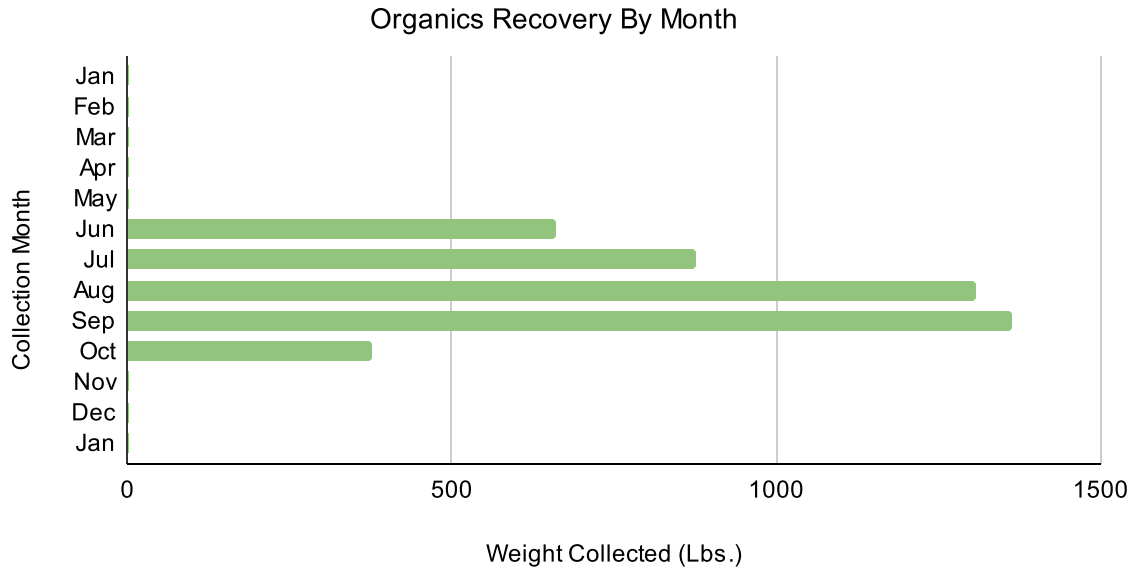
(812) 269-8200

Soul Juice Composting Impact Report, Compost Up, Downtown Program

During the Compost Up, Downtown Program, Soul Juice diverted a total of 4,587 lbs (2.29 tons) of organic waste from the landfill with EarthKeepers Compost. By composting these materials, local landfill methane emissions were reduced by 0.57 tons, equivalent to 13.02 metric tons of CO2 emissions.

This greenhouse gas reduction is equivalent to preventing 1,465 gallons of gasoline from being consumed, or eliminating 2.5 home's electricity consumption for one year. It is also the equivalent amount of carbon sequestered by 1.5 acres of U.S. forests in one year. (source: EPA greenhouse gas equivalences calculator)

The figure below shows the breakdown of organics collected at Soul Juice during each month of the program



We apprecate your commitment to keeping organics out of the landfill, and thank you for your support in 2022!

- The EarthKeepers

EarthKeepers
Bloomington Compost

contact@earthkeeperscompost.com

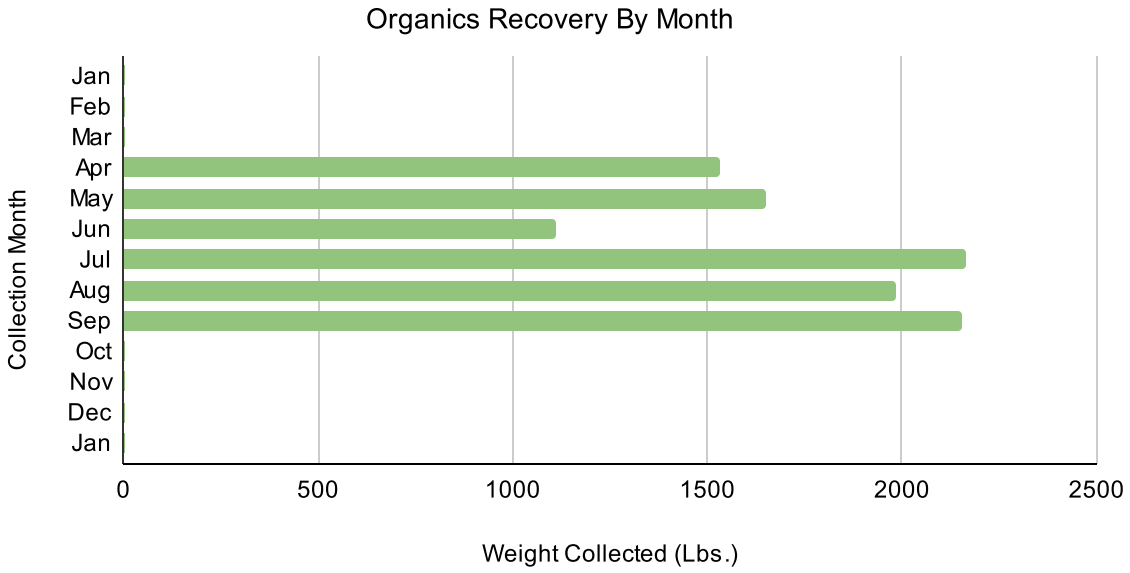
(812) 269-8200

Southern Stone Composting Impact Report, Compost Up, Downtown Program

During the Compost Up, Downtown Program, Southern Stone diverted a total of 10,605 lbs (5.30 tons) of organic waste from the landfill with EarthKeepers Compost. By composting these materials, local landfill methane emissions were reduced by 1.33 tons, equivalent to 30.09 metric tons of CO2 emissions.

This greenhouse gas reduction is equivalent to preventing 3,386 gallons of gasoline from being consumed, or eliminating 5.9 home's electricity consumption for one year. It is also the equivalent amount of carbon sequestered by 3.6 acres of U.S. forests in one year. (source: EPA greenhouse gas equivalences calculator)

The figure below shows the breakdown of organics collected at Southern Stone during each month of the program



We apprecate your commitment to keeping organics out of the landfill, and thank you for your support in 2022!

- The EarthKeepers

EarthKeepers
Bloomington Compost

contact@earthkeeperscompost.com

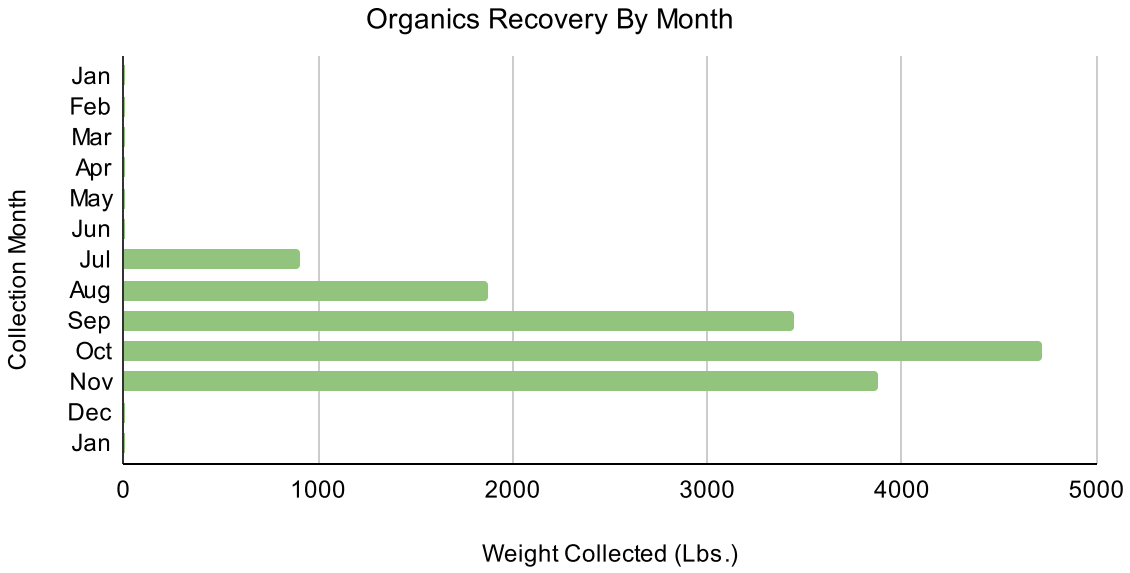
(812) 269-8200

Uptown Cafe Composting Impact Report, Compost Up, Downtown Program

During the Compost Up, Downtown Program, Uptown Cafe diverted a total of 14,822 lbs (7.41 tons) of organic waste from the landfill with EarthKeepers Compost. By composting these materials, local landfill methane emissions were reduced by 1.85 tons, equivalent to 42.06 metric tons of CO2 emissions.

This greenhouse gas reduction is equivalent to preventing 4,732 gallons of gasoline from being consumed, or eliminating 8.2 home's electricity consumption for one year. It is also the equivalent amount of carbon sequestered by 5.0 acres of U.S. forests in one year. (source: EPA greenhouse gas equivalences calculator)

The figure below shows the breakdown of organics collected at Uptown Cafe during each month of the program



We apprecate your commitment to keeping organics out of the landfill, and thank you for your support in 2022!

- The EarthKeepers

Supplement 1: Participant Interview Summary

Lacey Lingelbach

Sustainability Fellow,

Economic and Sustainable Development Department

City of Bloomington, IN

Over the last month, all participants in the Compost Up program were contacted for a follow-up interview. Three interviews took place for four of the participating businesses. This represents twenty-five percent of the sixteen participating businesses. The participants that provided feedback included managers from Buffalouies, Nick's English Hut, Osteria Rago, and FARM Bloomington. Each interview is summarized below.

Buffalouies

Buffalouies participated in the program because they had been waiting for the right time to work with EarthKeepers and the grant provided them this opportunity. The general manager was heavily involved in implementing the program. They started the Compost Up program with five composting containers. During the three months, the program was overall successful at reducing waste, especially since so much of it comes from the use of paper products. The staff was happy with the program and the customer service provided by EarthKeepers.

However, Buffalouies experienced issues once the Compost Up grant ended and they signed on to continue the subscription. This timing coincided with the beginning of classes in the fall when business picks up and staff grows. Managers found it difficult to train all the new staff of part-time employees while business was hectic. Due to this lag in training, they found that there was less buy-in from staff for the program as non-compostable items were thrown into the compost bins. Also, it became more difficult to find the time to sort through items especially as the scale of composting increased. Moreover, pricing became a concern with the scale of composting because they found no evidence that the cost of trash service downsized. Instead, they were losing money from switching to products that are compostable and cost more, such as sauce cups and container boxes.

Despite ending the service, they are looking to revisit the program again in the spring or summer when business slows down. They are hoping to find the time to reconsider capacity needs and habit changes to successfully implement a scaled up composting program.

Nick's English Hut and Osteria Rago

Since the owners of Nick's and Osteria Rago are the same, they started the Compost Up program for both businesses at the same time. The owners, who have been composting for a

long time in their personal lives, thought Compost Up was a great opportunity for their businesses to get involved in food waste reduction efforts. The general managers at both restaurants oversaw the program in coordination with the kitchen manager.

Overall, they found the program was really successful at reducing waste as well as teaching staff about the importance of composting. Staff adjusted to the program pretty easily after working out some communication. Since then, non-compostable items are rarely, if ever, found in the compost bin. Staff thought EarthKeepers was very professional and timely in their communications, billing, and pick-ups. They found the waste analytics provided through the service useful and insightful. Lastly, they noted that the three months paid for by the grant provided enough time to train behaviors and get the program going.

Their main challenges with the program included adjusting waste habits and space constraints. They had to get their staff to adjust the frequency of taking out the compost containers to the bins outside as they filled up more over time. Additionally, they have had problems with adding more compost vessels as their kitchen area is tight. This space constraint is also one of the main reasons they are only composting scraps from the kitchen. There is little space for containers in the dining areas that could be used for plate scraps.

Despite these challenges, Nick's and Osteria have continued their subscription since the end of the Compost Up grant. They felt like operating the program was doable and worth it for the sake of sustainability. While they did not see a reduction in waste fees from participation, they believe the cost of service is reasonable. Additionally, they wanted to help support another local business that has values that match their values.

FARM Bloomington

FARM Bloomington participated in the grant program to start integrating green restaurant initiatives into their operations. The program was overseen by the service manager with help from the kitchen manager. They compost both pre- and post-consumption food scraps. Overall, they gave a positive review of the program. Their interior bins were kept pretty clean and rarely had cross-contaminated waste streams. Staff adjusted to the program well, especially because they used compostable products that made it easy to discard food waste. Staff also liked EarthKeepers because they provided reasonable pickup frequency, maintained easy and timely communication, and accommodated the managers request for changes or help with the program. Moreover, the staff found the waste analytics very useful and insightful, especially when right-sizing their orders. For instance, FARM Bloomington adjusted their purchases of bread after noting the sizable discarding of bread in their compost.

Similar to Buffalouies, Nick's, and Osteria Rago, FARM Bloomington experienced challenges with space constraints and adjusting frequency of dumping containers into bins. Additionally, they noted that the external bins were difficult to maintain as some staff from the Root Cellar would throw non-compostable items in there. Lastly, they said that they did not see any

decrease in trash costs, but that is likely because the trash receptacles are shared with other nearby businesses.

Nonetheless, FARM Bloomington continued their subscription after the grant program because they want to achieve green restaurant status and have found it useful in educating staff on sustainability.

Key Takeaways from Interviews

The following bullets highlight the key takeaways discovered through these follow-up interviews with participants.

Positive Feedback about the Compost Up Program

- Participants were excited to partake in a program that would help achieve business and city-wide sustainability goals.
- Program helped reduce food waste for all participants.
- Program was useful for educating staff and participants on waste reduction efforts.
- Staff was relatively happy and okay to adjust behaviors to participate in the program.
- EarthKeepers received high praise for providing services and interacting with program participants.
- Participants liked the waste analytics provided by EarthKeepers.
- Participants thought the 3-month grant period was enough time to train staff and get the program started.

Challenges Experienced during the Compost Up Program

- All participants experienced limitations in the amount composted due to the space needed to store containers and bins.
- All participants experienced challenges in adjusting waste behaviors of staff to more frequently take out waste and to make compostable products placed in the compost vessels.
- None of the participants found evidence that composting reduced the price they pay for trash receptacles and services.
- Some participants experienced challenges scaling up the composting when business was in peak season.
- Some participants experience challenges with finding time to train new staff during times of turnover and peak season.

Suggestions for Improving the Compost Up Program or Other Waste Diversion Programs

- Identify a new metric to measure the financial benefit for program participation that could encourage participation from businesses that are not sustainability-focused.

- Make sure the program is timed so that businesses that are affected by the academic year season will have less issues in adjusting and scaling up their programs.
- Create a circular program that provides free or reduced price compost to participating businesses so that staff or businesses can learn how to use it and see the end product of the process.
- Recommend participating businesses consider switching to compostable products to make it easier to discard plate scrapes.
- Marketing of the program should focus on the connection between food waste reduction and the level of greenhouse gas emissions.
- Increase marketing of the program through the Bloomington Chamber of Commerce or the Downtown Bloomington, Incorporated associations.
- Continue to support EarthKeepers as a business by giving them more grants to expand their operations or providing marketing assistance to help them advertise their services.
- Consider creating a recycling education or assistance program for downtown businesses who are having difficulty discarding cardboard from space limitations.

COMPOST UP DOWN TOWN

EarthKeepers Bloomington Compost

CITY OF BLOOMINGTON
ECONOMIC AND SUSTAINABLE DEVELOPMENT

Reducing Restaurant Food Waste:
Business Case – Operations – Education

EarthKeepers Report to City Council
August 2nd 2023

BACKGROUND


ORGANICS ONLY
T1 568357
ORGANICS ONLY
T0 767745
ORGANICS ONLY
T1 568341
ORGANICS ONLY
T1 568377
ORGANICS ONLY
T0 767740
ORGANICS ONLY
T1 568362

2 YEARS OF COVID

Food services hit hard — and the hits kept coming

New health regulations forced local food business owners to rethink everything.

Laura Lane, Dustin Dopirak and Carol Kugler, The Herald-Times

Published 12:24 pm UTC Mar. 7, 2022 | **Updated 12:24 pm UTC Mar. 7, 2022**

Restaurants and other food businesses took a hard and immediate hit when COVID-19 reached Indiana two years ago. Short-term closures were followed by seating limits, many procedural changes and a shift to more carryout and online sales. While the restrictions have eased, many of the businesses that survived are still struggling with supply chain issues and staff is much harder to hire and keep.

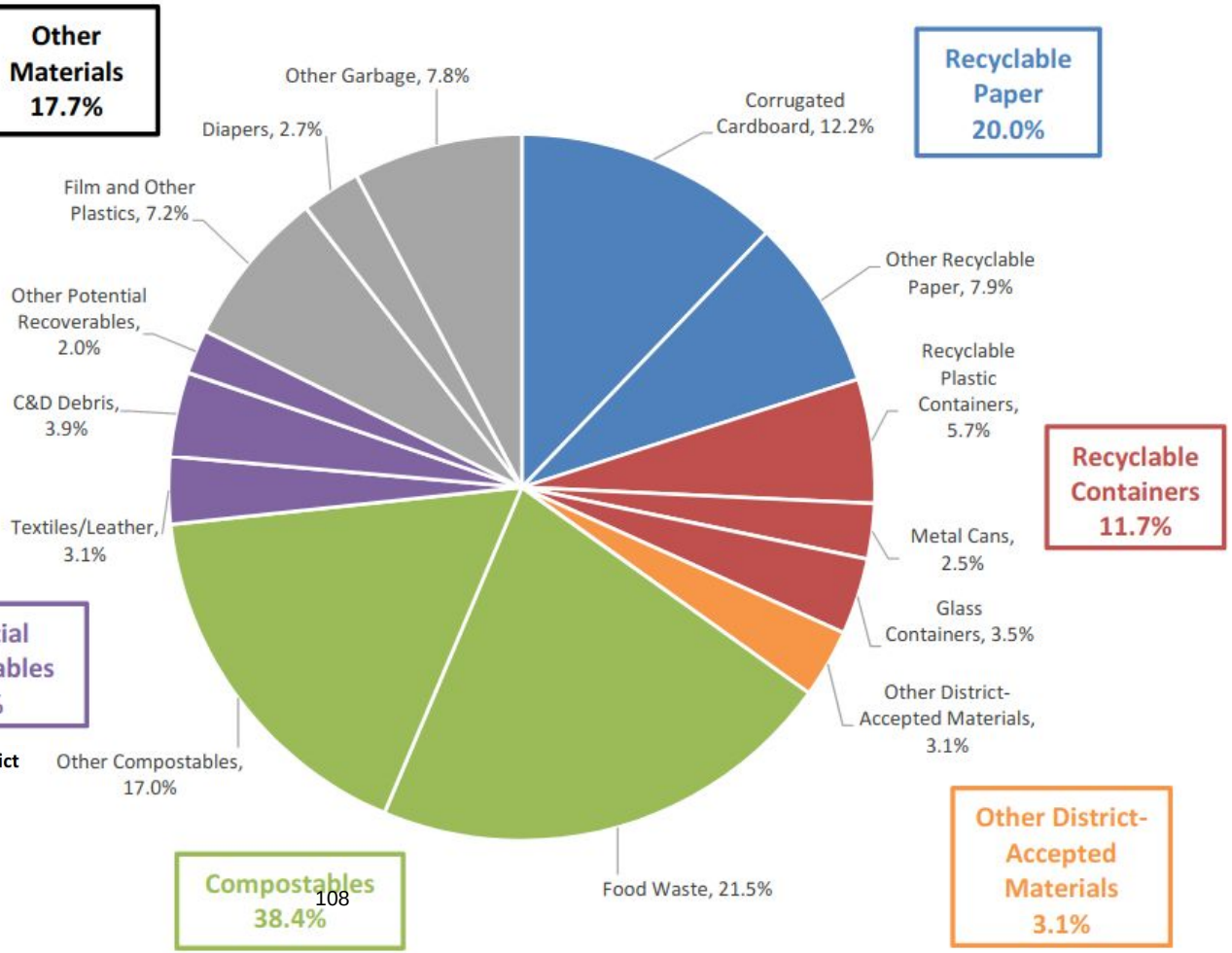
https://www.heraldtimesonline.com/in-depth/news/local/2022/03/07/covid-impact-bloomington-restaurant-food-businesses-dramatic/6926907001/

MONROE COUNTY SOLID WASTE MANAGEMENT DISTRICT

ORGANIC WASTE RECOVERY ANALYSIS

Figure 4-6: Composition of Private Mixed Waste (% by weight)

Compostable Waste is the largest category of waste landfilled – both for residential and commercial clients – in Monroe County, Indiana.



Prepared for: **Monroe County Solid Waste Management District**
3400 S. Walnut Street
Bloomington, IN 47401

Submitted by: **Kessler Consulting, Inc.**
innovative waste solutions
14620 N. Nebraska Ave., Bldg. D
Tampa, FL 33613

https://static1.squarespace.com/static/614351a889dbcd44d3ded37b/t/61b36e6963f2ee272d058c15/1639149163115/2016+Mixed+Waste+Processing+Facility+Final+Report+From+Kessler+Consulting.pdf

MONROE COUNTY SOLID WASTE MANAGEMENT DISTRICT

ORGANIC WASTE RECOVERY ANALYSIS

DECEMBER 2018

Table 2: Estimated Food Waste Generated by Significant Non-Residential Sources (Tons/Year)

Generator Type	Number of Locations	% Food Waste[1]	Tons Food Waste[1]
Restaurants (> 15 FTEs)[2]	84	47%	5,260
Grocery Stores (> 15 FTEs)	10	30%	2,200
Food Manufacturing (> 12 FTEs)	7	46%	180
Nursing Homes	20	20%	170
Schools	20	30%	170
Hospitals	3	20%	40
		Total	**8,010**

[1] Waste composition and generation rates based on CalRecycle's 2014 Generator-based Characterization Study.
[2] FTEs = full-time employee equivalents.

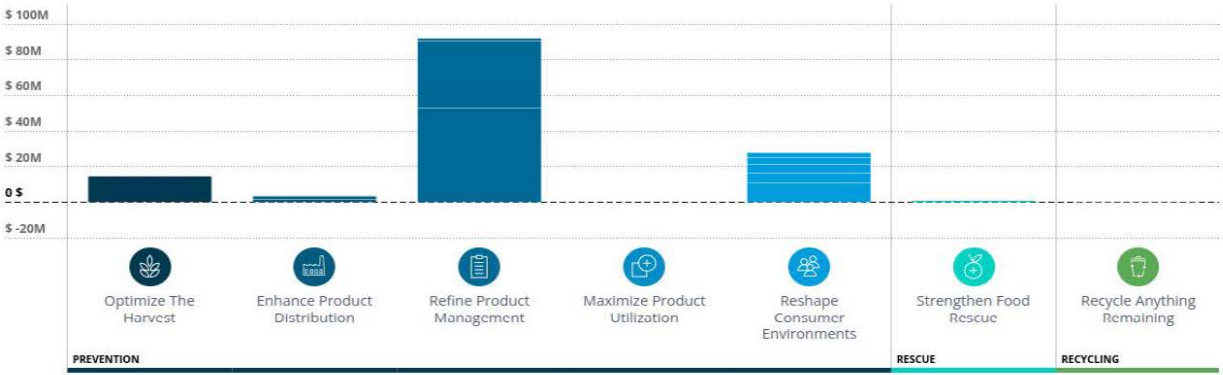
Submitted by:
Kessler Consulting, Inc.
innovative waste solutions
14620 N. Nebraska Ave., Bldg. D
Tampa, FL 33613

https://www.gogreendistrict.com/s/2016-Organic-Waste-Recovery-Analysis-Final-Report-Kessler-Consulting.pdf

https://insights-engine.refed.org/solution-database?dataView=total&indicator=us-dollars-profit&stakeholder=foodservice&state=IN

ReFED | Rethink Food Waste Through Economics and Data

Explore solutions to food waste



Impact Metric: Net $ | Tons | Climate | Water | Meals | Jobs

Stakeholders: Foodservice

Data View: Total

Food Type: All Food Types

States: Indiana

ACTION AREA	SOLUTION NAME	NET FINANCIAL BENEFIT ▼	
	Waste Tracking (Foodservice)	$ 53.1M	VIEW DETAILS
	Markdown Alert Applications	$ 37.7M	VIEW DETAILS
	Imperfect & Surplus Produce Channels	$ 14.5M	VIEW DETAILS
	Portion Sizes	$ 11.1M	VIEW DETAILS
	Small Plates	$ 5.1M	VIEW DETAILS

PREVENTION SOLUTIONS

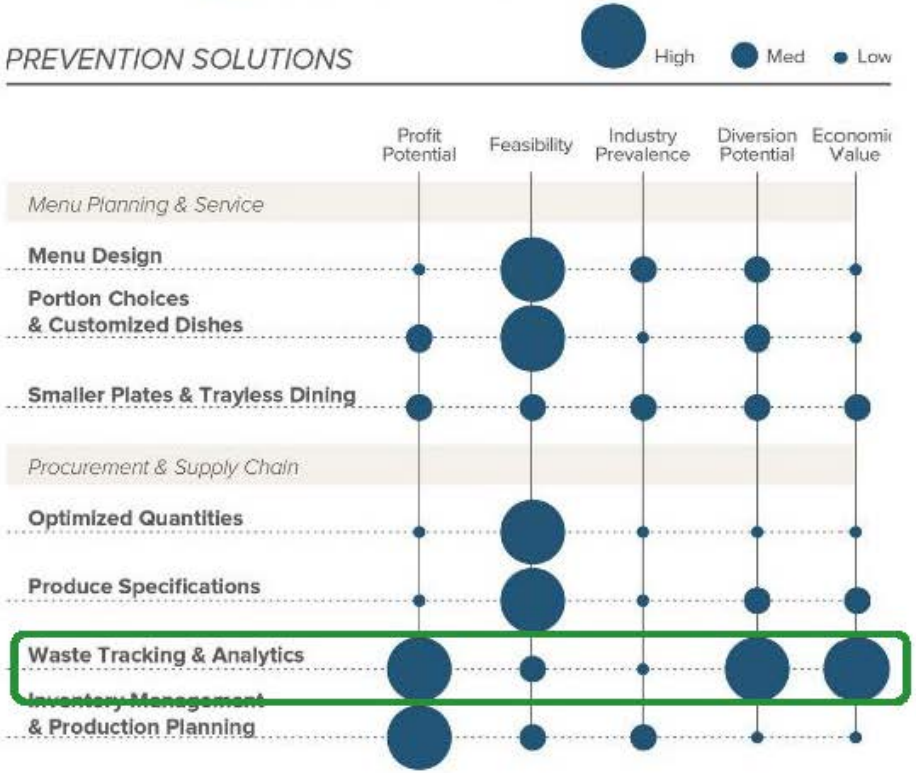
ReFED | Rethink Food Waste *Through Economics and Data*

THE CURRENT LANDSCAPE

The full cost of food, including purchases, preparation, and disposal costs, to restaurants averages approximately $4,000 per ton.[18] Based on a survey conducted by the National Restaurant Association, nearly half of restaurant operators track food waste as a prevention method,[19] but there is still an opportunity to do more, especially in capturing post-consumer food waste. Prevention solutions are not only some of the most cost-effective but can also be easier to implement without having a negative impact on the guest experience.

KEY INSIGHTS

- Solutions that prevent waste in restaurants have the greatest economic value and net environmental benefit, saving almost 400 thousand tons of waste annually.
- Prevention solutions provide restaurants nearly $620 million in business profit potential annually.
- Tracking food thrown away could cut food costs by 2 to 6% by increasing awareness of food waste within the company and focusing attention on front- and back-of-house prevention activities.

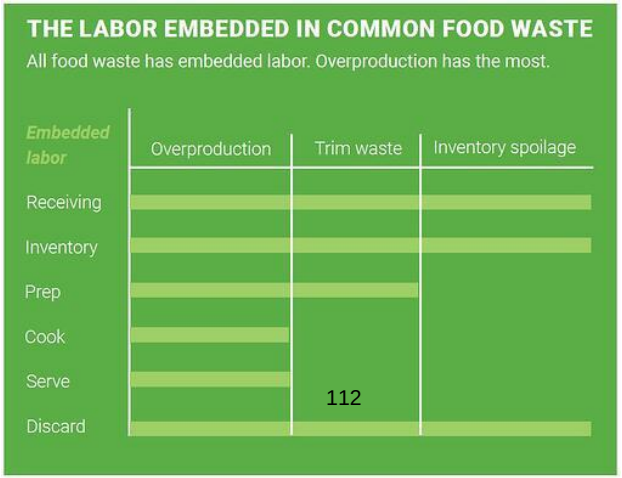


https://refed.org/downloads/Restaurant_Guide_Web.pdf

Wasted Inventory & Wasted Labor:
Cost Savings when Reducing Food Waste

Wasted Inventory: Industry data suggests that a typical food service location **wastes 4% - 10% of procured food inventory** *before* it leaves the kitchen.

Wasted Labor: Food-waste causes Labor-waste in 3 main ways in a commercial kitchen:
(1) Inventorying [**Inventory spoilage**], (2) Preparing [**Trim waste**], and
(3) Serving food that is ultimately discarded [**Overproduction**].
If a kitchen cuts overproduction in half, it is likely save 4%-8% on wasted labor alone.



https://info.leanpath.com/why-food-waste-prevention-should-be-your-top-sustainability-initiative

https://blog.leanpath.com/when-food-is-wasted-labor-is-wasted.-foodservice-cant-afford-that-particularly-now

ROI when Reducing Food Waste:

CHAMPIONS 12.3

Investing $1 in reducing food waste
Saves $7 for an average Restaurant.

THE BUSINESS CASE FOR REDUCING FOOD LOSS AND WASTE: RESTAURANTS

A Report on Behalf of Champions 12.3

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

SUMMARY FINDINGS

We analyzed data of preconsumer waste from 114 restaurant sites, located across 12 countries, and calculated the following results:

- The average benefit-cost ratio for food waste reduction was 7:1 over a three-year time frame.
- Within the first year of implementing a food waste–reduction program, 76 percent of the sites had recouped their investment. Within two years of implementing a program, 89 percent of the sites had recouped their investment.
- By reducing food waste, the average site saved more than two cents on every dollar of cost of goods sold (COGS).
- There appears to be no clear correlation between benefit-cost ratios and a site's market segment or geography.
- Key strategies for achieving food waste reduction were to measure the food waste, engage staff, reduce food overproduction, rethink inventory and purchasing practices, and repurpose excess food.

ABOUT THIS PUBLICATION

This publication focuses on the financial business case for reducing food loss and waste in restaurants. It is a supplement to *The Business Case for Reducing Food Loss and Waste* and provides additional sector-specific data and analyses. *The Business Case for Reducing Food Loss and Waste* was published in March 2017 and is available at www.champions123.org/the-business-case-for-reducing-food-loss-and-waste/.

AUTHORS

Austin Clowes (WRI), **Craig Hanson** (WRI), and **Richard Swannell** (WRAP)

The authors thank Champions 12.3 and their associates for reviewing and providing helpful input on draft versions of this publication (see Acknowledgments).

SUSTAINABLE DEVELOPMENT GOALS

https://champions123.org/publication/business-case-reducing-food-loss-and-waste-restaurants

PROJECT DRAWDOWN

https://www.drawdown.org/

** Gigatons CO2 Equivalent Reduced / Sequestered (2020–2050)*

SOLUTION	SECTOR(S)	SCENARIO 1 *	SCENARIO 2 *
Reduced Food Waste	Food, Agriculture, and Land Use / Land Sinks	87.45	94.56
Health and Education	Health and Education	85.42	85.42
Plant-Rich Diets	Food, Agriculture, and Land Use / Land Sinks	65.01	91.72
Refrigerant Management	Industry / Buildings	57.75	57.75
Tropical Forest Restoration	Land Sinks	54.45	85.14
Onshore Wind Turbines	Electricity	47.21	147.72
Alternative Refrigerants	Industry / Buildings	43.53	50.53
Utility-Scale Solar Photovoltaics	Electricity	42.32	119.13
Improved Clean Cookstoves	Buildings	31.34	72.65
Distributed Solar Photovoltaics	Electricity	27.98	68.64

Recover Forward:
Employee Retention

OSHA: #3 most common injury for fast food kitchen employees is to be “Hurt while lifting or carrying items” (34% of employees have experienced **Lifting Injuries**). https://www.coshnetwork.org/sites/default/files/FastFood_Workplace_Safety_Poll_Memo.pdf https://www.mashed.com/124676/things-dont-know-fast-food-employees/

OSHA: #4 most common injury for fast food kitchen employees is to be “Injured by a fall on a wet, slippery, or oily floor” (23% of employees have experienced **Slipping Injuries**). https://www.coshnetwork.org/sites/default/files/FastFood_Workplace_Safety_Poll_Memo.pdf https://www.mashed.com/124676/things-dont-know-fast-food-employees/

Bureau of Labor Statistics: 25% of workers compensation indemnity claims involve **Back Injuries**. https://essr.umd.edu/about/occupational-safety-health/ergonomics/back-injuries-fact-sheet

EVERYONE: Leaky garbage bags are disgusting! Dumpsters are for vape-breaks, not workplace injuries ;)

VS

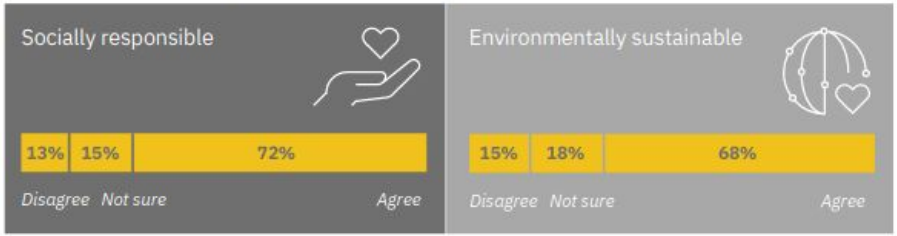
Rolling carts eliminate the risks related to lifting wet or over-filled bags, like back injuries and slipping*

Recover Forward:
Employee Attraction

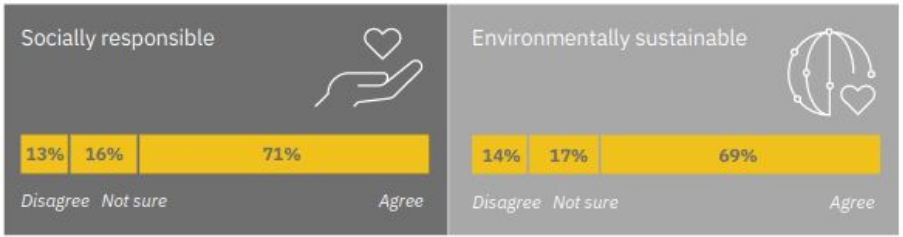
Employee Attraction: Sustainability Pride

IBM "Sustainability at a Turning Point" (2021): 71% of employees and employment-seekers say that environmentally sustainable companies are more attractive employers.

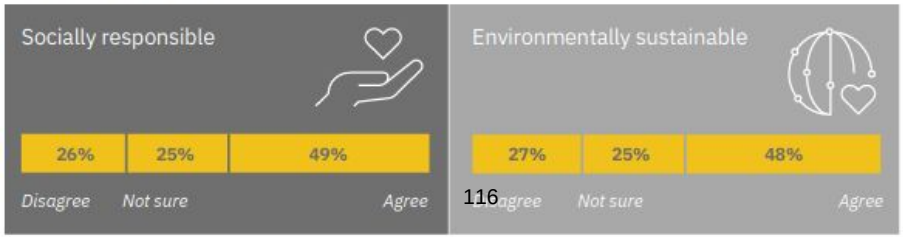
I am more likely to apply for a job with an organization that I consider to be



I am more likely to accept a job offer from an organization that I consider to be



I am more likely to be willing to accept a lower salary to work for an organization that I consider to be



IBM Institute for Business Value

https://www.ibm.com/downloads/cas/WLJ7LVP4

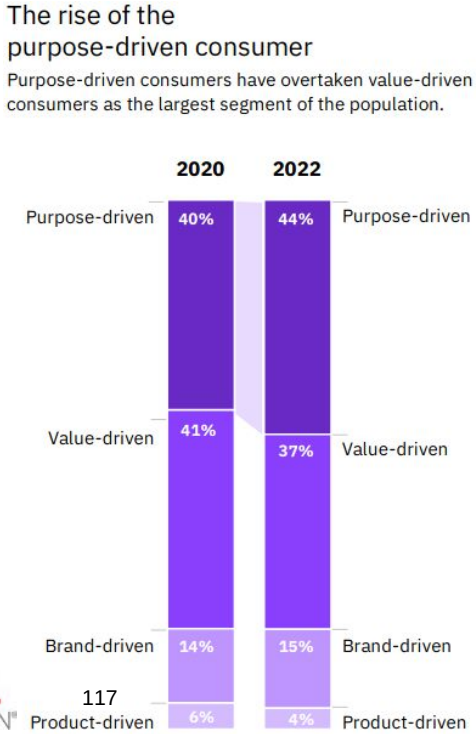
Recover Forward:
Client Attraction

Client Attraction: Sustainability Purpose

IBM & *NRF* "Consumers Want it All" (2022):

"In 2022, roughly 4 in 5 consumers say sustainability and health and wellness benefits are important to them when choosing a brand."

"While Millennials are leading the charge, every age group indicates that sustainability, environmental, and/or personal wellness attributes are significant considerations in selecting brands."



Purpose-driven consumers (44%)
seek products and brands that align with their values and provide health and wellness benefits. They're willing to change their shopping habits to reduce environmental impact and they care about sustainability and recycling.

Value-driven consumers (37%)
want value, convenience, and products and services that will simplify their lives. They're less inclined to switch habits to reduce negative environmental impact.

Brand-driven consumers (15%)
trust brands and prioritize the brand when making purchasing decisions. Compared to other groups, they have the highest average income, and they love staying on top of new trends.

Product-driven consumers (4%)
are focused primarily on product functionality and value for price. They aren't tied to any brand or product attribute and are the least engaged shoppers.

IBM Institute for Business Value

NRF NATIONAL RETAIL FEDERATION

https://cdn.nrf.com/sites/default/files/2022-01/Consumers%20want%20it%20all.pdf

Note: Totals may not add up to 100% due to rounding.

LAUNCH


ORGANICS ONLY
T1 568357
ORGANICS ONLY
T0 767745
ORGANICS ONLY
T1 568341
ORGANICS ONLY
T1 568377
ORGANICS ONLY
T0 767740
ORGANICS ONLY
T1 568362

Cohort 1: April 2022 - July 2022

Application due date: March 25th
Confirmation of participation: March 31st
Program prep and waste audit: April 4th - April 18th
12 week trial period: April 18th - July 17th

Cohort 2: June 2022 - October 2022

Application due date: June 10th
Confirmation of participation: June 17th
Program prep and waste audit: June 27th - July 11th
12 week trial period: September 16th

Cohort 3: September 2022 - January 2022

Application form due date: September 9th
Confirmation of participation: September 16th
Program prep and waste audit: September 26th - October 10th
12 week trial period: October 10th - January 8th, 2023

Cohort 4: January 2023 - May 2023

Application due date: January 13, 2023
Confirmation of participation: January 20, 2023
Program prep and waste audit: January 30, 2023 - February 12, 2023
12 week trial period: February 12, 2023 - May 14th, 2023

PROGRAM INCENTIVE

Participating restaurant & retail food establishments in the program will receive the following during the three month trial:

- **Weekly collection** of organics-customized rollers (32-gallons each) and delivery of sanitized replacement rollers. Rollers may be collected two or three times per week, depending on assessed needs.
- **5-gallon buckets and 1.5-gallon pails** - with lids, for internal use at prep stations.
- **Waste audit** - introductory period of physically examining and categorizing organic waste stream.
- **Window decals** - for interested participants to display.
- **Personalized web-profile** - logo on the EarthKeepers website; feature piece for interested participants.
- **Mixed-media promotions** - local promotion of restaurants as compost innovators & EarthKeepers partners.

The program incentive is valued at $5,000 per participating establishment.

Promotional Partners:

DOWNTOWN BLOOMINGTON

MAIN STREET AMERICA™

BLOOMINGTON ECONOMIC

BEDC

DEVELOPMENT CORPORATION

The Greater Bloomington Chamber of Commerce

Better business. Better community.

WORK IT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Consulting

Training


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EarthKeepersCompost.com
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T2276789


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T0767753


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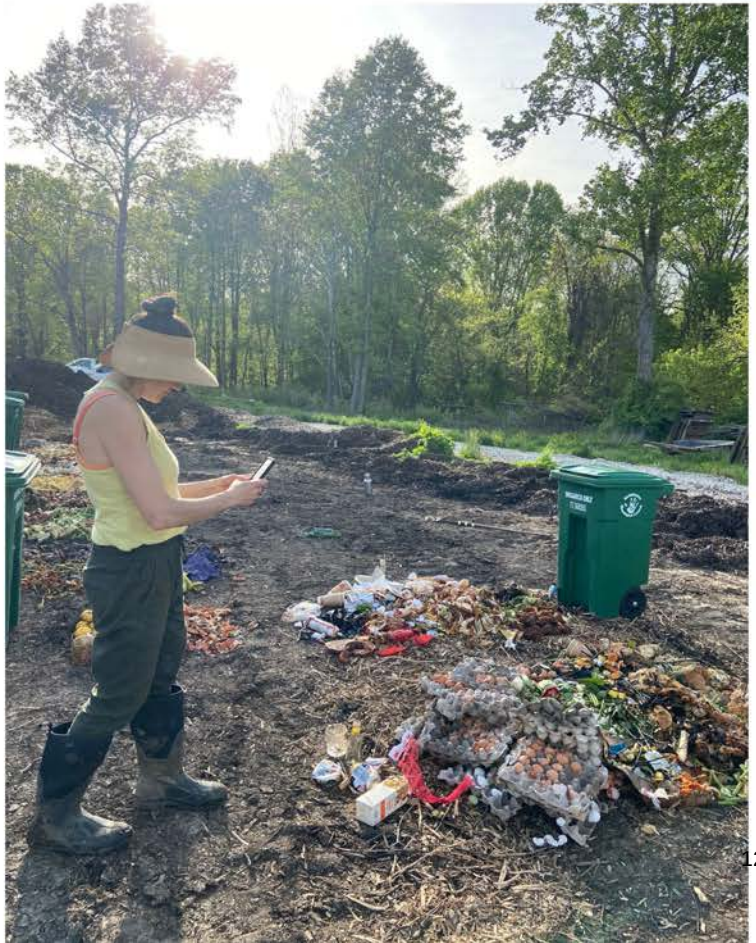
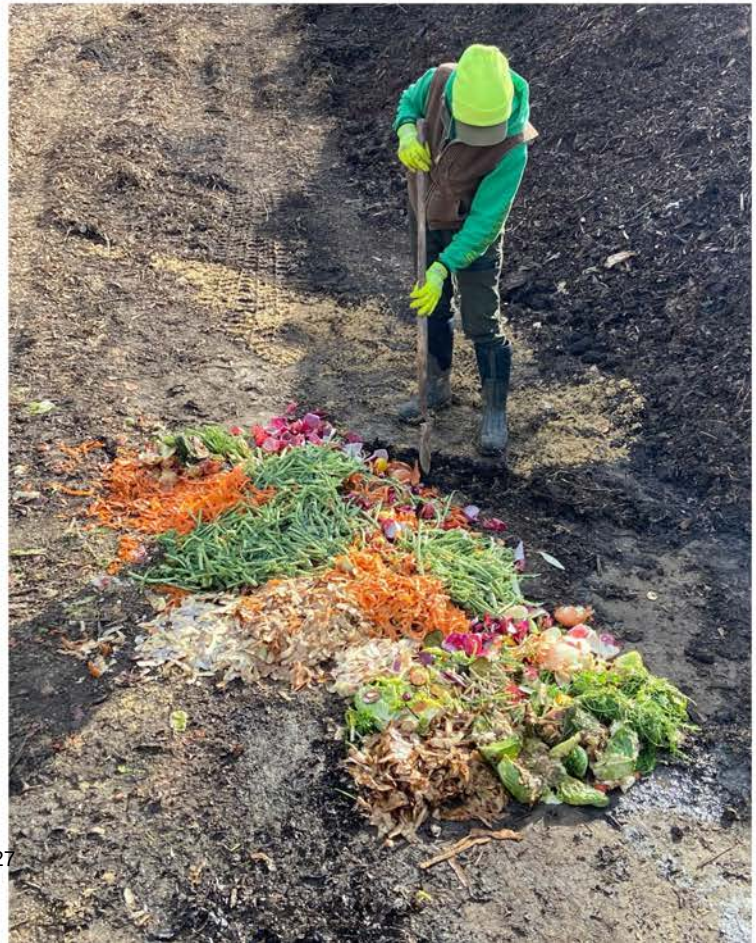
T2276848

Marketing

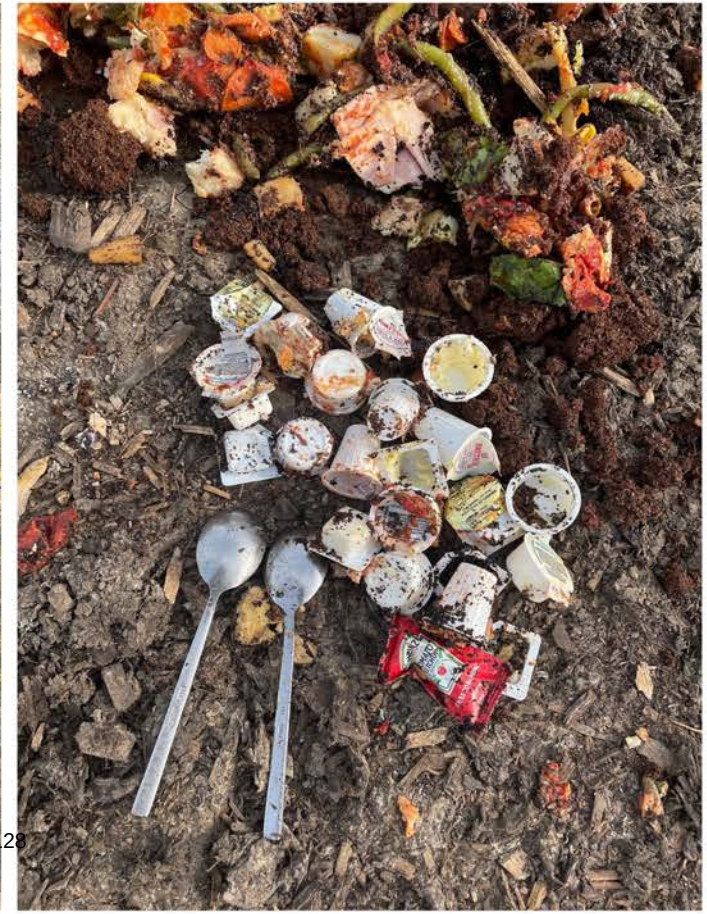
Hauling

Auditing





CONTAMINATION!



More Auditing!

Making Compost

Making MORE Compost

Feeding Animals

Feeding People

Delivering

…to Schools

…to Nonprofits

…to Farms

The EarthKeepers

RESULTS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COHORT	Restaurant	Pilot Start Date	Pilot End Date	Organic waste diverted	Number of bins collected	Collection frequency	Average number of bins collected per pickup	Contamination Rate (% of bins containing contaminants)
1	Nicks	4/1/2022	9/30/2022	5811	73	Mon, Wed, Fri	1.2	3
	Osteria	4/1/2022	9/30/2022					
	Southern Stone	4/1/2022	9/30/2022	10605	124	Tues, Fri	3.5	18
	Convention Center	4/1/2022	9/30/2022	8624	108	Tues, Thur, Sun	4	8
2	FARMbloomington	5/1/2022	10/31/2022	11746	139	Tues, Fri, Sun	3.3	4
	BuffaLouie's	6/1/2022	10/31/2022	18206	348	Mon, Wed, Fri, Sun	6	31
	Soul Juice	6/1/2022	10/31/2022	4587	66	Mon, Wed, Fri	1.3	5
	Uptown Cafe	7/1/2022	11/30/2022	14822	150	Tues, Fri, Sun	4	6
3	Crazy Horse	9/1/2022	12/31/2022	294	15	Mon, Thur	1	13
	DaVinci's Pizza	9/1/2022	12/31/2022	3259	43	Mon, Wed, Fri	1.2	9
	Trojan Horse	9/1/2022	12/31/2022	0	0	Tues, Fri	0	0
	Juannita's	9/1/2022	12/31/2022	140	10	Tues, Fri	0.7	40
4	InBloom	9/16/2022	1/6/2023	561	18	Mon, Thur	1	6
	Cup & Kettle	9/16/2022	1/6/2023	236	32	Mon, Thur	1.5	0
	Baked!	9/16/2022	1/6/2023	400	15	Thur	1	7
	Pili's Party Taco	9/16/2022	1/6/2023	1720	42	Mon, Wed, Fri	1	12

	Cohort 1	Cohort 2	Cohort 3	Cohort 4	TOTAL
Lb	25040	49361	3693	2917	**81011**
Tons	12.5	24.7	1.8	1.5	**40.5**
# bins	305	703	68	107	**1183**

			*This is equivalent to Greenhouse Gas Emissions from			*This is equivalent to carbon sequestered by	
Total Tons of Food-waste recovered	Tons of Methane (CH4) emissions reduced	Equivalent tons of CO2	Gallons of Gasoline consumed	Miles driven by an average gasoline-powered passenger vehicle	Home's electricity use for one year	Tree seedlings grown for 10 years	Acres of U.S. forests in one year
40.5	10.125	279	28,483	628,308	49.3	4,185	300

* Data calculated with the EPA Greenhouse Gas Equivalencies Calculator

SUCCESSES


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Program Successes

- **Raised Awareness of Business-Case:**
  Small business proprietors, foodservice entrepreneurs, and institutional kitchen administrators were provided with operations research that they could apply in their management, even if they didn't participate.

- **Elevated the Economic Development Case:**
  Generated tangible Triple-Bottom-Line results for local foodservice sector savings, local labor wellbeing enhancement, and local farm & food-system support.

- **Consolidated Actionable Research:**
  EarthKeepers' consulting work, like this report, help to consolidate cutting-edge research in foodservice political-economy, waste management, and behavioral psychology for the purpose of local application.

- **Initiated Recycling Partnerships with MCSWMD:**
  Established multiple partnerships between project participants and the discounted commercial recycling services of MCSWMD's Green Business Network.

- **Trained & Educated Local Foodservice Labor Pool:**
  Foodservice is a highly-mobile segment of the labor pool and this helped EarthKeepers recruit additional participants, through kitchenstaff connections to former employers or to eateries that they migrated into.

CHALLENGES


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Program Challenges

- **COVID-Era Foodservice Economic Hardship:**
  Foodservice was among the hardest-hit sectors, forcing a focus on immediate survival over aspirations.

- **Large Hospitality Groups Refused to Participate:**
  Many local restaurants have been acquired by larger marketing groups, shifting their incentives.

- **General Reluctance: 47 Eligible Eateries Recruited | 16 Participated | 5 Stayed & Paid**
  Recruitment time was enormous, with each eatery receiving multiple calls, emails, and in-person visits.

- **Persistent Foodservice Staff Shortage & Rotation:**
  Staff turnover led to learning-loss and management strain broke-down the monitoring of contamination.

- **New Content - Culture Change must be Intentional:**
  Many eateries don't recycle, so Operating Procedures were new and changing operational culture is slow.

- **Value-Action Gap - Behavioral Change must be Intentional:**
  Research in Psychology and Organizational Science exists for application to waste behaviors (see Report).

- **CONTAMINATION - the Scourge of Recycling Systems:**
  Contamination has damaged national recycling markets and cannot be allowed to ruin organics (see Report).

RECOMENDATIONS

Recommendations

- **Apply the Known Research:**
  These are well-studied problems with potential solutions that must be contextually applied. This report is a round-up of leading industry research + consultancy the community already paid for (cf Kessler Report 2018).

- **Upstream Solutions (Waste REDUCTION) > Downstream Solutions (Waste DIVERSION):**
  Business Case & Emissions Case rely on cost-savings & emissions-savings from REDUCING waste, rather than simply diverting waste through hauling. Public Education & Commercial Consulting are pivotal for reducing waste & preventing contamination. Hauling Subsidy distorts the Business Case & incentive for reducing waste.

- **Heed the Promises & Perils of Comparators:**
  The City of Madison, WI and the campus of UW-Madison provide a model of mindful persistence after breaking a farm composting system and an anaerobic digester system (see Report; cf Kessler Report 2018).

- **Organics Recycling (Composting) is still Recycling:**
  Problems plaguing conventional recycling systems can & will affect organic waste systems and must be directly addressed before they transfer. There is a moral hazard to externalizing our costs that must be addressed.

- **Climate Crisis requires Mindful Movement (Slow Down):**
  “Move Fast and Break Things” has become more a truism than a tech motto. “Bigger is Better” has been equally perilous. Rushing and scaling are intuitively tempting when facing crisis but these urges have also gotten us into the problems we face and we can’t afford to break the remaining tools in our kit.

Recommendations

- **Think in Systems - Adapt to Known Risks:**
  Hauling organic waste is a perilous thought-exercise in the absence of robust & redundant facility capacity. Haulers must be mindful of risks brought to facilities by contamination, otherwise hauling is imperilled. Facility throughput (management & marketing of end-products) must be considered, as well. They are linked systems.

- **Build Resilience - Distribute Risk by Growing Local Systems:**
  Centralizing systems like waste management presents tempting cost-savings through scale efficiencies…However, single-point-of-failure systems have incredibly costly breakdowns, suggesting that critical infrastructure functions can benefit from redundancy: it increases some costs but avoids major risks. Multiple, local outlets for organic waste processing – farms & facilities – must be considered in tandem.

- **Ending Contamination: Behavioral Change > Technology Fixes**
  Technological fixes to cultural problems can be a sometimes cynical mismatch. Democratic approaches to resilient problem-solving requires personal engagement & education among local leaders, local constituents, local owners, and local labor. It is slower to build a Culture of Compost but this is more adaptable

- **Collaborate - Our Democracy and Our Markets will Benefit:**
  MCSWMD exists as a Special District specifically to encourage issue-specific local government collaboration. It's 5-Year Plan incorporates waste-specific elements of CoB Climate plans but Expands upon them by harnessing the needs and the resources of County government as well. Great venue to experiment with policy!

Sustainable Solutions for Organic Waste Management

End of an Era