

Proposal for a Commercial Composting Pilot Program in Cambridge



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Abstract

Reducing food waste was heralded as *the* highest impact method to combat climate change by a leading consortium of scientists at Project Drawdown.¹ After three years of conducting primary research into this problem, Cambridge Table to Farm, the Cambridge Business Associations, Cambridge Chamber of Commerce, 31 restaurants, and over 300 signatories together urge the City Council to implement a commercial composting pilot program for restaurants. We calculate that a program with 100 restaurants would:

1. Divert upwards of 5,000 tons of CO₂ equivalent emissions from the environment per year
2. Save local restaurants \$1,000 to \$25,000 annually per restaurant
3. Provide restaurants a hedge against increasing trash costs across the next 5 years
4. Help address landfill capacity shortages by removing 6,000 tons of waste per year

In this paper, we present the environmental case for a commercial composting program, the financial case, and our story.

¹ Sort by scenario 1 within [Drawdown's Table of Solutions](#)

The Proposal

Informed by our primary research, and supported by the broader community, we urge City Council to:

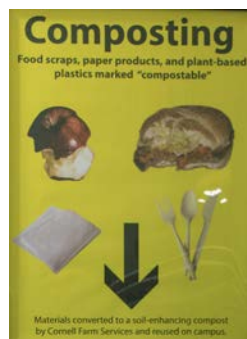
1. Develop a pilot program for small to mid-sized businesses to begin commercial composting / anaerobic digestion
2. Set an explicit goal of 100 participants and track total food waste diverted as part of the City's Sustainability Dashboard
3. Fund a budget between \$300,000 - \$500,000 and limit participation to businesses with less than 50 employees
4. Establish a strategy for expanding to organizations with greater than 50 employees
5. Incorporate the following elements into the pilot project:



Free composting receptacles



Up to 4x Per Week Pickup



*Multilingual Educational Material
for Restaurants*



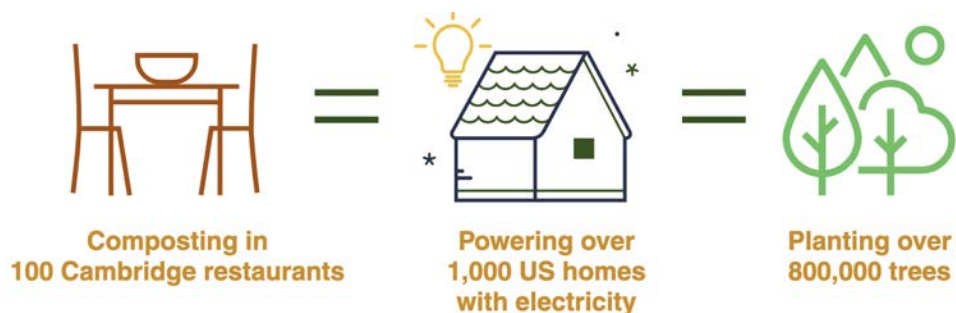
Diverse, Equitable, Local Workforce

The Environmental Argument

*Summary: Diverting restaurant food waste will make a **massive** impact on emissions.*

Food waste becomes methane when it decomposes in landfills and has emerged as an extraordinary contributor to climate change. The problem is so severe that Project Drawdown, a leading consortium of scientists studying climate change, has ranked [reducing food waste](#) as the [highest impact technique](#) to decrease our carbon footprint, capable of diverting over 87 gigatons of CO₂ equivalent emissions from the atmosphere over the next 30 years. If food waste itself were its own country, it would be third behind China and the US in terms of overall greenhouse gas emissions.²

After interviewing approximately 20 restaurants in Cambridge, we found that the average small to medium size restaurant wastes approximately 60 tons of food per year.³ Applying the EPA Waste Reduction Model (WARM), this is the equivalent of 5,300 tons of divertable CO₂ emissions each year.⁴



Helping 100, mid-sized, sit-down restaurants in Cambridge compost their food waste will save the environment roughly 5,300 tons of CO₂ equivalent emissions per year



Beyond the emissions, moving food waste to compost facilities also reduces our reliance on landfills and waste-to-energy centers that present general hazards to human health.⁵ Diverting

² [How Cutting Food Waste can Help the Climate](#)

³ [Restaurant interviewing methodology](#) section provides a description of how we arrived at this number.

⁴ For detailed calculations of impact and our sources, please visit our [emissions calculator](#).

⁵ [Incineration Processes and Environmental Releases](#)

water-logged organics from waste-to-energy centers further optimizes plant operational efficiency.⁶

The Restaurant Argument

Summary: Restaurants not currently composting will be able to avoid large MassDEP fines effective Oct. 2021, and will be given the opportunity to substantially reduce their trash pickup costs. Restaurants that currently compost will save thousands by no longer paying for service.

Help Restaurants Save Money Composting

There are many restaurants in Cambridge that currently pay for composting. A government-sponsored composting service will immediately save them thousands to tens of thousands dollars. Daniel Myers, the owner of Loyal Nine Restaurant explains, “Composting is by far the best way to dispose of waste in a sustainable fashion, and most restaurants provide loads of it. We spend over \$10,000 annually on composting as is.”

Help Restaurants Avoid Fines

In October of 2021, the Massachusetts DEP will start implementing fines up to \$25,000 per violation for any institution that wastes more than ½ ton of food waste per week.⁷ From our primary research, the vast majority of Cambridge restaurants will automatically fall into the ½ ton per week bucket.

A small business composting pilot program would assist local restaurants in remaining compliant and avoid fines associated with dumping organic waste.

Help Restaurants Save on Trash Fees

A government-sponsored commercial composting program will reduce the volume of restaurant trash by over 30 percent, providing restaurants the opportunity to renegotiate their trash-hauling contracts and save substantially on pickup fees.⁸

It is particularly important to give restaurants a lever to reduce their trash contracts given future landfill capacity projections. Massachusetts landfills have already utilized ~83% of their permitted capacity, and are predicted to grow towards 100% utilization throughout the next 5

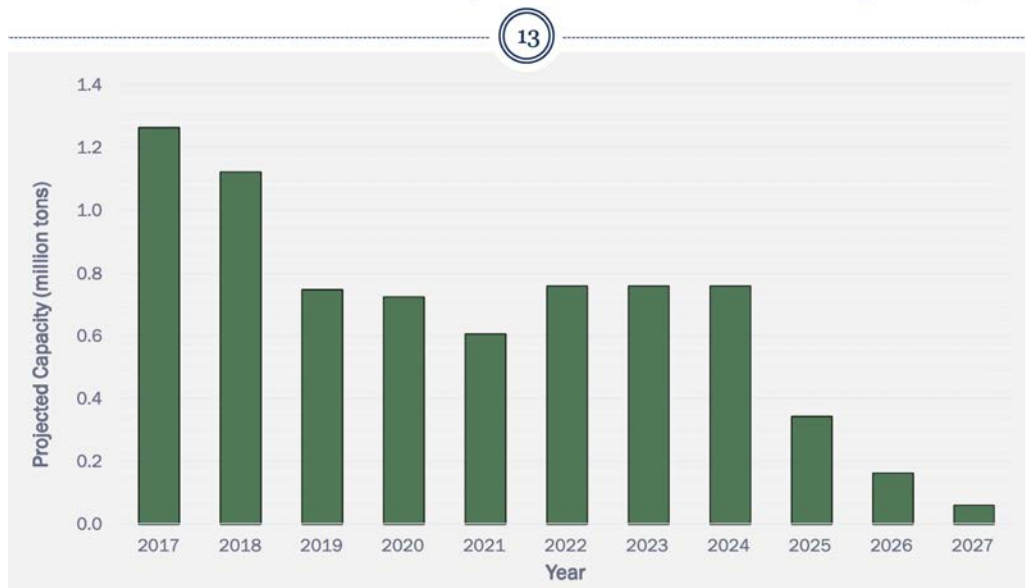
⁶ [Food Waste to Energy: An Overview of Sustainable Approaches for Food Waste Management and Nutrient Recycling](#)

⁷ [Mass DEP Oct 2021 Food Waste Bans Draft](#). We have provided a link with the *draft* of the plan available publicly online, and have heard from our sources that the plan recently got approved.

⁸ Statistic acquired from primary research. Restaurants will also need to be vocal with their trash companies to achieve the savings, and aware of automatic billing cycles.

years.⁹ As this process unfolds, it stands to reason that landfill tipping fees will increase, which will push higher trash prices onto restaurants.

Massachusetts Projected Landfill Capacity



The Government Argument

Summary: The restaurant industry needs support urgently from the government.

Provide Pandemic Relief

The pandemic has been an enormously difficult time for the restaurant industry. In Massachusetts, 1 in 5 restaurants have closed, and 93% have laid off employees. The National Restaurant Association reports that there has been a 96% decline in restaurant sales with the average loss greater than 80%.¹⁰

Under these circumstances, the Cambridge government should use every innovative approach at its disposal to help the industry regain its former strength, including (but not limited to) the ideas laid out in this proposal.

⁹ [Massachusetts Materials Management Capacity Study](#). Section 2-3. 83% figure in [summary slides](#), pg 12. Presented to MassDEP.

¹⁰ [Over 200k Mass. Restaurant Workers Laid Off: 93% of Restaurants Have Cut Staff](#)

Cambridge businesses have previously expressed their interest to participate in a curbside composting program. Their interest was raised as a policy order (POR 2018 #147) that the City Council passed in 2018. In April of 2019, another policy order (POR 2019 #133) was passed to hear the details of their findings. The City is in a unique position to implement this program to offer economic relief while making environmental strides associated with emissions goals and the Zero Waste Master Plan.¹¹

Reduce Landfill Utilization

As landfills fill up, Massachusetts has been exporting at least 22% of its waste to other states as far as Ohio, subjecting business owners and individual state taxpayers to additional transportation fees highlighted in the table below:¹²

Table 3-10 Estimated Truck Transportation Costs

Distance (miles)	Drive Time (hours)	Transport Costs (\$/ton)		
		MSW	Single Stream	Organics
30	1.25	\$6.10	\$13.72	\$9.15
60	2.08	\$12.20	\$27.45	\$18.30
90	2.75	\$18.20	\$41.17	\$27.45
120	4.08	\$24.40	\$54.90	\$36.60
150	5.42	\$30.50	\$68.62	\$45.75

Source: MSW Consultants

Given this current situation, cities across the Commonwealth should work together to find places to divert waste from landfills. Food waste, led by Cambridge's example, is a prime place to start.

Nuts and Bolts

Budget

The average Cambridge restaurant wastes between two to three 64-gallon trash bags of food per night.¹³ After aggregating quotes from five local haulers applied across five different restaurants, and considering cost reductions that could be achieved with economies of scale, an investment ranging from \$300,000 - \$500,000 will be sufficient to fund a 100 small-business pilot program.¹⁴

¹¹ [City of Cambridge Zero Waste Master Plan](#)

¹² [Massachusetts Materials Management Capacity Study](#). Pages 3-14, 4-2. MA. currently exports over 22% out of state.

¹³ From primary research. For more info on our methodology to arrive at this number, please visit the [Restaurant Interviewing Methodology](#) section.

¹⁴ Save that Stuff, Agricycle, City Compost, Black Earth Compost, and Cero

This budget is consistent with historical precedent for similar, parallel, programs. According to the [FY18 Adopted Budget](#), \$100,000 was allocated to launch a small business recycling program. In the [FY19 Adopted Budget](#), \$150,000 was budgeted for a recycling pilot with up to 150 small businesses and twice weekly pickup.

Restaurant Size

Small to mid-sized restaurants (< 50 employees) are an ideal target market over larger restaurants or franchises for the following reasons:

1. It is easy to connect directly with the owners who are critical to the implementation of composting programs
2. These restaurants are most in need of post-pandemic government assistance due to financial strain

Pickup Frequency

With two to three 64-gallon trash bags of food waste anticipated per night, it is important that the city provides three to four pickups per week to prevent issues with odor.

Bins and Rodents

All standard composting bins have a locking mechanism, which has proven effective at deterring rodents both in the Cambridge residential composting program as well as for restaurants that already compost in Cambridge.

Educational Training

To implement an effective composting program, it is critical that multilingual educational training is provided for kitchen staff. Restaurants must properly educate their staff on how to dispose of their food waste. This will ensure that trash does not go in the compost and that food waste does not go in the trash. Furthermore, to maximize effectiveness, the training should include visual graphics hung around the kitchen and should be provided at multiple times during the pilot project to address high staff turnover.

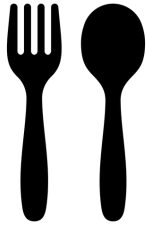
Prioritize Local Businesses

We urge the city to prioritize local organics haulers including the following vendors. All have demonstrated a willingness to pick-up food waste at a reasonable price. Our team has decided not to weigh in on the topic of anaerobic digestion versus composting, as we feel the highest priority must be the sustainable management of organics waste in general. However, we do encourage the government to prioritize solutions where each local hauler gets some business. One way to do this would be to assign different organics haulers to different business association districts.

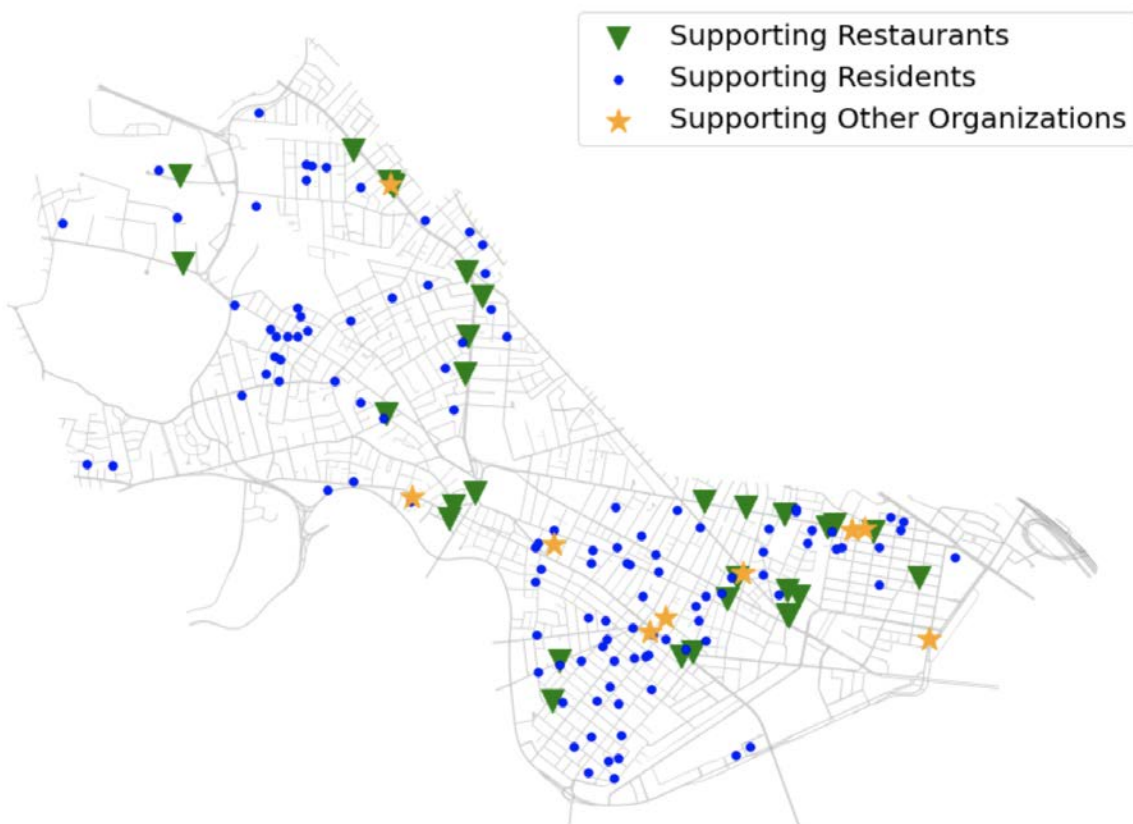


Community Support

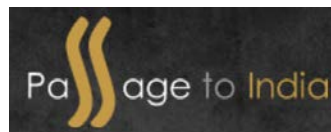
Summary: Our proposal has seen an overwhelming amount of support throughout the Cambridge community:



31 Restaurants | 313 People | 14 Organizations



31 Supporting Restaurants



SPYCE



CAFE BARADA

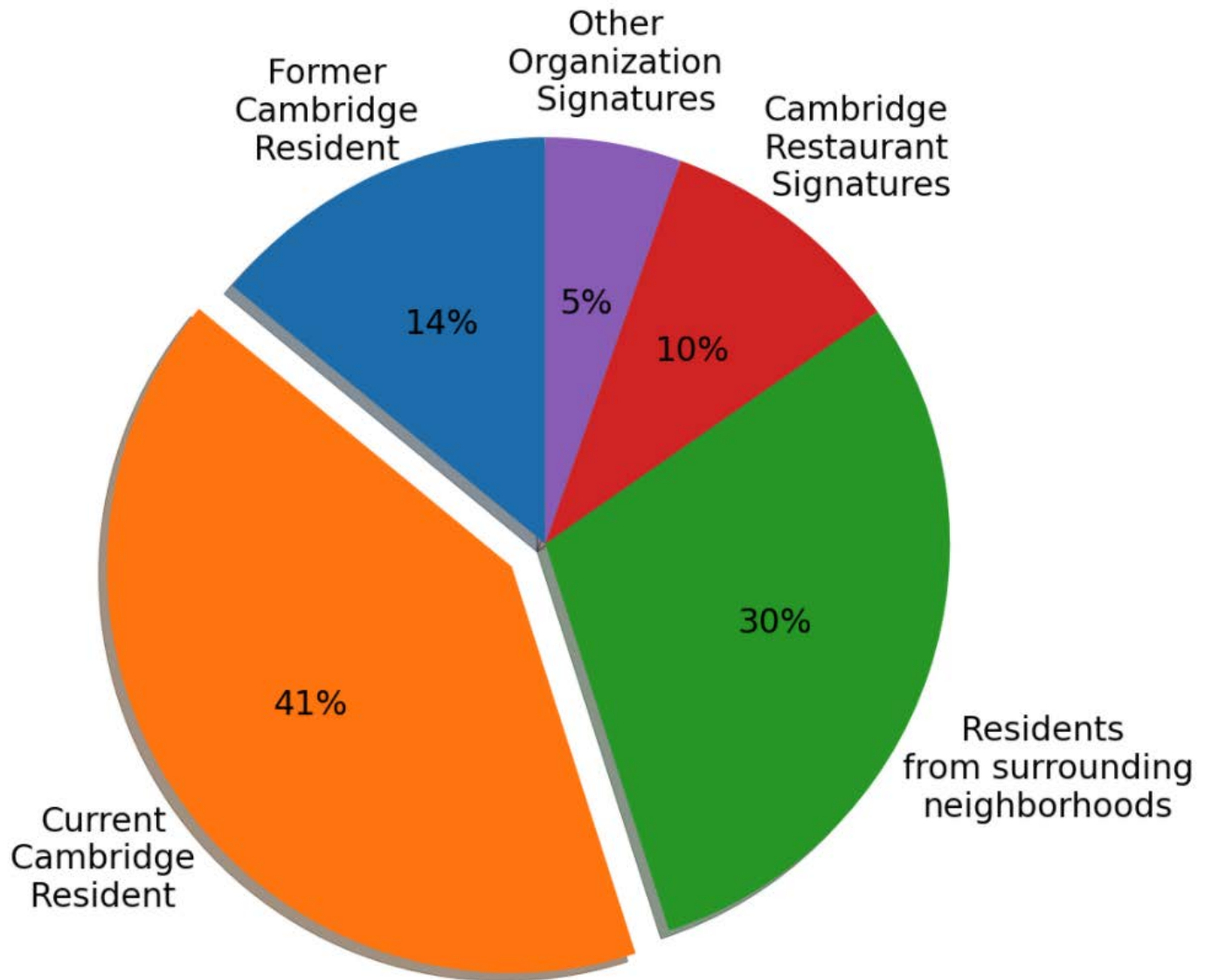


LAMPLIGHTER
— BREWING CO. —





313 Supporting People



6 Other Local Businesses



CHIPPER CONFECTIONS



14 Supporting Organizations



Cambridge Chamber of Commerce

David Maher, *President and CEO*



East Cambridge Business Association

Patrick Magee, *President* & Jason Alves, *Executive Director*



Harvard Square Business Association

Denise Jillson, *Executive Director*



Central Square Business Improvement District

Michael Monestime, *Executive Director*



Green Cambridge

Steven Nutter, *President*



The Sustainable Business Network of Massachusetts

Nicola Williams, *Board Member*



Black Earth Compost

Tom LeClair, *Business Development*



Mothers Out Front

Amy Antczak, *Coordinator*



Hubert Murray, Architect & Planner

Hubert Murray, *Owner*



The EcoPlanning Institute

Camille Tuason Mata, *Owner*



PlasticScore

Mladen Gajic, *Co-founder and CEO*



Farm Aid

Claire Kozower, *Operations Manager*



The Williams Agency

Nicola Williams, *Founder and CEO*



Onora

Adam Fishman, *Founder and CEO*

Testimonials

Composting can be quite a challenge for smaller restaurants. A Cambridge-run program that was able to function alongside the existing resident composting would be very helpful!

- Patrick Lynch, Founder/CEO of Bon Me

Our restaurant group has been composting since we first opened in 2008. Despite the added financial expense and logistical challenges of teaching staff new practices regarding refuse separation, we recognized the long-term value of thoughtful waste management.

- John Kessen, Co-owner of Mamaleh's Delicatessen

We have been a zero trash business for nearly 15 years and the pressures of the pandemic make composting incredibly hard to manage and afford. Municipal pick up would instantly provide us with a way to continue and expand our efforts to reduce our carbon footprint and foster workplace and customer engagement in waste reduction and management for the purpose of addressing climate change.

- Kari Kuelzer, General Manager at Grendel's Den Restaurant and Bar

Our family has supported CERO since it was founded and it is led and worked by community people and we have visited them in Roxbury. It not only is important for the environment it will further provide good paying jobs to local people. \$300,000 investment while we are sitting on a 'rainy fund'? This is an investment that is a no brainer in helping small businesses and the health of our community.

- Kathy Roberts, Cambridge Resident

Composting is essential to fighting climate change, and Cambridge has always been a leader on environmental issues. Let's continue to lead and show other cities how to make an impact!

- Amy Antczak, Coordinator at Mothers Out Front

We need to support our small businesses in the transition to a green economy. Already struggling from the devastating impact of COVID-- our restaurants need help to build back smart and sustainably. It's an excellent use of scarce resources to invest in this type of infrastructure support

- Jude Glaubman, Cambridge Resident

Composting is by far the best way to dispose of waste in a sustainable fashion, and most restaurants provide loads of it. We spend over \$10,000 annually on composting as is.

- Daniel Myers, Owner of Loyal Nine Restaurant

Our Story and Approach

Summary: We are a network of current and former Cambridge residents concerned about climate change who have investigated the topic of restaurant food waste for 3 years in order to deliver this report.

Cambridge Table to Farm started in 2018 as a small group of Cambridge residents concerned about climate change. For six months, we held bi-weekly brain-storming sessions, researching how we could make an impact on emissions by inviting the broader community to our home in Porter Square. Reading through literature, we identified reducing food waste via composting / anaerobic digestion as a unique challenge. The opportunity to make an impact was enormous: 100 restaurants composting calculated to be the equivalent of planting 800,000 trees (more information from [The Environmental Argument](#)). Composting was an approachable aim for a grassroots organization. Lastly, we were all familiar with the solution space as avid supporters of Cambridge's residential composting initiative.

For the ensuing year, we interviewed grocery stores, restaurant owners, organics haulers, and more to better understand where food was being wasted and how we could help. In these interviews, we recorded the amount of food that different institutions were throwing away, calculated the environmental impact, assessed the general appetite for composting, and observed potential barriers. During this time, our group grew from a few close friends to a large network of Cambridge professionals spanning engineers, environmentalists, designers, medical students, teachers, investors, consultants and more.

By the end of 2019, it was clear that there was a strong appetite for composting amongst Cambridge restaurants, and a tremendous opportunity to make an impact on the environment.

We decided to test this hypothesis with a small pilot project. We selected five restaurants that had expressed higher-than-average interest in composting, spanning different restaurant categories (franchise, small restaurant, medium restaurant, large restaurant). We compiled comprehensive reports of the environmental impact and provided the restaurants with competitive quotes from haulers to see if we could convince a few to start composting. Of the five:

- One started composting after receiving our quote and has plans to start composting at their next restaurant
- One started composting in between the time of our first contact and when we actually delivered their quote
- Two did not start composting, despite a strong interest. They taught us about the hurdles that larger restaurants face in changing the operational flow of a kitchen, and informed the paper's selection of a target market
- One ceased communication with us almost immediately after the pandemic began, and we have been unable to retrieve conclusive results

Navigating the pandemic has been challenging. Restaurants were (and still are) struggling, and it no longer seemed appropriate to ask these restaurants to consider composting as they dedicated their resources to survival. We took the opportunity to pivot our approach, meeting with members of different nonprofits and governmental organizations to reassess our strategy. Out of this period, we arrived at a singular conclusion: a municipal-grade composting program would be the best path forward. It would be amazing for the environment. It would help restaurants financially. Lastly, it would be beneficial for the city as landfills approach capacity and statewide emissions fail to meet standards.

In this report, we have presented our case for these ideas, as well as the community support for our proposal. It is our dream that many cities will provide their restaurants with commercial composting programs some day. If Cambridge leads the way, other cities will follow.

Appendix

Full Petition Signed by the Community

Below is the proposal we circulated throughout the Cambridge community:

As we've witnessed in our neighborhood, many restaurants have closed in Cambridge since the start of the COVID-19 pandemic. Additionally, the urgency of taking bold and immediate action to reduce our community's greenhouse gas emissions has never been more clear. By helping our restaurants waste less food, Cambridge can take real, measurable steps to mitigate these dual crises. A citywide commercial composting program for restaurants and small businesses could be implemented quickly and would be a win-win for all stakeholders.

Support our restaurants:

- *Help restaurants avoid penalties for non-compliance with MassDEP food waste limits*
- *These penalties are set to become significantly more stringent in October 2021, without a compliance roadmap*
- *Enable restaurants to save money on trash-hauling contracts via volume reduction*

Support our environment:

- *100 Cambridge restaurants composting will divert upwards of 5,000 tons of CO₂-eq emissions per year, comparable to planting 800,000 trees according to US EPA estimates*
- *Environmental think tank, Project Drawdown, has consistently ranked reducing food waste as one of the top 3 ways to address climate change worldwide*

Support our community:

- *Improper trash management causes public health and environmental impacts, with a disproportionately negative impact on low-income communities*
- *Landfills are filling up; proper waste-stream disposal saves taxpayers money on fees*

With this Petition, Cambridge Table to Farm and all signatories together urge the City to:

1. *Develop a pilot program for small businesses to begin commercial composting*
2. *Set an explicit goal of 100 participants and track total food waste diverted as part of the City's Sustainability Dashboard*
3. *Fund a budget of \$300k, similar to the Small Business Recycling Pilot of 2018, and limit participation to businesses with less than 50 employees, with the aim of expanding to larger businesses in the future*
4. *Establish a proceeding and application program for expanding to participants greater than the 50-employee threshold*

Petition Signatures

Residents

Full list of names with addresses can be found [here](#). Visibility is restricted to City Council members for the privacy of the residents.

Representatives from Restaurants

1. Jaap Overgaag (Charlie's Kitchen)
2. Joshua Gerber (1369 Coffeehouse)
3. Anthony Brooks (The Coast Cafe)
4. Sandy McCullough (Joe Sent Me)
5. Justin Pronovost (Curio Coffee & Wine)
6. Eric Shepherd (OTTO)
7. Servio Garcia (BISq)
8. Liza Shirazi (Revival Cafe + Kitchen)
9. Angela Hofmann (Nussli118)
10. Narinder S Guhanian (Passage To India)
11. Patrick Lynch (Bon Me)
12. Heather Mojer (State Park)
13. Evan Harrison (Vincent's Corner Grocery at Cafe du Pays)
14. John Kessen (Mamaleh's Delicatessen)
15. Matt Wallace (BerryLine)
16. Charbel Salameh (Cafe Barada)
17. Kale Rogers (Spyce)
18. Suzanne Mermelstein (Mariposa Bakery)
19. Erin Miller (Urban Hearth)
20. Kathryn Vallier (The Dial)
21. Simons Yu (Simon's Coffee Shop)
22. Marci Joy (Highland Fried)
23. Patrick Magee (Atwood's Tavern)
24. Philip Bannatyne (Cambridge Brewing Company)
25. Daniel Myers (Loyal Nine)
26. Cayla Marvil (Lamplighter Brewing Co.)
27. Sarah Brande (Yume Ga Arukara)
28. Michaela Sheridan (Lone Star Taco Bar)
29. Tamara Allen de Martinez (2nd Street Cafe)
30. Jaime Guyon (Basil Tree Catering)
31. Eric Cooper (Forage)

Representatives from Other Local Businesses

1. Samantha Putos (Curio Spice Company)
2. Jeremy Blaustein (Formaggio Kitchen Kendall)
3. Linda Khachadurian (Chipper Confections)
4. Marcus Johnson Smith (Fresh Pond Tea Association)
5. Katie Collings (Camberville Dog Treats)
6. Marika McCoola (Porter Square Book)

Representatives from Other Organizations

1. David Maher (Cambridge Chamber of Commerce)
2. Jason Alves (East Cambridge Business Association)
3. Michael Monestime (Central Square Business Improvement District)
4. Denise Jillson (Harvard Square Business Association)
5. Steven Nutter (Green Cambridge)
6. Mladen Gajic (PlasticScore)
7. Claire Kozower (Farm Aid, Inc.)
8. Tom LeClair (Black Earth Compost)
9. Camille Tuason Mata (The EcoPlanning Institute)
10. Hubert Murray (Hubert Murray, Architect & Planner)
11. Amy Antczak (Mothers Out Front)
12. Adam Fishman (Onora)
13. Nicola Williams (The Williams Agency and The Sustainable Business Network of Massachusetts)

Restaurant Interviewing Methodology

For over a year, our team dined at restaurants in the community bi-weekly and spoke directly with General Managers and/or Owners. Our goals for these discussions included:

1. Determine whether they already composted
2. If they were not composting, determine their interest in composting
3. Calculate the quantity of food they were wasting per year
4. Calculate the potential environmental impact
5. Identify their barriers to composting

We were immensely fortunate to meet with such a wonderful community of restaurant leaders!

When ascertaining the quantity of food restaurants were wasting annually, we would bring a 64-gallon trash bag and ask how many bags were thrown away nightly. We then asked what percent of the volume was food waste. In many cases, restaurant owners also let us inspect the size of their dumpster, which allowed us to double check estimates. While this process was imperfect, taking the average of scores of restaurants over the course of a year enabled us to conclude a reasonable figure of 60 tons of food waste per year.

To double check ourselves, we used secondary sources to calculate that the average US restaurant wastes about 18 tons of food per year. With Cambridge being the target community, a densely packed urban area, and because our target market was sit-down restaurants, not take-out businesses which biased the national average, we felt further confident that 60 tons per year was a reasonable estimate.