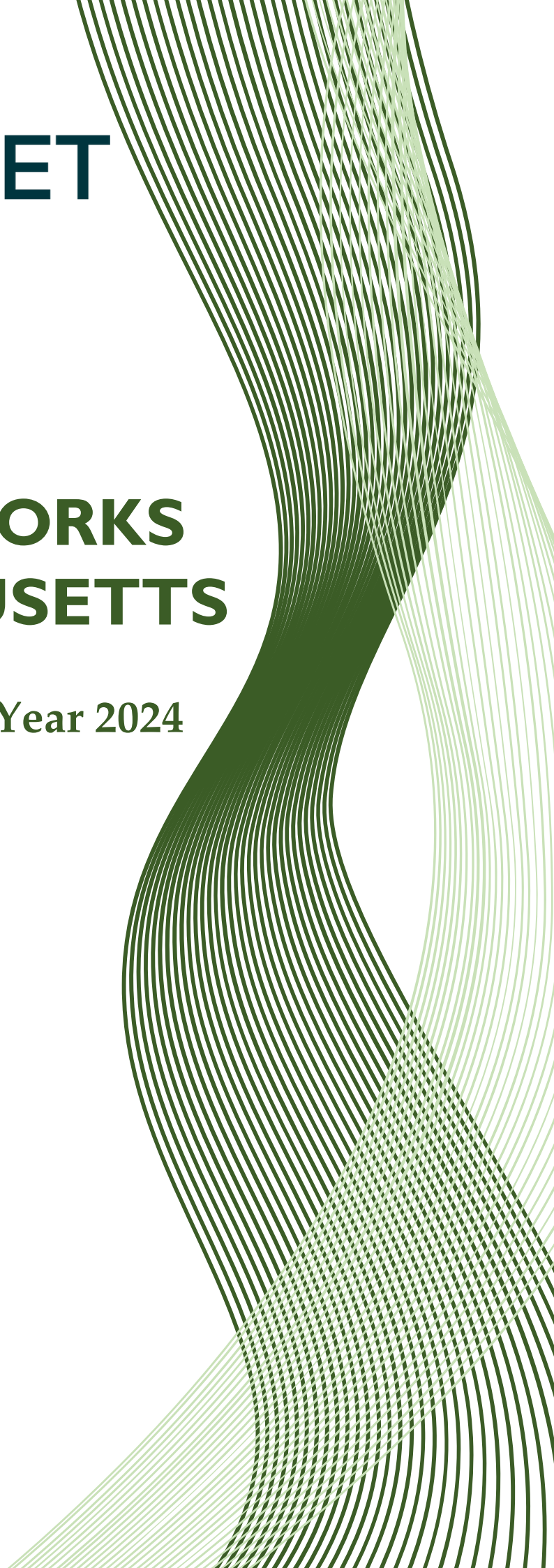




# **RECYCLINGWORKS IN MASSACHUSETTS**

**Year End Report: Fiscal Year 2024  
(July 2023 – June 2024)**



# Contents

<b>Introduction.....</b>	<b>2</b>
Commercial Food Waste Diversion .....	2
Serving Environmental Justice Populations and DEI Goals .....	3
Waste Reduction and Reuse.....	3
<b>Email/Phone Hotline.....</b>	<b>4</b>
Live Interpreter .....	7
<b>RecyclingWorks Website.....</b>	<b>7</b>
Find-a-Recycler Tool .....	8
Website Statistics .....	8
<b>RecyclingWorks Newsletters .....</b>	<b>11</b>
<b>RecyclingWorks Social Media .....</b>	<b>12</b>
<b>Marketing, Outreach, and Education.....</b>	<b>13</b>
Media Engagement .....	13
Case Studies.....	13
Marketing Materials.....	14
Best Management Practices for Reusable Foodware .....	15
Marketplace Data .....	15
Outreach .....	17
Events.....	18
<b>RecyclingWorks Spring 2024 Forum.....</b>	<b>19</b>
<b>Technical Assistance .....</b>	<b>20</b>
MassDEP Warning Letter Recipient Assistance.....	20
Trends and Observations from Technical Assistance.....	21
<b>Compost Site Technical Assistance .....</b>	<b>22</b>
<b>Technical Assistance for Deconstruction and Diversion of Construction and Demolition Materials.....</b>	<b>22</b>
<b>Conclusion .....</b>	<b>23</b>

## Introduction

The Center for EcoTechnology (CET) is proud to submit the FY24 year-end report for RecyclingWorks in Massachusetts (RecyclingWorks) to the Massachusetts Department of Environmental Protection (MassDEP). CET and MassDEP continued to provide waste diversion assistance to the commercial and institutional sectors through a robust suite of services. The following represents approximated measurable impacts this fiscal year:

- 1,781 tons of material diverted from disposal, contributing to an overall cumulative direct program impact of nearly 325,781 tons of material diverted since 2013
- 764 units of fluorescent lamps recycled
- 1,832 total phone and email hotline inquiries
- In-person or virtual technical assistance (Mini TA and Tiered TA) provided to 199 businesses
- Tier 1 Compost Site TA provided to 5 operations, and Tier 2 Compost Site TA provided to 2 operations
- Over 106,000 visits to [www.recyclingworksma.com](http://www.recyclingworksma.com)
- 31 speaking engagements/events, reaching 4,664 attendees

Key objectives identified for FY24 included commercial food material diversion and advancing principles and initiatives of Diversity, Equity, and Inclusion (DEI), with a particular emphasis on engaging businesses in Environmental Justice (EJ) communities and minority owned businesses in Massachusetts. Here are a few highlights of CET's activities that support these priority areas:

## Commercial Food Waste Diversion

- Completed a written case study featuring Gorton's Seafood, a seafood manufacturer and distributor in Gloucester. The seafood center has robust practices in place to recover and upcycle unsold or surplus fish products, as well as to recycle food scraps.
- Hosted the RecyclingWorks Spring 2024 Hybrid (virtual and in-person) Forum on June 10<sup>th</sup> with over 75 attendees. The forum focused on diversion of commercial food material from disposal. Speakers highlighted successful implementation of wasted food diversion and recycling initiatives.
- Created and published a Food Scraps Separation training [video](#).
- Conducted targeted outreach to business sectors that generate food waste, including restaurants, malls with retail and food service, hotels and venues, and country clubs.
- Conducted an outreach strategy with the food scraps hauler and composter Second Chance Compost to promote a composting pilot, in which four businesses are participating.
- Provided compost site technical assistance to six composting operations that process food materials.
- Through Tiered TA, Mini TA, and Hotline assistance, diverted a collective 500 tons of organic material from disposal, instead directing this material to composting, animal feed, or an anaerobic digestion outlets.
- Created a graphic to promote technical assistance for food waste diversion and on-site composting to agricultural businesses.
- Updated a set of five [sector-specific waste ban compliance tips](#) to reflect the half-ton commercial food material disposal ban threshold.

- Organizing a Practical Skills Workshop for Commercial Compost Site Operators, with an emphasis on composting food materials using the aerated static pile (ASP) method. The workshop will be held in-person at Black Earth Compost in Groton on October 10, 2024.

### **Serving Environmental Justice Populations and DEI Goals**

- Conducted targeted outreach to businesses located in or serving Environmental Justice communities, in addition to minority and/or immigrant-owned businesses.
- Conducted targeted outreach to identity-based groups such as the Black Economic Council of Massachusetts, BlackBoston.com, and the Latin American Business Organization (LABO).

#### ***Translation & Interpretation for Language Access***

- Added a link to the Spanish-language version of the Harvard Food Law and Policy Clinic updated Fact Sheet on liability protections for food donation to the RecyclingWorks [food donation guidance webpage](#).
- Updated the [Source Separation Guidance](#) page to describe and embed the new training video, available with both English and Spanish voiceovers. The video was also linked on the [Restaurants](#) sector page.
- Recorded and implemented a Spanish-language greeting for the hotline that allows callers to indicate whether they need service in Spanish.
- Developed a Spanish-language program overview video. Boosted a social media post that featured the newly created overview, specifically targeting relevant audiences such as Spanish-speaking business owners and Massachusetts-based Latino identity groups.
- Printed a limited number of RecyclingWorks Flyers in Spanish and Portuguese for targeted outreach and events.
- Updated a [recycling training video for the hospitality sector](#) with Spanish subtitles.
- Created a [rack card](#) with information on RecyclingWorks waste assistance in English, Portuguese, and Spanish, in addition to placeholder documents for four additional languages (Haitian Creole, Nepali, Simplified Chinese, and Traditional Chinese), with translations for the additional languages provided by the City of Somerville.

### **Waste Reduction and Reuse**

- In partnership with MassDEP and state and local health officials, CET hosted three stakeholder engagement meetings (October 12, 2023; December 7, 2023; and August 6, 2024) to continue development of the Reusable Takeout Containers Best Management Practices (BMPs). The finalized guidance will be posted on the RecyclingWorks website in Fall 2024.
- Through Tiered TA, Mini TA, and Hotline assistance, directed a collective 74 tons of material to reuse outlets, and reduced 1 ton of material from being generated in the first place.
- Continued regular involvement with the MassDEP Deconstruction Workgroup, which serves as an extension of the MassDEP Reduce & Reuse Working Group.
- Produced a [business spotlight](#) highlighting Johnny's Luncheonette's reusable takeout container program.
- Posted a blog covering RecyclingWorks' [Top 5 Tips to Reduce Waste at Work](#)

## Email/Phone Hotline

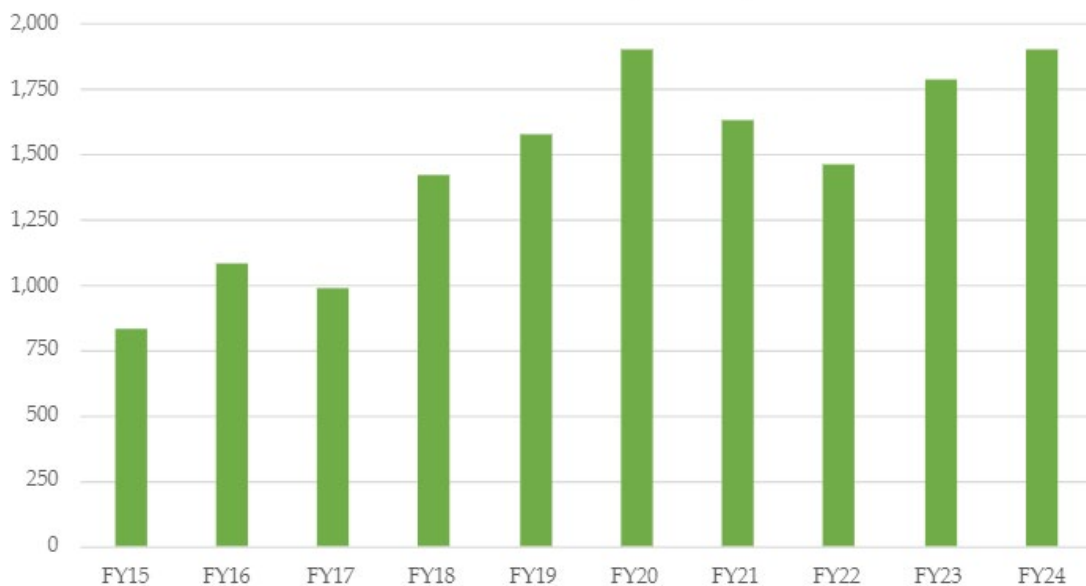
CET staff operate the RecyclingWorks hotline phone and email service. People reaching out to RecyclingWorks are directed to resources on the website, referred to CET field staff for follow up, or processed for continued levels of assistance. In FY21, CET began the use of a third-party interpreter service, which enables RecyclingWorks hotline staff to assist non-English speakers as needed. Additionally in FY21, CET recorded and implemented a Spanish-language greeting for the hotline that allows callers to indicate whether they need service in Spanish.

During FY24, CET staff handled 1,896 phone and email RecyclingWorks hotline inquiries, exceeding the number of inquiries handled in FY23 (1,784).

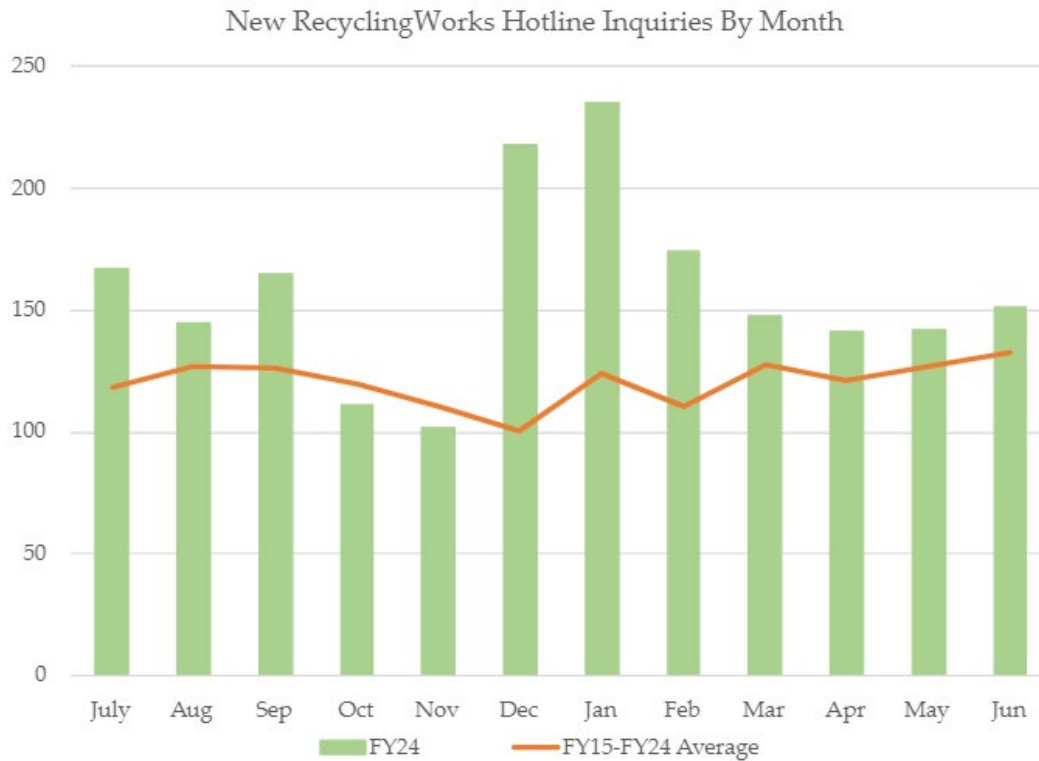
### Summary Hotline Statistics, Fiscal Years 2015-2024

	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24
New Requests from Businesses & Institutions	735	988	870	1,371	1,580	1,853	1,574	1,386	1,695	1,795
New Requests from Processors & Haulers	92	92	112	46	51	48	52	47	89	101
<b>Total New Requests</b>	<b>827</b>	<b>1,080</b>	<b>982</b>	<b>1,417</b>	<b>1,571</b>	<b>1,901</b>	<b>1,626</b>	<b>1,458</b>	<b>1,784</b>	<b>1,896</b>
<b>Total Requests Completed</b>	<b>842</b>	<b>1,061</b>	<b>960</b>	<b>1,362</b>	<b>1,631</b>	<b>1,903</b>	<b>1,593</b>	<b>1,392</b>	<b>1,511</b>	<b>1,832</b>

### Total New Hotline Requests by Year



During FY24, hotline volume started off slightly above the FY16-FY23 average between July 2023 and November 2023, with a notable spike in activity during December 2023 and January 2024, when CET expanded the RecyclingWorks Newsletter list to include RecyclingWorks contacts acquired through outreach who were not previously receiving the newsletter. The hotline volume was steady during the remainder of the fiscal year, with staff fielding between 100-220 inquiries per month.



Businesses continue to express great appreciation for this free hotline service. As in past years, the CET staff fielded inquiries on a broad array of topics. Here are a few common themes observed during FY24:

- **Mattresses and Textiles** – We continue to receive many questions from both residents and businesses looking for reuse and recycling outlets for mattresses and textiles, related to the November 2022 waste ban changes. Similar to last year, the hotline received a particularly high volume of mattress inquiries from Boston property managers and residents.
- **Wasted Food** – We received many inquiries about wasted food diversion, including businesses, organizations, and residents seeking food scraps collection services.
- **Deconstruction** – We fielded a consistent influx of inquiries from businesses in the construction and remodeling industry expressing interest in deconstruction and the reuse of building materials. CET is an active participant in the MassDEP deconstruction working group, which generates inquiries for assistance.

- **Furniture and Equipment Reuse** – We fielded questions from businesses and institutions, colleges and universities, and residents, seeking reuse outlets for surplus materials such as furniture, electronics, building materials, and medical equipment.
- **Pallet Recycling** – We regularly received questions from businesses about recycling wooden pallets.
- **K-12 Schools & Universities Establishing or Restarting Food Waste Programs Stalled During the Pandemic** – The impacts of the COVID-19 pandemic on recycling and food waste diversion programs in K-12 schools and colleges continued into FY24, and were reflected in the inquiries we received. Many schools’ programs were temporarily stalled due to supply chain issues and staffing turnover. Schools that contacted RecyclingWorks, and/or were referred through The Green Team program, were also interested in reducing waste from single-use disposables like cutlery, takeout, and packaging materials.
- **Construction & Demolition Materials** – We fielded a variety of questions about recycling and reuse of construction and demolition (C&D) materials, including calls about specific materials such as gypsum, brick, and concrete.
- **Plastic** – We received questions about different types of plastic recycling, including plastic film, rigid plastic, and black plastic recyclability.
- **Managing Potentially Hazardous Materials** – We continued to field questions from residents and businesses regarding outlets for materials such as fluorescent bulbs, oil-based paint, electronics, thermostats, and lithium batteries.
- **External Requests for Information** – As in previous years, we regularly received inquiries from media, researchers, students, other state agencies, and regional and national organizations focused on waste diversion.

### **Tonnage Diversion - Hotline & TA Activity**

As shown in the table below, approximately 1,781 tons of material were directly diverted due to combined hotline, Mini TA, and TA activities in FY24, a notable increase from the previous year. Out of this total, 68% (1,202 tons) of the material was recycled, 28% (500 tons) consisted of organics diverted for composting, anaerobic digestion, or animal feed, 4% (74 tons) was reused, 0.2% (3.5 tons) was surplus food donated, and 0.1% (1 ton) was reduced (waste prevented). Note that this tonnage reflects only activity that could be directly quantified and confirmed, while the actual impact of the RecyclingWorks program at large is likely much greater.

**Waste Diversion as a Result of FY24 Hotline, Mini TA, and TA Activities\***

Type of Diversion	Annual Tonnage Diverted	Percentage of Total Diversion
Recycled	1,202 tons	68%
Reused	74 tons	4%
Reduced	1 ton	0.1%
Food Donated	3.5 tons	0.2%
Organics Diverted**	500 tons	28%
<b>Total</b>	<b>1,781 tons</b>	<b>100%</b>

\*Tonnage diverted includes only activity that could be quantified and confirmed during FY24.

\*\*Organics includes food and non-food organics diversion for composting, animal feed, or anaerobic digestion.

## Live Interpreter

In FY24, the hotline service provided critical language support to individuals across Massachusetts by using a live interpreter Service, Lingualex. The live interpreter service was utilized a total of eight times, ensuring that non-English-speaking callers had access to the same high-quality assistance as everyone else. This service has been an essential component of our commitment to inclusivity and accessibility, allowing us to better serve a diverse population with varying language needs.

## RecyclingWorks Website

In FY24, CET continued to maintain and update the RecyclingWorks website and Find-a-Recycler database. Website content development and improvement during the year focused on waste funding opportunities for businesses, timely food waste topics, and language translations for existing resources. Here is a summary of the website content developed and updated during FY24:

- Published 12 new blog posts on topics such as:
  - [Massachusetts Business Contracting for Organics Hauling in 2022](#)
  - [RecyclingWorks 2023 Year End Report](#)
  - [Introducing the EPA's New Wasted Food Scale](#)
  - [NRDC Dispels Food Donation Myths in New Video](#)
  - [RecyclingWorks' Top 5 Tips to Reduce Waste at Work](#)
  - [2024 MassDEP Recycling & Reuse Business Development Grant Accepting Applications](#)
  - [2024 MassDEP Reduce, Reuse, Repair Micro-Grant Applications Now Open!](#)
  - Business Spotlights:
    - [Simmons University's Deconstruction Project: A Timeline for Success](#)
    - [Johnny's Luncheonette Implements a Reusable Takeout Container Program](#)
    - [Sustainability on Campus: MIT's Decade-Long Commitment to Food Material Waste Reduction](#)
    - [Historic Legacy with a Bold Future: Spotlight on Bombyx Center for Arts and Equity](#)
    - [Reducing Waste One Dumpling at a Time: Mei Mei's Sustainability Initiatives](#)
- Added a link to the Spanish-language version of the Harvard Food Law and Policy Clinic updated Fact Sheet on liability protections for food donation to the RecyclingWorks [food donation guidance webpage](#).
- Updated the [Source Separation Guidance](#) page to describe and embed the new training video, available with both English and Spanish voiceovers. The video was also linked on the [Restaurants](#) sector page.
- Replaced outdated EPA hierarchy of food waste solutions with new [EPA Wasted Food Scale](#) on all pages mentioned, including [Source Reduction](#) and [Food Donation](#).



- Retired the College & University Forum webpage on the RecyclingWorks website, since specific forums for that audience are no longer hosted, then moved related content to the [College & University Sector page](#).
- Updated the RecyclingWorks [Forum](#) page to include a summary of the most recent Spring 2024 Forum, description of panelists, and event recording.

### Find-a-Recycler Tool

During FY24, CET added or updated 23 listings for haulers or processors in the [Find-a-Recycler tool](#). As a continued result of the MassDEP waste ban changes, we have noticed trends of textile and mattress service providers contacting the hotline to request their services be listed in the Find-A-Recycler database. Prior to publishing new listings, CET employees inquire about end sites to ensure that reputable recycling is occurring. CET also edited and/or removed existing listings when learning new information through hotline inquiries or otherwise encountering out-of-date information in the database. As of the end of FY24, there are 448 published listings in Find-a-Recycler, a net increase of 12 listings compared to the end of FY23.

### Website Statistics

Starting in July 2023, Google Analytics (G4) simplified the analytics which adjusted user information and combined sessions and views. As such, total page views for FY24 are not displayed in the below table. In total, there were 106,445 website visitors and 137,531 sessions in FY24, a decrease and increase respectively over FY23. Between FY15 and FY24, the number of visitors and sessions has increased by 97% and 112% respectively. As in previous years, most sessions in FY24 represented new visitors to the website.

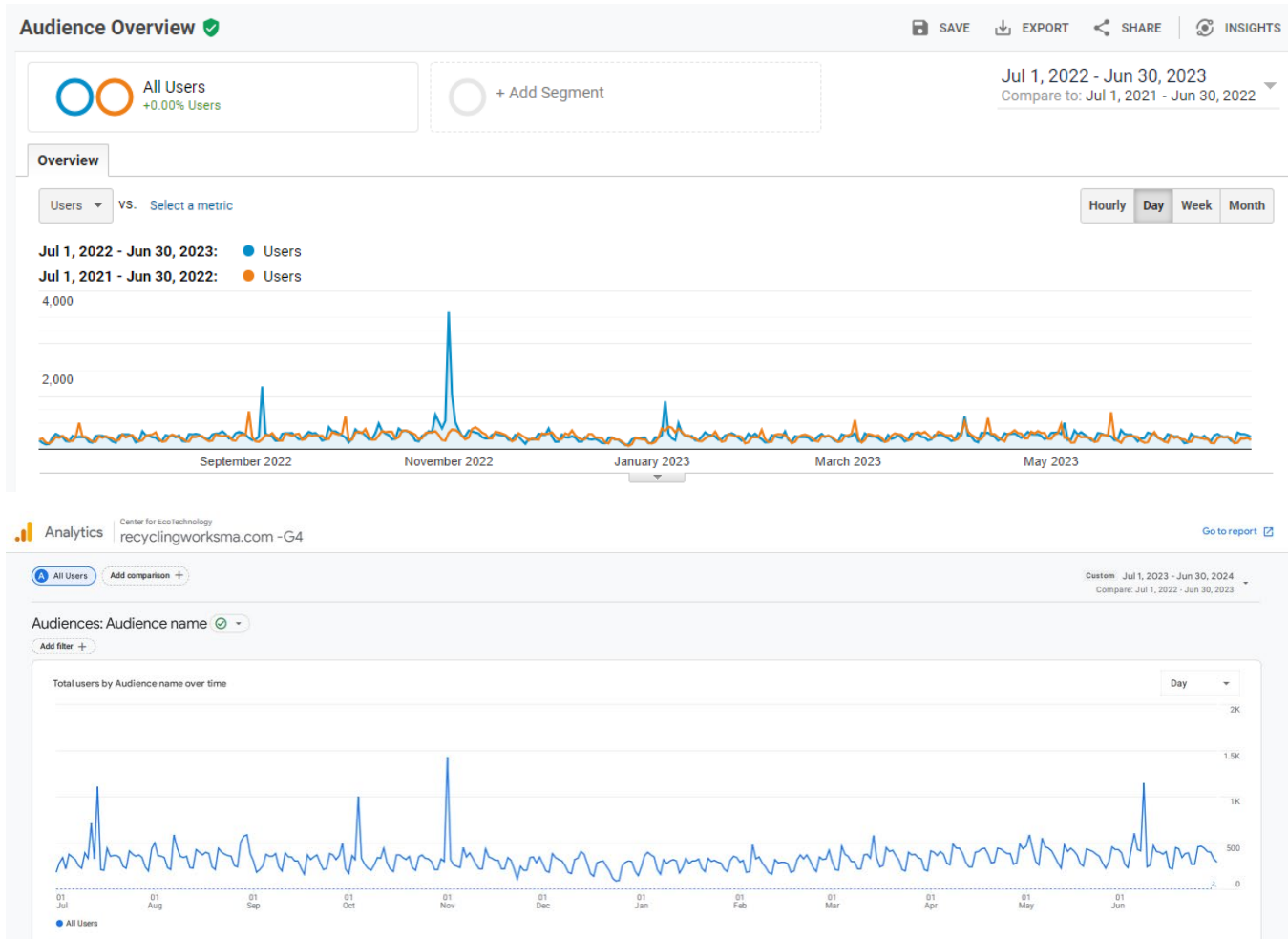
<b>Web Traffic Statistics FY15-FY24</b>			
	Visitors	Sessions	Page Views
FY 2015	54,000	65,000	143,000
FY 2016	55,521	69,572	149,315
FY 2017	57,995	73,186	135,528
FY 2018	72,020	88,896	171,470
FY 2019	88,635	110,347	206,013
FY 2020	110,633	134,585	237,213
FY 2021	138,645	149,895	245,435
FY 2022	104,252	127,503	210,606
FY 2023	110,655	136,782	236,382
<b>FY 2024</b>	<b>106,445</b>	<b>137,531</b>	<b>N/A</b>
Percent Change FY2023 – FY2024	-4%	0.6%	N/A

Considering the Google analytics switch, which was out of our control, the team reviewed the data and proposed tracking alternate data to better report website statistics going forward: Total Users, New

Users, and Returning Users, as seen in the new table below. These data points provide a better picture of website reach and growth over time, as well as help us better understand user behavior to improve marketing strategies.

	Total Users	New Users	Returning Users
<b>FY 2024</b>	<b>106,445</b>	<b>104,137</b>	<b>2,308</b>

### RecyclingWorks in MA Website Traffic



Analyzing patterns in website traffic during FY24 reveals that the largest number of users in a single day (1,427 users) visited the website on Wednesday November 1, 2023, when the monthly newsletter was sent out. This newsletter included information about the development of the Reusables BMP, as well as resources for mattress, textile, and wasted food diversion, marking the one-year milestone since updates were made to the MassDEP waste disposal bans. The day with the second largest number of users was Friday June 7, 2024, when CET sent out the June RecyclingWorks newsletter. This newsletter

included additional agenda details for the RecyclingWorks Spring 2024 Forum, as well as a business spotlight on Mei Mei Dumplings.

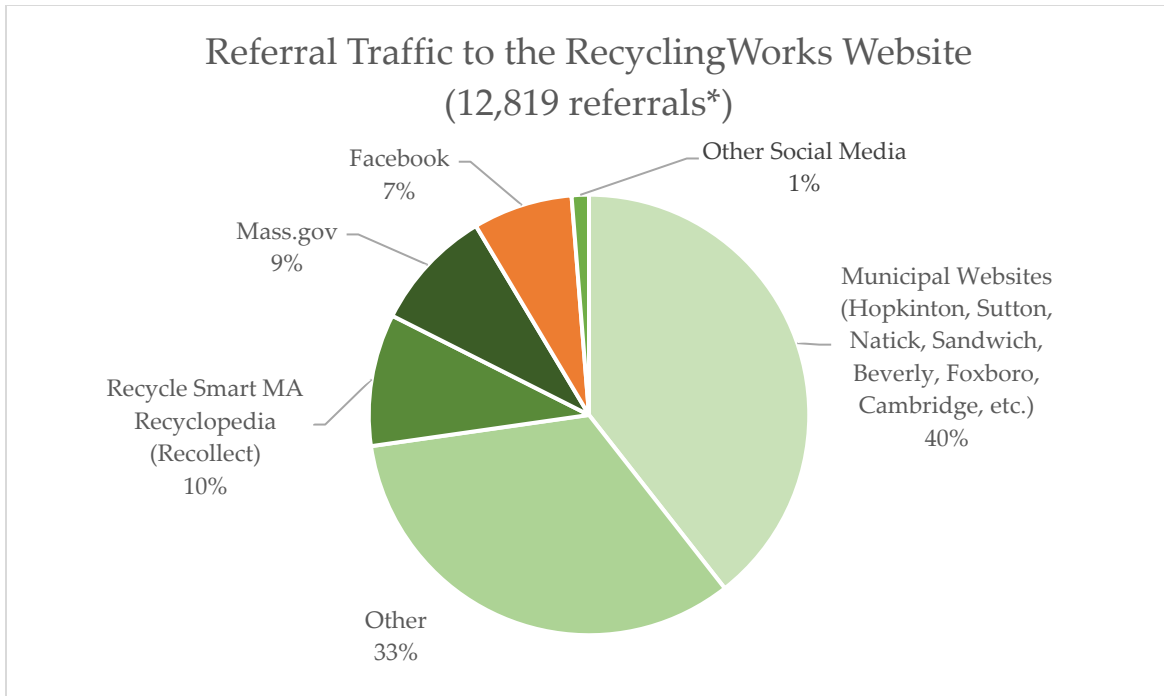
The chart below highlights the most common languages spoken by users visiting the RecyclingWorks website in FY24. After English, the second most common language is Spanish, which provides evidence of success in reaching the desired audience of our increasing number of Spanish materials. As CET continues to focus on accessibility by increasing translated materials, we hope to reach a wider multi-lingual and diverse audience.

Language	Users
English	101,997
Spanish	2,869
Chinese	782
Portuguese	142
French	86
Korean	43
Russian	41
Japanese	27
German	15

Most users visiting the RecyclingWorks website arrive via search engine or direct link, and the remaining website traffic is referred from other websites (12,819 referrals). The graph below highlights some of the top sources of referral traffic.

As in previous years, several municipal websites serve as a significant source of referral traffic to the RecyclingWorks website (40% collectively). The seven municipalities listed in the figure below account for more than half of the visitors referred from municipal websites.

8% of referral traffic was from social media channels, including Facebook, X (formerly Twitter), and LinkedIn. This is lower than in FY23, when 11% of referral traffic was driven from Facebook, continuing a downward trend. Consistent with FY23, other notable referral sources include Mass.gov and the MassDEP Recycle Smart MA Recyclopedia tool. Several listings in the Recyclopedia reference the RecyclingWorks program, including those related to construction and demolition materials. The “Other” category is larger this year due to the new G4 Analytics labeling a large group of users as “unassigned”. We will set up UTM parameters to better track those referrals for FY25.



\*Excludes web traffic from search engines, direct searches, and spam referral sites.

### Top RecyclingWorks in MA Webpages Visited in FY24

Page	Page Views
Mattresses Material Guidance	13,119
Textiles Material Guidance	9,589
Construction and Demolition Search Results Page	6,825
Pallets Material Guidance	6,585
Construction Material Guidance	6,222
Lenox Valley Waste Transfer Facility Database Listing	5,670
Find A Recycler Tool	5,437
HandUp Mattress Recycling Listing Page	4,321
Food Waste Estimation Guide	3,886
Electronics Material Guidance	3,605

## RecyclingWorks Newsletters

As outlined in the work plan, CET creates and sends 10 monthly RecyclingWorks newsletters each year, excepting January and July. The email list for this newsletter increased from about 7,516 to 9,736 subscribers in FY24, representing a 29.45% increase in subscribers over the course of the fiscal year. In

December, CET expanded the recipient list to include RecyclingWorks contacts acquired through outreach who were not previously receiving the newsletter, which explains the increase in recipients.

Some of the topics covered in the [newsletters](#) during FY24 include:

- New business spotlights on businesses assisted by RecyclingWorks and/or recognized for their achievements in waste reduction, such as [Mei Mei Dumplings](#) and the [Bombyx Center](#).
- A [“One-Year Milestone”](#) of what has come from the MassDEP waste disposal ban changes, and resources to help businesses implement new diversion programs for these materials.
- Additional MassDEP announcements, including grant programs, upcoming opportunities for public engagement, and changes to existing MassDEP educational materials.
- Highlights of existing resources and services, such as: “RecyclingWorks’ Equipment and Furniture Reuse Guidance for Businesses, Institutions, & Schools,” “RecyclingWorks Source Reduction of Food Waste Guidance,” “RecyclingWorks’ Top 5 Tips to Reduce Waste at Work,” and more.
- Highlights of RecyclingWorks-specific events, like the [RecyclingWorks in Massachusetts Spring 2024 Hybrid Forum](#), and RecyclingWorks at external events, such as the 2024 MassRecycle Conference & Trade Show, Massachusetts Farm & Sea to School Conference, the Food and Beverage Manufacturers Webinar, and more.

RecyclingWorks newsletters have been an integral monthly communication tool to remind business and institutions about the resources we offer. Through business spotlights, highlights on RecyclingWorks guidance documents, and calling attention to MassDEP materials, changes and announcements, the newsletters allow a steady stream of recipients to come to the RecyclingWorks website.

## **RecyclingWorks Social Media**

RecyclingWorks has an active presence on both Facebook, as of FY18, and X (formerly known as Twitter), as of FY17.

At the end of FY24, the RecyclingWorks Facebook account had 576 followers, an increase of 7.5% from FY23. In addition to posting an average of twice per week, CET strategically identified content to boost on Facebook, which effectively creates a paid advertisement with much higher visibility than a basic post. For example, CET boosted a post featuring the newly created Spanish language technical assistance overview, specifically targeting relevant audiences, such as Spanish-speaking business owners and Massachusetts-based Latino identity groups. The week-long boosting campaign achieved 11,041 impressions, coming from 6,799 unique user views, which generated 402 video clicks, averaging a spend of about \$0.50/click. Aside from that boosted advertisement, the most-viewed Facebook post in FY24 was one with over 742 views featuring the annual RecyclingWorks 2023 Year End Report. Other popular posts included one sharing photos and highlights from the 2024 MassRecycle conference, a summary of the RecyclingWorks Spring 2024 Forum, and photos from other waste-related events that RecyclingWorks attended and presented at.

CET also promoted events and other RecyclingWorks content through X. In FY24, CET posted an average of 1-2 times per week. At the end of FY24, the RecyclingWorks X account had 762 followers. Since its rebrand to X in July 2023, we have seen a decline in engagement on the platform, though it is

difficult to discern averages as the platform now requires Premium membership to view profile insights and analytics. Popular posts included those announcing the MassDEP Recycling Market Development Action Plan, sharing newly translated recycling graphics, and featured photos from in-person events.

## Marketing, Outreach, and Education

In FY24, promotional activities included media engagement, developing case studies, speaking engagements and other events, and targeted proactive outreach.

### Media Engagement

CET staff were interviewed about the RecyclingWorks program, Massachusetts waste bans, and other waste-related topics by the following media outlets for articles:

- The Cool Down (July 2023) Textiles Disposal Ban ([view article](#))
- Reduce, Reuse, Recycle Guide Advertisement (2024) ([view article](#))

Additionally, CET staff prepared updates for other organizations to share through their newsletters and social media networks throughout FY24. For example, as requested by MassDEP, CET submitted the following RecyclingWorks updates to be shared in the Northeast Recycling Council (NERC) Monthly Bulletin:

- July 2023 (Summary of new case study on Worleybeds and Ecos Properties)
- September 2023 (Summary of the FY23 Annual Report)
- April 2024 (Save the Date for the RecyclingWorks Spring Forum)
- May 2024 (Registration announcement for the RecyclingWorks Spring Forum)

### Case Studies

In FY24, CET published one written case study on [Gorton's Seafood](#), a seafood manufacturer and distributor with strong diversion programs for food scraps, surplus food, wastewater, cardboard, and more. In December 2023, RecyclingWorks visited Gorton's Seafood Center in Gloucester to observe the facility's material management programs and offer suggestions. Every year, the Seafood Center produces over 100 million pounds of ready-to-cook seafood, including fish sticks and fish fillets.

Gorton's boasts a streamlined recycling collection program in which they utilize wheeled tilt carts to collect materials like cardboard, block liners, and bagged trash together. Special care is used when filling these carts to make it easy to properly unload and separate the materials into their dedicated compactors.

Through the stages of receiving, preparing, par-frying, and packaging fish sticks and fillets, Gorton's doesn't let any fish go to waste. The manufacturer recovers fish that is unsuited to be sold to their primary customer base through upcycling and sending food scraps to an animal feed production facility. Slightly misshapen yet still high-quality fish is redirected to secondary markets, such as providing meals at local correctional facilities. Gorton's also recycles their spent frying oil and wastewater for conversion into biofuel for heating and a sustainable energy source, respectively.

To further improve their material management, Gorton's is addressing logistical challenges that arise due to their compactor servicing schedule, and exploring a film plastic recycling program. Since the initial site visit, RecyclingWorks has been working closely with Gorton's to support improvements to their waste reduction and recycling programs. This case study is inspiration for food manufacturers subject to the commercial food material disposal ban.



## Gorton's Seafood Case Study

An Ocean-Friendly Approach to Waste Reduction

**At-a-Glance**

- ★ Gorton's has a streamlined recycling collection program in which they utilize wheeled tilt carts to collect materials like cardboard, block liners, and bagged trash. Special care is used when filling these carts to make it easy to properly unload and separate the materials into their dedicated compactors.
- ★ Gorton's doesn't let any fish go to waste. They recover fish that is unsold to be sold to their primary customer base through upcycling and sending food scraps to an animal feed production facility.
- ★ Gorton's also recovers their spent cooking oil and wastewater for conversion into biofuel for heating and a sustainable energy source, respectively.
- ★ To further improve their material management, Gorton's is addressing logistical challenges that arise due to their compactor servicing schedule and exploring a film plastic recycling program.

**Fish Stick Manufacturing: Inputs, Outputs, & Byproducts**

When Gorton's produces frozen fish sticks, filets, and other products at their Seafood Center, here are the inputs, outputs, and byproducts involved:

**Inputs:** Fish, breadcrumbs, batter, beer (for beer-battered products), oil, and packaging materials.

**Outputs:** Packaged, finished fish products ready for distribution.

**Byproducts:** Packaging, food scraps, spent frying oil, and wastewater (from cleaning machinery and the facility).

*To learn how Gorton's is sustainably managing the byproducts, read on!*

**Collection & Sorting Logistics for Recyclables**

Covering a footprint of over 100,000 square feet, Gorton's Seafood Center consists of three seafood production floors, several shipping and receiving areas, a waste and recycling storage area, a machine shop, and office facilities. The Seafood Center's team of almost 200 full-time employees receive incoming fish shipments, portion out the fish, cook the fish in batter and breadcrumbs, par-fry the fish, and package finished seafood products for distribution.

To manage the packaging and other materials generated during these processes, staff utilize wheeled tilt carts to gather the following materials together:

- Cardboard
- Block liners (AKA waxed cardboard\*)
- Trash (always bundled in clear plastic bags so that the contents are visible)

\*Waxed cardboard is cardboard that has been coated with a thin layer of wax to make it resistant to moisture. Waxed cardboard cannot be recycled with regular cardboard.

Once the tilt carts are filled, staff bring them to a loading dock area and separate the different material streams. The loading dock has dedicated compactors for trash, cardboard, and block liners. Each compactor is clearly labeled for proper material sorting. While visiting the Seafood Center, RecyclingWorks did not observe any contamination in the compactors. This can be attributed to Gorton's robust employee training program on proper material sorting and clear signage.

Gorton's has an additional recycling area where **bottles and cans** (plastic/metal/glass), scrap metal, and **universal waste** are collected in labeled containers. Republic Services collects these recyclables from the Seafood Center, in addition to servicing the facility's cardboard compactors. With an aligned sustainability mission, Republic Services' GreenCher City actively works with Gorton's to support their waste reduction initiatives.

Gorton's Seafood readily explores opportunities to reuse materials whenever feasible. They prioritize the on-site reuse of pallets before returning them to Ameripac, their cold storage and warehouse business partner. Additionally, Gorton's is investigating reuse options for block liners.



When asked why other companies should establish robust recycling and waste reduction programs, David Gazda, Head of Seafood Center Operations, gave the following reasons:

1. It's the right thing to do!
2. It shows your clients and customers that you're a business they can be proud to partner with.
3. Consumers care about sustainability and will choose brands based on a company's ethics and sustainability practices.
4. It can reduce costs and can ultimately make an operations manager's job easier.
5. It can build a positive work culture around sustainability concepts that resonate with employees.

*Click here to view the written case study featuring [Gorton's Seafood](#)*

## Marketing Materials

In FY24, CET developed new marketing materials and updated existing materials to support increased awareness of waste bans and promote RecyclingWorks' technical assistance. We also made concerted efforts to reach non-English speaking audiences. Examples include:

- Updated a set of five [sector-specific waste ban compliance tips](#), in both English and Spanish, to reflect the half-ton commercial food material disposal ban threshold.
- Updated [digital flyers](#) in English and Spanish to have current information about the waste disposal bans on food materials, textiles, and mattresses.

- Printed a limited number of RecyclingWorks Flyers in Spanish and Portuguese for targeted outreach and events.
- Developed a Spanish-language program overview video to share on social media, and with relevant groups and associations.
- Created a graphic to promote technical assistance for food waste diversion and on-site composting to agricultural businesses.
- Edited and published a [recording of the RecyclingWorks 2024 Spring Forum](#) to add to the RecyclingWorks forum page.
- Updated a [recycling training video for the hospitality sector](#) with Spanish subtitles.
- Created and published a Food Scraps Separation training [video](#) with both English and Spanish voiceovers.
- Created a [rack card](#) with information on RecyclingWorks waste assistance in English, Portuguese, and Spanish, in addition to placeholder documents for four additional languages (Haitian Creole, Nepali, Simplified Chinese, and Traditional Chinese), with translations for the additional languages provided by the City of Somerville.
- Created and purchased a new RecyclingWorks-branded 33.5"x89.75" banner to be used for exhibiting at in-person events.

### **Best Management Practices for Reusable Foodware**

The development of Best Management Practices (BMPs) has become a critical aspect of the RecyclingWorks program, which produces guidance addressing specific business sectors, material types, and/or diversion strategies. BMPs are shared on the RecyclingWorks website, in presentations by CET and MassDEP staff, over the hotline, and to recipients of technical assistance. Moreover, the outreach and stakeholder engagement involved in producing BMPs establishes new contacts and strengthens existing relationships with service providers, generators, and government agencies. This comprehensive process supports the RecyclingWorks program and MassDEP goals.

Providing guidance and technical assistance to help restaurants, colleges, and universities switch from single use to reusable foodware systems is a high priority identified in the MassDEP Reduce & Reuse Action Plan, published in December 2021.

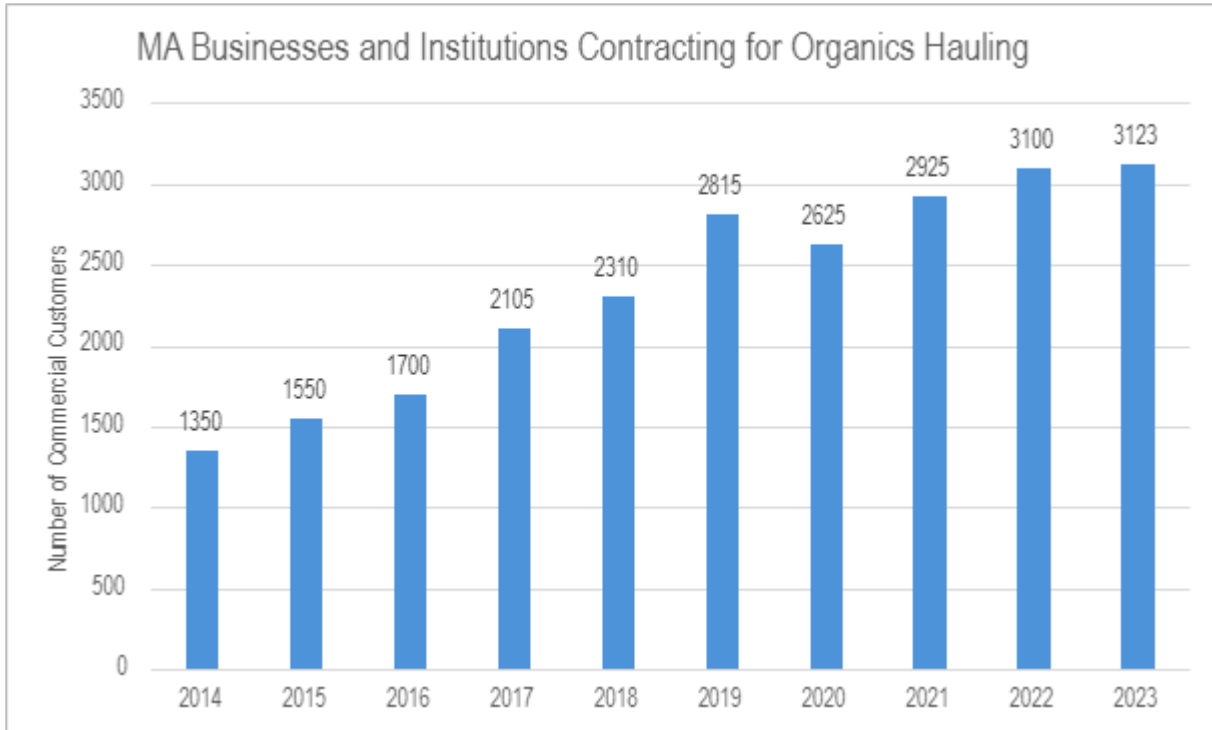
CET and MassDEP initiated BMP development on this topic in FY23, in partnership with stakeholders from the Massachusetts Department of Public Health. In FY24, CET engaged key stakeholders: state and local health departments, restaurants and institutions with reusable foodware offerings, and service providers that support these systems. This project continued throughout FY24. RecyclingWorks hosted three stakeholder engagement meetings (October 12, 2023; December 7, 2023; and August 6, 2024) with breakout rooms to encourage input from all participants. Themes and topics discussed included the differences between establishment-provided and consumer-provided containers, at the intersection of waste reduction and protecting public health. The finalized guidance will be posted on the RecyclingWorks website in the fall of 2024.

### **Marketplace Data**

To measure growth in the wasted food diversion marketplace, CET collects annual data directly from organics haulers on the number of commercial organics customers they serve in Massachusetts. In 2023,



the number of businesses increased to 3,123. While the percentage change from 2022 to 2023 was smaller than the previous change, the number of customers has continued to increase since 2020, when widespread temporary business closures and a shift in waste generation impacted commercial organics diversion activity.



In FY19, CET began conducting annual interviews with food waste prevention technology platforms to quantify the collective impact of these technologies in Massachusetts. Each year, CET follows up with these technology companies to request an update on customer base and additional wasted food prevented over the course of the previous year. All customer and diversion data are self-reported.

In the spring of 2024, CET staff reached out to six food waste prevention companies about activity during 2023. One company declined to share updates, and another was unresponsive despite repeated attempts to collect data. During calendar year 2023, collectively the four companies that responded:

- Worked with 488 commercial customers in Massachusetts.
- Prevented an additional 402 tons of food waste.
- Contributed to preventing more than 12,000 tons of food waste cumulatively since 2018.

CET will research new service providers and interview these platforms again in FY25 to evaluate changes in their impact over time.

Date Reported	Total MA Commercial Customers	New Annual Food Waste Prevented	Total Annual Food Waste Prevented	Companies Reflected in Data
2018 (all time)	145 customers	1,025	1,025	3
2019 (1 year)	154 customers	448	1,473	3

2020 (1 year)	296 customers	169	1,642	4
2021 (1 year)	447 customers	437	2,079	5
2022 (1 year)	576 customers	640	2,719	5
2023 (1 year)	488 customers	402	3,121	4
<b>Total Food Waste Prevented (All Time):</b>			<b>12,059 tons to date</b>	

## Outreach

The objectives of proactive outreach during FY24 included generating TAs, creating opportunities for virtual speaking engagements, recruiting event attendees, engaging municipalities, chambers of commerce, and other organizations as partners to reach new businesses, and adding new entities to the RecyclingWorks newsletter distribution list. As in previous fiscal years, CET prioritized outreach efforts that align with key MassDEP priorities for the year. Here are a few examples of outreach activities during FY24:

- Targeted outreach to:
  - **Priority business sectors that generate textiles, mattresses, and/or food waste**, including restaurants, malls with retail and food service, hotels and venues, country clubs, and mattress manufacturers and retailers.
  - Businesses located in or serving **environmental justice communities**. For example, the in-person outreach campaign in Methuen on August 22nd-23rd, 2023.
  - **Minority and/or immigrant-owned** businesses.
  - Businesses and institutions that CET worked with on energy or waste efficiency projects in the past 5 years.
- Relationship building with business and industry associations, chambers of commerce, and organizations that serve minority-owned businesses, urging them to spread the word about the RecyclingWorks program and MassDEP waste disposal ban changes to their networks. Examples from FY24 include:
  - **Business and Industry Associations** - Sustainable Business Network (SBN), MassRecycle, Environmental Business Council (EBC), High St. Business Association, and Brighton Main Streets.
  - **Identity Organizations** - Black Economic Council of Massachusetts, BlackBoston.com, and the Latin American Business Organization (LABO).
  - **Chambers of Commerce** - Merrimack Valley Chamber, Springfield Regional Chamber, and Metro South Chamber
- Leveraged existing relationships with businesses that received CET energy efficiency assistance to share information about RecyclingWorks technical assistance.
- A successful outreach strategy involved partnering with Second Chance Compost and having the Community Climate Fund sponsor the first six months of food scrap pickup service to encourage businesses to initiate food waste diversion programs. There are four businesses participating in the pilot, all of which have expressed interest in continuing after the pilot ends in November 2024.

**Events**

In FY24, CET attended and/or presented about the RecyclingWorks program, waste disposal bans, best management practices, and other topics at 31 virtual and in-person events, reaching approximately 4,664 attendees.

CET continued to optimize the use of virtual platforms, such as Microsoft Teams, to create effective virtual events which encourage active participation from attendees. The ability to provide virtual events continues to allow for broader participation from different geographies in the state. CET anticipates continuing to deliver a combination of virtual and in-person presentations in FY25. See below for a complete list of events and presentations from FY24:

Event Name	Date
Virtual Recycling Presentation for Newton Small Businesses	7/11/2023
Virtual Recycling Presentation to Newton Large Businesses and Institutions	8/1/2023
Massachusetts Food System Collaborative Waste Reduction Meeting	8/22/2023
Multi-Chamber Event - Amherst Area, Holyoke, South Hadley/Granby, Chicopee	9/13/2023
Sustainable Packaging Coalition Advance 2023	9/25/2023
Town of Franklin Restaurant Expo	9/27/2023
Black Economic Council of Massachusetts (BECMA) Mass Black Business Expo	10/6/2023
Office of Local & Regional Health Monthly Webinar	10/10/2023
Massachusetts Facilities Administrators Association (MFAA) Conference	10/17/2023
Massachusetts Health Officers Association (MHOA) Annual Conference	10/25/2023
Marion Institute 2023 Food Summit	10/25/2023
MassDEP Solid Waste Advisory Committee (SWAC) Meeting	10/26/2023

Event Name	Date
MassDEP Deconstruction Workgroup Meeting	1/17/2024
Green Newton RecyclingWorks Presentation for Restaurants	1/30/2024
2024 New England Restaurant & Bar Show	2/4/2024
2024 MA Local Food Trade Show	2/27/2024
Wasted Food Options on the Cape	3/5/2024
2024 Massachusetts Environmental Education Society (MEES) Conference	3/6/2024
2024 MassRecycle Conference & Trade Show	3/19/2024
2024 MA Farm & Sea to School Conference	3/22/2024
City of Lawrence Food Safety Practices Seminar	3/25/2024
Metro South Chamber of Commerce Board Meeting	3/27/2024
Center for Energy Efficiency & Renewable Energy (CEERE): Food and Beverage Manufacturers Webinar	3/28/2024
Eastham Recycling Committee Spring Forum: Reducing Single-Use Plastics in Food Establishments	4/20/2024

The Rising Tide of Plastic Pollution: Sustainable Business Solutions	11/9/2023
MassDEP Municipal Assistance Coordinators Meeting	11/9/2023
Cape Cod Health Agent Meeting Presentation	12/15/2023
Quaboag Valley Food Policy Council Training	12/18/2023

MassDEP Reduce & Reuse Working Group	4/30/2024
Boston Small Business Expo	5/8/2024
Boston Society of Architects (BSA) and Carbon Leadership Forum (CLF) Embodied Carbon Summit	6/21/2024

Throughout FY24, CET prioritized supporting and participating in events hosted by MassDEP under the following committees and working groups: Solid Waste Advisory Committee (SWAC), Organics Subcommittee, Deconstruction Working Group, Market Development Working Group, and Reduce & Reuse Working Group.

## RecyclingWorks Spring 2024 Forum

In FY22, the US EPA discontinued the national WasteWise and Food Recovery Challenge programs, as it evaluated other potential business engagement program models. MassDEP and CET decided to continue hosting regular Forums to highlight important topics and showcase examples of successful commercial waste diversion programs.

The RecyclingWorks Spring 2024 Hybrid (virtual and in-person) Forum took place on June 10<sup>th</sup> with over 75 attendees. The forum focused on diversion of commercial food material from disposal. Speakers highlighted successful implementation of wasted food diversion and recycling initiatives:

- Westin Copley Place described their various sustainability efforts, including their back of house food scraps separation process and soon to be established food donation program.
- Mei Mei Dumplings shared their multitude of waste prevention and reduction programs currently in place, from sourcing local produce, to diverting food scraps from disposal, to compost.
- UMass Dartmouth described their partnership with Paradox Acres to collect back of house scraps for animal feed and composting.

Additionally, Bonnie Heiple, Commissioner of MassDEP, kicked off the event with opening remarks on the RecyclingWorks Program, state waste disposal bans, and more. CET posted the presentations and the meeting recording to the [RecyclingWorks Forums](#) webpage.

CET distributed a post-event anonymous survey to both in-person and virtual attendees. 80% of respondents rated the quality of all the presentations given as “Excellent.” Additionally, 80% of respondents believed that the content presented during the forum was “Extremely” or “Very” informative. We asked participants what type of content they would like to see addressed in future forums, and 50% of responses indicated they would like to see more on composting and/or food recovery, while other responses inquired about how to decrease the cost of recycling for consumers.

One response to our “further feedback and comments” section said they were “...glad to be there and see great value in this forum.”

## Technical Assistance

RecyclingWorks provides direct Technical Assistance (TA) to businesses and institutions to help implement or improve waste prevention, recycling, and food waste diversion programs. In September 2023, MassDEP and CET agreed that K-12 schools interested in receiving on-site technical assistance to address waste ban materials, including recyclables and food waste, are eligible to be served through the RecyclingWorks program. By administering both The Green Team and RecyclingWorks programs, CET can seamlessly transition the schools we serve between the two programs.

There is significant customization for each facility we assist with TA, to provide a valued and effective service:

- Mini TA is provided when the assistance needed is more than can be completed over the phone in a short amount of time, but not expected to exceed three hours of assistance.
- For on-site TA, CET recommends one of three established tiers to address the waste reduction/recycling opportunity based on several criteria, including interest, complexity, and potential diversion opportunity. These are estimated at the 10, 20, and 30-hour levels.

During FY24, CET provided Mini TA to 80 businesses total. Of these Mini TAs, 68 were completed during the fiscal year, and CET was able to quantify diversion of approximately 172 tons per year from 30 businesses.

CET provided in-depth tiered TA to 119 businesses during FY24. Additionally, one business was approved for assistance but did not proceed with a site visit. Out of 119 TAs, 66 were completed prior to the end of the year. Of the completed TAs, 44 resulted in documented diversion, totaling an estimated 550 tons per year.

Actual waste diversion impact because of RecyclingWorks technical assistance is likely much greater than recorded above, as a result of education and iterative program improvements over time. Recipients of technical assistance frequently tout the benefits of the RecyclingWorks program, often serving as case studies and delivering presentations at RecyclingWorks events.

Type	# In Progress	# Completed	Total Assisted	FY24 Assistance Goal
Technical Assistance	53	66	119	140
Mini TA	12	68	80	120
Warning Letter Assistance	121	20	132	N/A
<b>Totals</b>	<b>186</b>	<b>154</b>	<b>331</b>	

## MassDEP Warning Letter Recipient Assistance

During FY24, CET staff continued to conduct outreach to waste generators who received Warning Letters from MassDEP for waste ban non-compliance.

When a generator responds to CET's outreach, CET encourages RecyclingWorks TA. In FY24, CET contacted 132 recipients of 141 Warning Letters with targeted outreach (often, a single TA recipient has received multiple letters). Out of these 132 businesses, 20 were referred to receive RecyclingWorks assistance and/or confirmed there were programs in place to address the issue.

CET will continue engaging MassDEP warning letter recipients during FY24, including businesses that have been reported to MassDEP as not offering recycling services.

## **Trends and Observations from Technical Assistance**

### *Customer Relationship Building*

- CET continues to receive opportunities for construction and demolition and compost site technical assistance as a follow-up from tiered TA.

### *Working with Haulers*

- Some customers have expressed frustration with their waste haulers due to a lack of assistance in understanding the Waste Disposal Ban regulations, and only stepping in when there is a violation. This reactive approach leaves businesses vulnerable to non-compliance issues.
- There is a continued need for haulers to provide clear communication and guidance to their customers to help them understand quotes, invoices, contracts, and exclusivity clauses to be able to make informed decisions about the costs of their services, abilities to contract with a third party for food scrap services, and how to reduce their waste services after starting or expanding a diversion program.
- Haulers have a wide range of reporting styles and capabilities. Estimates are unavoidable in some situations due to the type of container, but make accurate data tracking difficult for the business.
- CET has heard from businesses regarding challenges around communication on what end sites are being used, acceptable materials, and timely contamination feedback.

### *Waste Ban Challenges*

- CET has experienced variations in acceptability of waste ban items from different haulers or end sites. For example, cardboard corner bracing and cores.
- Fewer textile recycling inquiries were received in FY24, but some existing entities were able to find new solutions. Pricing and quality specifications continue to be challenging for handling manufacturing scrap.

### *Equipment and Service Selection*

- On-site systems can be great for pre-processing food scraps, but they do require regular maintenance and repairs. When these systems are not operational, the food scraps they would

typically process often end up in the trash. Regular maintenance and having a contingency plan for equipment downtime are crucial to ensure continuous operation.

### *Improved College Move-Out Programs*

- In fiscal year 24, there was a trend towards enhancing college move-out programs. Institutions focused on improving collection, storage and donation or redistribution of unwanted student items.

### *Supply Chain Issues with Compostableware*

- The supply chain for compostableware and other sustainable items has continued to experience disruptions. These issues affect the availability and cost of compostable products, posing challenges for businesses and institutions looking to include certain certified compostable products in their programs.

## **Compost Site Technical Assistance**

To support food waste composting infrastructure in Massachusetts, and to help ensure well operated compost sites, RecyclingWorks continued to offer both Tier 1 and Tier 2 Compost Site Technical Assistance during FY24. CET renewed contracts with two composting industry experts that serve as consultants for the program; these consultants conduct site visits for approved facilities and produce reports based on their findings. CET conducts outreach to compost sites registered through either the MassDEP or the Massachusetts Department of Agricultural Resources (MDAR) that may be interested in accepting food scraps, including farms that CET engages through the Massachusetts Farm Energy Program.

In FY24, RecyclingWorks provided Tier 1 TA to five sites and Tier 2 TA to two sites. At the close of FY24, there are four compost site operations continuing to receive ongoing technical assistance.

CET is in the process of organizing a Practical Skills Workshop for Commercial Compost Site Operators, with an emphasis on composting food materials using the aerated static pile (ASP) method. The workshop will be held in-person at Black Earth Compost in Groton on October 10, 2024. Before the workshop, participants will engage in a live virtual lesson on ASP composting. The workshop will demonstrate compost site monitoring through a hands-on activity, and will include a tour of Black Earth's composting operation. This will be the sixth RecyclingWorks practical skills compost training. According to commentary during previous workshops and feedback survey responses, these trainings are well received.

## **Technical Assistance for Deconstruction and Diversion of Construction and Demolition Materials**

Aligning with MassDEP priorities, the RecyclingWorks program aims to increase awareness and implementation of deconstruction, source reduction, and reuse of building materials, as well as the recycling of construction & demolition (C&D) materials.

The program supports institutions, general contractors, and building owners with technical assistance to increase deconstruction and C&D recycling. CET continues to receive a steady number of hotline inquiries about deconstruction, building material reuse, and C&D recycling, and includes information in TA recommendation reports if applicable. Deconstruction assistance is long-term by nature, as contractors work reuse and diversion into the project bid specifications. Internal decision-making can be a lengthy process, in addition to the detailed walkthrough and documentation of materials.

In FY24, CET assisted a school and an office building with identifying suitable materials for donation and connecting with interested recipients. The school also received continued support during the process. There are three hotline level inquiries starting in FY24 that will be pursued for potential TA in FY25.

## Conclusion

CET is pleased to present the RecyclingWorks FY24 year-end report to MassDEP. This report demonstrates our continued commitment to waste diversion and highlights the significant progress made in the commercial and institutional sectors. As we reflect on the accomplishments of FY24, we recognize the importance of our partnerships with MassDEP and other stakeholders. We are excited to continue working collaboratively to meet the challenges ahead. If you have any questions about this report, please reach out to [Steve Bandarra](#) or [info@recyclingworksma.com](mailto:info@recyclingworksma.com).

*For more than 45 years, the Center for EcoTechnology has helped people and businesses save energy and reduce waste.  
For more information visit [cetonline.org](http://cetonline.org).*