

RecyclingWorks in Massachusetts

Year End Report: Fiscal Year 2022 (July 2021 – June 2022)

The Center for EcoTechnology (CET) is proud to submit the FY22 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:

- Approximately 1,500 tons of material diverted from disposal, contributing to an overall cumulative program impact of nearly 250,000 tons of material diverted since 2013
- 923 units of fluorescent lamps recycled
- 1,458 total phone and email hotline inquiries
- In-person or virtual technical assistance (TA) provided to 115 businesses
- Compost site technical assistance provided to 2 operations
- Over 104,000 visits to www.recyclingworksma.com
- 20 speaking engagements/events, reaching 1,286 attendees

In early 2022, CET developed an outreach plan to guide program priorities throughout the year to increase awareness of waste ban changes and help businesses achieve compliance. This plan was developed in the context of the RecyclingWorks Public Involvement Plan developed in FY21, to describe current activities and potential future efforts to engage businesses in communities with [Environmental Justice populations](#). Here are a few highlights from this plan that CET pursued in FY22:

- Add information about the waste ban changes and effective date in key locations on the RecyclingWorks website.
- Include messaging around waste ban regulation changes in program staff email signatures.
- Create paid boosts for waste ban focused social media posts on Facebook and Twitter channels.
- Conduct outreach to textile and mattress reuse and recycling service providers to better understand specifics of accepted materials and ensure find-a-recycler listings are up to date.
- Develop a flyer/rack card focused on the changing organics disposal ban.
- Contact organics hauling service providers and provide collateral for them to share with their commercial customers about the changing organics disposal ban.
- Conduct targeted outreach to available lists of minority-owned businesses likely to generate food waste, mattresses, or textiles,
- Engage industry-based associations and organizations that serve minority-owned businesses (such as the Black Economic Council of Massachusetts and BlackBoston.com) to urge them to share information about the RecyclingWorks program and MassDEP waste disposal ban changes to their networks.
- Identify a medium-sized food service business (generating approximately ½ ton food material per week) to feature in a new case study.

- Share organics waste ban information during external presentations and workshops for compost site operators.
- Conduct targeted outreach to municipalities with leaf and yard waste composting operations to share information about food scraps composting technical assistance.

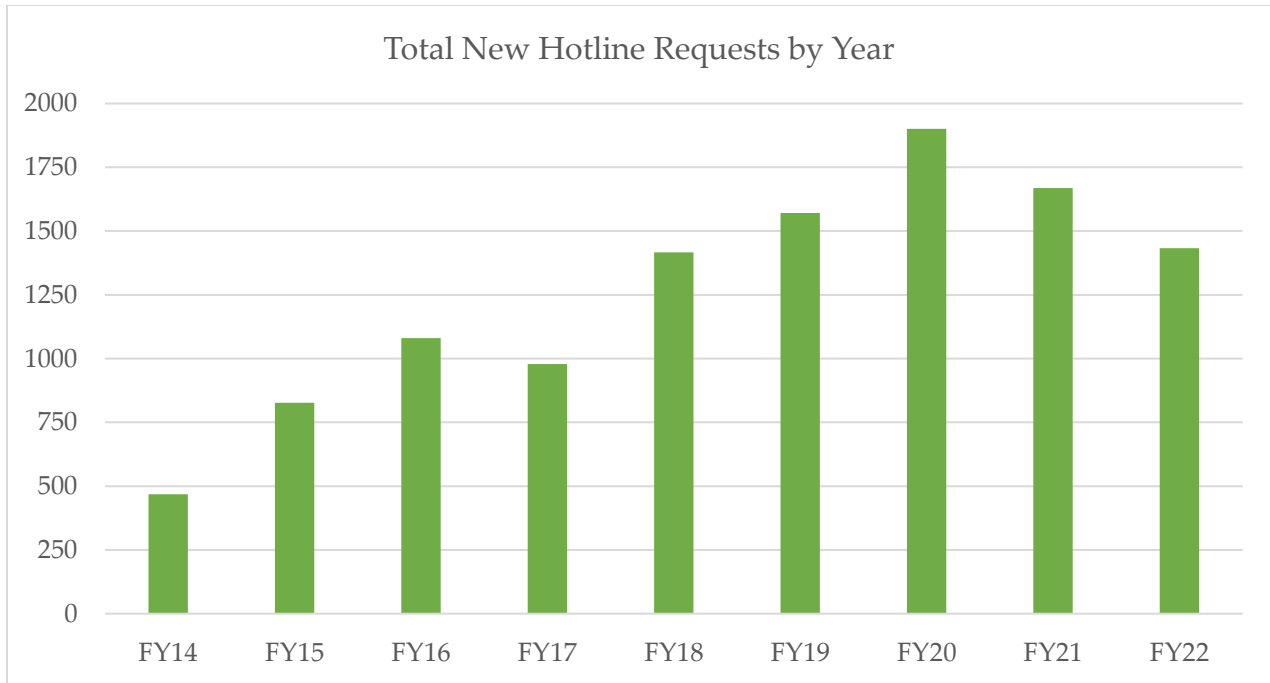
Email / Phone Hotline

CET staff operate the RecyclingWorks hotline phone and email service. People reaching out to RecyclingWorks are directed to resources on www.recyclingworksma.com, referred to CET field staff for follow up, or processed for continued levels of assistance. At the request of MassDEP, CET implemented the use of a third-party interpreter service during FY21, which enables RecyclingWorks hotline staff to assist non-English speakers as needed.

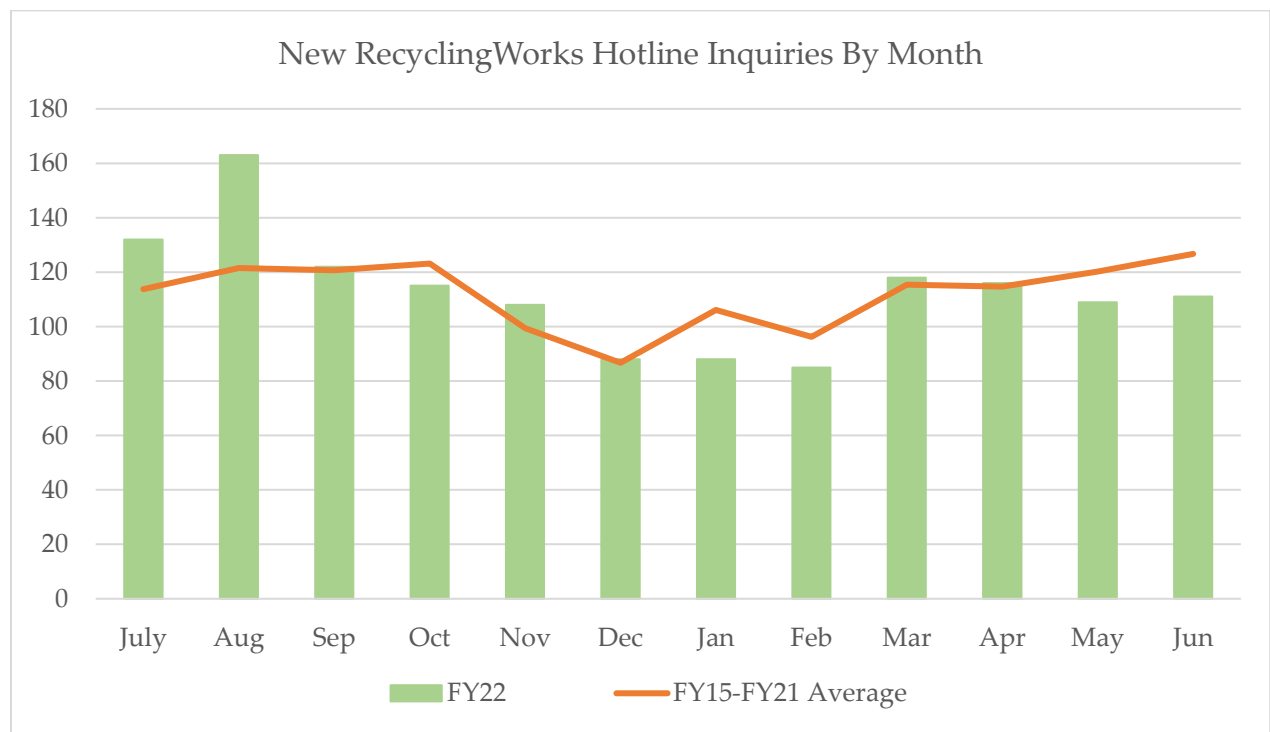
During FY22, CET staff handled 1,458 phone and email RecyclingWorks hotline inquiries. While this number is just short of the work plan goal (1,650-2,000), and call volume in other recent years, the decrease is in part due to the steps CET has taken to reduce time spent addressing non-applicable inquiries, for example using spam email filters. CET also believes that COVID-19 impacts reduced call volume this year, similar to FY21 trends.

Summary Hotline Statistics, Fiscal Years 2014-2022

	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22
New Requests from Businesses & Institutions	418	735	988	870	1,371	1,580	1,853	1,574	1,386
New Requests from Processors & Haulers	50	92	92	112	46	51	48	52	47
Total New Requests	468	827	1,080	982	1,417	1,571	1,901	1,626	1,458
Total Requests Completed	422	842	1,061	960	1,362	1,631	1,903	1,593	1,392



During FY22, hotline volume was particularly high during the first two months (July-August). Throughout the remainder of the year, hotline volume was steady, with slightly lower activity between December 2021 and February 2022.



Hotline Trends

Businesses continue to express great appreciation for this free service. As in past years, the hotline staff fielded inquiries on a broad array of topics. Below we list a few examples and identify common themes observed during FY22:

- **MassDEP Waste Ban Amendments** – We fielded a high volume of questions related to the upcoming changes to the MassDEP waste disposal bans, especially after the amendments were published in October 2021. These questions came from commercial and institutional waste generators, service providers, municipalities, and residents.
- **Textiles and Mattresses** – In addition to information about the disposal bans, we received many questions from both residents and businesses looking for reuse and recycling outlets for textiles and mattresses. Additionally, textile and mattress reuse and recycling outlets contacted the hotline to request listing in the Find-A-Recycler database.
- **Deconstruction** – Many businesses in the construction and remodeling industry have expressed interest in deconstruction and building materials reuse. These businesses are also emphasizing their desire to demonstrate sustainable practices to potential clients.
- **Furniture and Equipment Reuse** – We observed an uptick in questions from businesses and institutions, such as colleges & universities, as well as residents, seeking reuse outlets for surplus materials such as furniture, electronics, building materials, and medical equipment.
- **Restarting Programs Stalled During the Pandemic** – The impacts of the COVID-19 pandemic on recycling and food waste diversion programs continued into FY22 and were reflected in the inquiries we received. Many businesses' programs were temporarily stalled due to business closures, staffing turnover, and broader operational changes.
- **Cannabis Organics and Packaging** – In FY22, we continued receiving inquiries from cannabis manufacturers and retailers about diverting cannabis plant waste and managing difficult-to-recycle packaging waste from dispensary retail operations.
- **Construction & Demolition Materials** – We fielded a variety of questions about recycling and reuse of construction & demolition (C&D) materials, including calls about specific materials such as concrete and insulation.
- **Hard-to-Recycle Materials** – In particular, we received questions during FY22 about carpeting, photovoltaic panels, Styrofoam, and porcelain toilets.
- **Managing Potentially Hazardous Materials** – We continued to field questions from residents regarding outlets for household materials such as paint, electronics, thermostats, fluorescent lamps, 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. For example, we received an inquiry from a university student conducting a research project on textile waste and recycling.

Tonnage Diversion

As shown in the table below, approximately 1,568 tons of material were diverted because of hotline, Mini TA, and TA activities in FY22, a notable increase compared to the previous year. Out of this total, 63% (989 tons) of the material was recycled, 30% (468 tons) was organics diverted for composting, anaerobic digestion, or animal feed, 3% (51 tons) was surplus food donated, and 2% (38 tons) was reused, and 2% (40 tons) 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 FY22 Hotline, Mini TA, and TA Activities*

Type of Diversion	Annual Tonnage Diverted	Percentage of Total Diversion
Recycled	989 tons	63%
Reused	38 tons	2%
Reduced	40 tons	2%
Food Donated	51 tons	3%
Organics Diverted**	468 tons	30%
Total	1,568 tons	100%

*Tonnage diverted includes only activity that could be quantified and confirmed during FY22.

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

RecyclingWorks Website

In FY22 CET continued to maintain and update the RecyclingWorks website and database, and 21 haulers and processors were updated or added. CET 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 FY22, there are 422 listings in the database.

Examples of web content updates made in FY22 include the following:

New Content

- Created Spanish and dual Spanish-English example signage for recycling, trash, and organics and posted the signage to the [Get Help webpage](#).
- Added a new resource from the US EPA focused on preprocessing food waste technologies to the [Comply with the Organics Waste Ban webpage](#).
- Added language focused on the waste ban regulation changes for organics, mattresses, and textiles to 8 different RecyclingWorks webpages, including the Waste Bans and Compliance webpages.
- Published 14 blog posts featuring important announcements, spotlights on businesses, and relevant news articles. Two blog posts leveraged content shared by Recycle Smart MA, highlighting MassDEP Reduce, Reuse, Repair microgrant recipients [Good Filling](#) and [Untold Brewing](#).

Modified Content

- Updated the [Supermarkets sector webpage](#) to include information on food waste diversion, single stream recycling, and link to other existing resources on the website. Language approved by MassDEP and posted to website on November 1, 2021.
- Used an automated tool to identify broken links throughout the website and made fixes to approximately 50 links by identifying replacement URLs and removing out-of-date resources.
- Updated the [Food Donation Guidance](#) to include a food rescue locator tool from Sustainable America and a link to the Find-A-Recycler search results for surplus food donation.
- Updated the [Boat Wrap section on the plastics webpage](#) to include additional details on best practices for preparing this material based on input from the Woods Hole Oceanographic Institute.

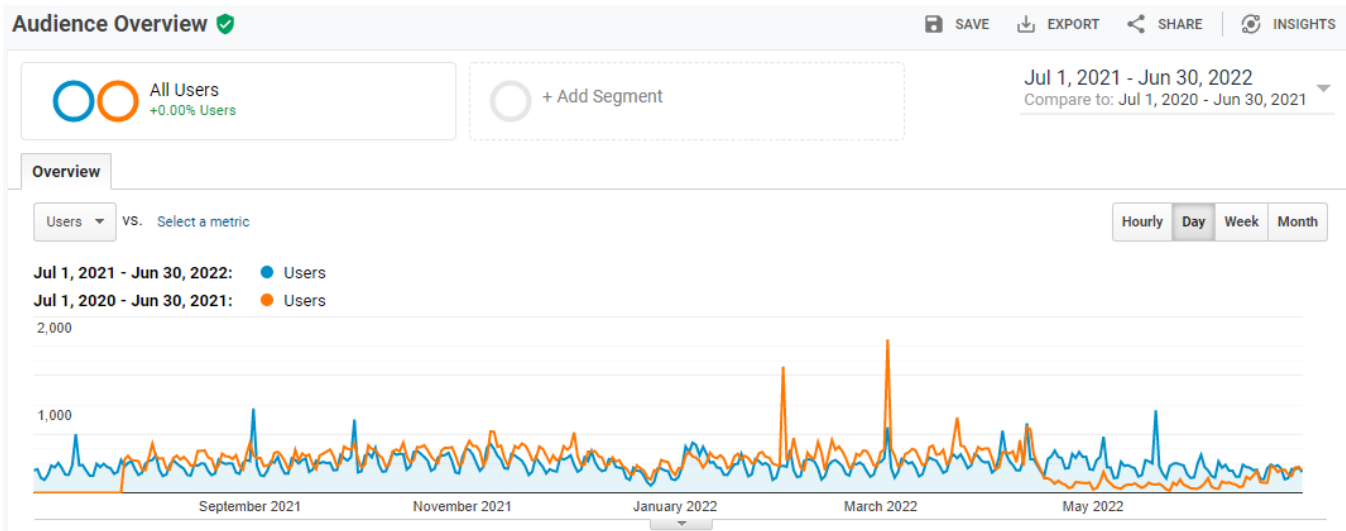
Website Statistics

In total, there were 104,252 website visitors and 127,503 sessions in FY22. While this activity is slightly lower than reported for FY21, it is likely in part due to an over-correction of artificially low web traffic in FY21. Between FY14 and FY22, the number of visitors, sessions, and page views has increased by 215%, 191%, and 95% respectively. As in previous years, most sessions in FY22 represented new visitors to the website.

Web Traffic Statistics FY14-FY22			
	Visitors	Sessions	Page Views
FY 2014	33,068	43,807	108,203
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
Percent Change FY2021 – FY2022*	-25%	-15%	-14%

*Note – adjustments were made to correct artificially low web traffic in FY21, which may skew comparisons to FY22.

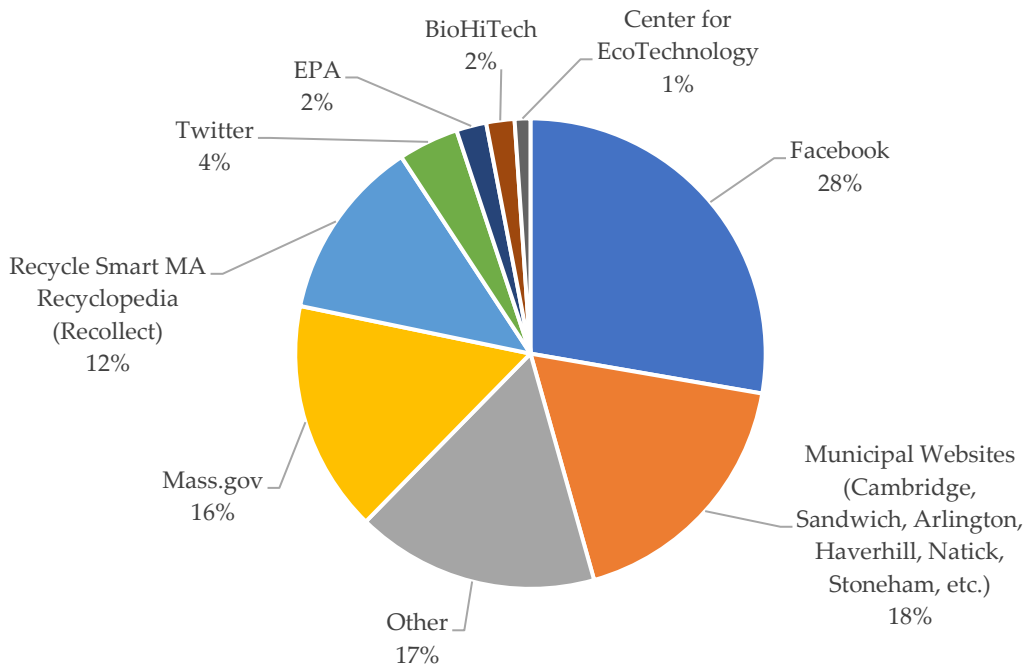
FY22 RecyclingWorks in MA Website Traffic



The largest number of users in a single day (960 users) visited the website on September 2, 2021 when CET sent the September RecyclingWorks newsletter. This newsletter included a case study on Brandeis University’s surplus furniture reuse efforts and expanded composting program and nearly 70 users clicked on the link in the newsletter to view the case study. The September newsletter also included information about RecyclingWorks’ compost site technical assistance, and an update on the number of Massachusetts businesses contracting for organics hauling.

Most users visited the website through a search engine or direct link. For traffic referred from other websites (rather than search engines or a direct link), approximately 32% of visits were referrals from social media (Facebook, Twitter, and LinkedIn). Similar to last year, the MassDEP Recycle Smart MA Recyclopeda tool helped drive a notable number of visitors to the RecyclingWorks website (914) in FY22. Several listings in the Recyclopeda reference the RecyclingWorks program, including those related to construction and demolition materials. As in previous years, state and municipal websites referred many users to the RecyclingWorks website (18% collectively). The six municipalities listed in the figure below account for more than half of the visitors referred from municipal websites.

Referral Traffic to the RecyclingWorks Website (7,310 referrals*)



*Excludes referral traffic from search engines, direct site visits, and spam referral sites.

Top RecyclingWorks in MA Webpages Visited in FY22

Page	Page Views
Blog: Common Causes of and Solutions to Restaurant Food Waste	7,994
Recycling Bottles and Cans	6,949
Construction Material Guidance	5,312
Equipment for Collecting Trash, Recycling, and Food Waste	3,934
Electronics Material Guidance	3,328
Cardboard Material Guidance	3,199
Food Waste Estimation Guide	3,187
Pallets Material Guidance	3,089
Greif – Salem Recycling Plant Database Listing	2,577
Mattresses Material Guidance	2,465

In April 2019 CET launched a pilot Google Ad campaign for RecyclingWorks, leveraging CET funding. Google Ads is a pay-per-click platform that increases website visibility on Google search results. The ads link to the RecyclingWorks homepage and other relevant webpages based on users' search terms, such as "business recycling". The table below summarizes outcomes for the recycling and construction & demolition ad groups. Impressions are the number of times that the ad appeared as a search result after someone searched Google for a relevant term, and clicks are the number of times that a user clicked the ad to visit the RecyclingWorks website. During FY20, RecyclingWorks ads appeared in Google search results more than 1,850 times, resulting in 115 clicks to visit the website. In FY23, CET will evaluate the existing Google Ads and consider testing additional keywords to increase visibility.

FY21 Google Ads Outcomes

Google Ad Group	Impressions	Clicks	Click-Through Rate
Recycling	632	40	6.33%
Construction & Demolition	1,220	75	6.14%

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 7,270 to 7,444 subscribers in FY22, representing a 2% increase in subscribers over the course of the fiscal year.

Some of the topics covered in the newsletter during FY22 include:

- New RecyclingWorks case studies featuring Home City Development, Inc. and Brandeis University, as well as spotlights on businesses assisted by RecyclingWorks and/or recognized for their achievements in waste reduction.
- New content posted to the website – including expanded resources for supermarkets, and ready-to-download recycling signage in both English and Spanish.
- Highlights of existing resources and services such as the Find-a-Recycler website tool, Compost Site Technical Assistance, mattress recycling guidance, and tips for waste reduction at events.
- Upcoming events, including the Fall 2021 RecyclingWorks WasteWise Forum, and external events such as the MassRecycle Virtual Conference.
- MassDEP announcements, including announcements about the Draft 2030 Solid Waste Master Plan public comments, waste disposal ban amendments, grant programs, and upcoming opportunities for public engagement.

In addition to monthly newsletters, CET sent several E-blasts to the RecyclingWorks email list on specific topics. For example, CET prepared an announcement about the publication of the waste disposal ban amendments in October 2021, and about the launch of the MassDEP Recycling Market Development working group in January 2022.

RecyclingWorks Social Media

RecyclingWorks has an active presence on both Facebook, as of FY18, and Twitter, as of FY17.

At the end of FY22, the RecyclingWorks Facebook account had 516 followers, an increase of 12% from FY21. In addition to posting an average of three times per week, CET strategically identified content to boost on Facebook, which effectively creates a paid advertisement with much higher visibility than a basic post. CET boosted posts featuring new case studies, other web resources, select blogs, and upcoming events, specifically targeting relevant audiences such as business owners and facility managers. Boosted posts achieved 12,932 impressions on average. The most-viewed Facebook post in FY22 was one reaching over 15,017 users that shared information about the MassDEP disposal ban on textiles effective November 1, 2022, and how businesses can recover textiles for reuse and recycling. Other popular posts included an announcement of MassDEP's lowering of the threshold for the commercial organics waste ban (boosted on 3/23/2022 and run for five days), reaching over 11,000 users, and a post about RecyclingWorks' technical assistance services (boosted on 1/14/2022 and run for five days), which reached over 6,000 users.

CET also regularly promotes events and other RecyclingWorks content through Twitter. In FY22, CET posted three tweets per week on average. The engagement rate increased from the previous year to an average of eight engagements per post. At the end of FY22, the RecyclingWorks Twitter account had 779 followers and a total of 265 clicks on Twitter posts. Starting in June 2021, CET also began creating paid promotions on Twitter. Topics promoted in FY22 included: RecyclingWorks' technical assistance, which gained over 600 impressions with 7 engagements, information about the MassDEP disposal ban on textiles, which gained over 800 impressions and received 26 engagements, and the lowering of the threshold for the food waste disposal ban, which gained 1,504 impressions and 51 engagements. In FY23, CET will continue to boost and promote content on both Facebook and Twitter and will compare outcomes from the two social media channels. CET will also post and boost social media content in other languages to reach a wider audience.

Marketing

In FY22, promotional activities included media engagement, developing a case study, speaking engagements and other events, and targeted proactive outreach.

Media Engagement

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

- Waste360 (December 2021) – HCDI Case Study ([view article](#))
- Springfield Republican Newspaper (March 2022) – Waste Disposal Ban updates

Additionally, CET staff prepared updates for other organizations to share through their newsletters and social media networks throughout FY22. For example, as requested by MassDEP, CET submitted

the following RecyclingWorks updates to be shared in the Northeast Recycling Council (NERC) Monthly Bulletin:

- September 2021 ([Home City Development and Brandeis Case Studies](#))
- October 2021 ([Compost Site Technical Assistance](#))
- November 2021 ([Fall WasteWise Forum Announcement](#))
- December 2021 ([Fall WasteWise Forum Recap](#))
- March 2022 ([Compost Site Operators Workshop](#))
- June 2022 ([Organics Hauler Data](#))

Case Studies

CET created the following written case studies in FY22, which have been posted to the website:

- [Structure Tone](#) - featuring a commercial construction manager operating in Boston that demonstrated strong construction preparation and material collection practices during an office interior renovation project in Cambridge. This case study serves as an instructional video for general contractors to train onsite staff on source separation of C&D materials streams. Although all projects vary in the materials they collect and how they transfer them to the dumpsters, this video will encourage proper separation through training. ([Written](#)) ([Video](#))

Another case study featuring a restaurant, Johnny's Luncheonette, is in progress and will be completed in FY23. This case study can serve as inspiration for other medium-sized restaurants that will be subject to the lowered threshold commercial organics disposal ban starting on November 1, 2022.

Marketing Materials

In FY22, CET prioritized development of new marketing materials to support increased awareness of the waste ban changes effective November 1, 2022. Examples include:

- A [flyer](#) focused on the changes to the organics waste disposal ban, to be used both digitally and in-person to increase awareness. This resource was shared in the April 2022 newsletter and on social media. Another version of this flyer that can be printed upon request contains a QR code with RecyclingWorks' contact information.
- A [sample letter](#) focused on the changes to the organics waste disposal ban that can be distributed by organics haulers, food rescue organizations, industry associations, and other groups.
- In preparation for engagement with business in a specific geography, CET developed a 1-page handout listing organics haulers and food rescue organizations serving businesses in the area. This resource was developed for Cambridge, Longmeadow, and East Longmeadow, and continues to be adapted for other communities as needed.
- As requested, program information was also shared for inclusion in outside resources, such as the updated MassRecycle Handbook.

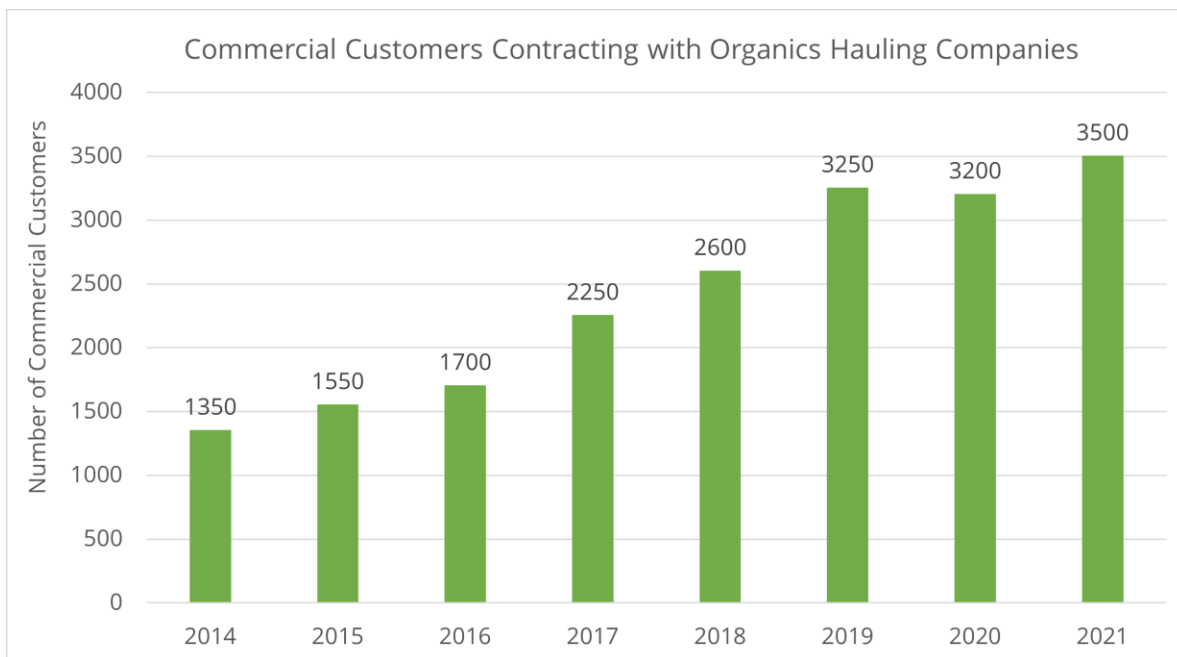
In FY20, CET finalized the design and began piloting a RecyclingWorks branded window decal offering to recognize TA recipients that implemented one or more recommendations that resulted in

food waste diversion. During the height of the COVID-19 pandemic, the decal offering was available but not strongly promoted as many food businesses were closed and/or limiting in-person traffic for a portion of the fiscal year. In FY22, CET continued to offer the decal and provided it to six businesses receiving TA that implemented food waste diversion programs. One business accepting the decal will be featured in a case study in FY23.

In addition to video case studies, there is a need for ready-to-go training tools that enable CET to deliver remote technical assistance more effectively and to reach larger audiences. During FY21, CET started working on a pilot training module focused on single stream recycling in a hospitality setting. In FY22, this training presentation was finalized, recorded, and posted to the hospitality webpage. This training is designed to help communicate recycling guidelines to facilities, custodial, dining, and other staff members to ensure effective programs. During FY23, CET will consider developing additional training materials for other sectors and waste streams, as approved by MassDEP.

Marketplace Data

To measure growth in the food waste diversion marketplace, CET collects annual data directly from organics haulers on the number of commercial organics customers they serve in Massachusetts. In 2021, the number of businesses increased to 3,500. This represents a 9% increase compared to 2020, when widespread temporary business closures and a shift in waste generation impacted commercial organics diversion activity. Since 2014, the number of commercial entities contracting for organics has increased by nearly 160%.



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 food waste prevented over the course of the previous year. All customer and diversion data are self-reported.

In the spring of 2022, CET staff interviewed five companies about activity during 2021. Collectively these companies:

- Worked with nearly 450 commercial customers in Massachusetts
- Prevented an additional 437 tons of food waste
- Contributed to preventing more than 6,000 tons of food waste since 2018

The one-year food waste prevention more than doubled when compared to 2020 activity. The rebound in diversion activity during 2021 likely reflects a return-to-normal operational level for many restaurants and institutional food service operations. A few additional details to note:

- Two companies shared data that were not included in previous years
- One company that shared data in previous years is no longer in operation
- One company declined to share updates and 2020 data was used

See the table below for a summary of this data.

Date Reported	Total MA Commercial Customers	New Annual Food Waste Prevented	Total Annual Food Waste Prevented (Cumulative Since 2018)	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
Total Food Waste Prevented (All Time):			6,219 tons to date	

CET will research new service providers and interview these platforms again in FY23 to evaluate changes in their impact over time.

Outreach

The objectives of proactive outreach during FY22 included generating TAs, creating opportunities for virtual speaking engagements, recruiting event attendees, 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 FY22:

- Developed an outreach and engagement plan for increasing awareness of waste ban changes effective November 1, 2022, with a focus on reaching businesses in environmental justice communities.
- Promoted translation services, including readily available Spanish language waste bin signage, through the newsletter, website, and social media channels.
- Targeted outreach to certain business sectors (hotels, country clubs, linens service companies) and business types (minority-owned, located in environmental justice communities). This outreach was highly successful in FY22 and resulted in approximately 45 new TA opportunities.
- Targeted outreach to industry associations and organizations that serve minority-owned businesses (such as the Black Economic Council of Massachusetts and BlackBoston.com), urging them to spread the word about the RecyclingWorks program and MassDEP waste disposal ban changes to their networks.
- Leveraged existing relationships with businesses that received CET energy efficiency assistance.

As noted in FY21, many Massachusetts municipalities are working to engage their business communities in reducing and diverting waste. During FY22, CET supported several municipalities by conducting outreach to local businesses via direct mail and phone, delivering virtual presentations, and providing information about program services to be shared with their business communities. For example, the City of Cambridge requested RecyclingWorks' support as it rolled out curbside organics collection services to small businesses. In November 2021, CET visited approximately 40 participating businesses throughout the course of one week to discuss program details, deliver multilingual signage, and provide logistical recommendations. CET collected photos and quotes from small businesses, which were shared across RecyclingWorks' social media platforms. Collectively, the impact of this effort resulted in over 400 tons of food material per year going to anaerobic digestion.

CET nominates RecyclingWorks technical assistance recipients and businesses featured in case studies for recognition, such as the MassRecycle annual awards. In addition to recognizing businesses for their successes, this presents an opportunity to raise awareness around the RecyclingWorks program services. In 2021, CET nominated TA recipient Preppy Puppy Bakery, which received the business category award. Additionally, the RecyclingWorks in Massachusetts program was nominated and received the MassRecycle institutional category award for 2021.

Events

CET attended, and/or presented about the RecyclingWorks program, best management practices, and other topics at, the following 20 events, reaching more than 1,286 attendees. Most presentations in FY22 were delivered in a virtual format but there were a few opportunities to present and meet with businesses in person, such as the events for Longmeadow and East Longmeadow businesses.

CET continued to optimize the use of virtual platforms, such as Zoom, to create effective virtual events which encouraged 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 at least a portion of presentations in a virtual format during FY23, while also pursuing in-person opportunities when appropriate.

See below for a list of events and presentations. Note that this list does not include the WasteWise Forums and Compost Site Operators workshops, which are discussed later in this report.

Event Name	Date
Mass Farmers Market Association Event	7/14/2021
Presentation to Cambridge Food Businesses (1 of 2)	9/13/2021
Presentation to Cambridge Food Businesses (2 of 2)	9/22/2021
Charles River Regional Chamber Presentation	9/28/2021
Mass Food Association Sustainability Committee Presentation	9/28/2021
Northeast Laundry Association (NELA) Annual Meeting	10/9/2021
Massachusetts Health Officers Association (MHOA) 2021 Annual Conference	10/20/2021-10/21/2021
MassDEP Fall 2021 SWAC Meeting	10/28/2021
SBM Management Services Summit Presentation	11/3/2021
Massachusetts Food Systems Collaborative – Organics Waste Ban Updates	1/6/2022

Event Name	Date
Busch Systems Office Food Waste Virtual Event	1/12/2022
Massachusetts Food Association Sustainability Committee	1/25/2022
Boston Reuse Summit	1/25/2022
Environmental Business Council (EBC) New England Construction & Demolition Summit	1/28/2022
MassRecycle 2022 Virtual Annual Conference	3/31/2022-4/1/2022
Presentation to Longmeadow Food Businesses	4/11/2022
Massachusetts Food System Collaborative	4/26/2022
Toxics Use Reduction Institute (TURI) Waste Reduction Training for Manufacturers	4/27/2022
Presentation to East Longmeadow Food Businesses	5/9/2022
MassDEP Organics Subcommittee Meeting	6/1/2022

Leveraging funding outside the RecyclingWorks program, CET separately hosted two workshops for organics haulers in the region with several haulers in attendance that serve Massachusetts businesses (October 2021 and March 2022).

CET also attended and participated in events throughout the year where RecyclingWorks did not have a formal presentation role, such as the MassDEP SWAC meetings and corresponding subcommittees and working groups: Construction & Demolition Subcommittee, Organics Subcommittee, Market Development Working Group, Reduce & Reuse Working Group.

WasteWise Forum

In FY22, the US EPA discontinued the 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 2021 WasteWise Fall Forum was held virtually on November 10, 2021. Attendance was high compared to previous in-person only forums; approximately 170 people attended the event. This also reflects a 36% attendance increase from our previous virtual WasteWise Forum. Attendees represented businesses from various business sectors, the US EPA, the MassDEP, universities, and haulers and processors of recyclable materials. The forum focused on strategies for businesses and institutions that help maximize food waste diversion and how partnerships can help identify strategies to recover difficult to manage materials. Presentations were given by Northeastern University on their partnership with Green Mattress Recycling and other partners to collect 3,000 mattresses across campus for recycling, as well as Nashoba Brook Bakery who described how they use strategies across the EPA Food Recovery Hierarchy, including a partnership with Too Good to Go.

CET posted a survey about the Fall Forum, which received 20 responses, a 186% increase in respondents compared to last year's forum. All 20 respondents indicated that the forum was 'extremely' or 'very' informative. Respondents cited key takeaways, including clear information on the proposed lowered threshold to the commercial organics waste ban, as well as the proposed textile and mattress waste bans.

Technical Assistance

Technical Assistance (TA) is focused on helping implement general recycling and/or food waste diversion programs at businesses and institutions. There is significant customization for each facility, to provide a valued and effective service. Mini TA is provided as a result of hotline calls where 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.

CET had FY22 goals of providing Mini TA to 80-100 generators, and on-site TA to 100-125 generators. This Mini TA goal did not include outreach to MassDEP Warning Letter recipients, which is described further in the following section. During FY22, CET provided 119 instances of Mini TA, plus outreach to recipients of 110 Warning Letters.

For on-site TA, CET recommends one of three established tiers to address the waste reduction/recycling opportunity. These are at the 10, 20, and 30-hour levels. The tier recommended is based on several criteria, including interest, complexity, and potential diversion opportunity. In FY22, 115 entities received RecyclingWorks TA. Four entities were approved to receive TA but declined further assistance before CET conducted an on-site or virtual visit.

In FY22, 62% of approved TAs (72 total) addressed food waste. Eight TAs included a focus on textiles in FY23, compared to only one during the previous year.

The following chart summarizes the number of facilities receiving various forms of TA in FY22, broken down by associated section of the work plan. The number of businesses served through Tiered TA was lower than the FY22 goal due to the significant impacts of the COVID-19 pandemic on business operations. However, CET met the FY22 goal for Mini TA service with 255 instances of assistance. In total, CET delivered 337 Tiered and Mini TAs.

Type	# In Progress	# Completed	Total Assisted	FY22 Assistance Goal
Technical Assistance	70	45	115	100-125
Mini TA	30	89	119	80-100
Warning Letters	7	103	110	N/A
Totals	107	237	344	

Note: Mini TA numbers include outreach to MassDEP Warning Letter recipients

Lessons Learned:

- As a result of targeted outreach to textile recovery organizations and technical assistance to businesses generating textile materials, CET staff developed a more robust and nuanced understanding of the textiles marketplace in Massachusetts. For example, staff found that there are more recycling options for synthetics and blended materials than initially anticipated.
- For smaller businesses that are not recycling or only recycling cardboard, implementing a program to recover redeemable bottles and cans often serves as an effective entry point for expanded recycling programs. Among schools, higher education institutions, and social services organizations, these programs can also help engage residents, students, etc. who benefit from the financial returns. CET staff also recommends that small businesses confirm with their hauler whether non-redeemable bottles, cans, and containers can be collected with cardboard and paper as a single stream program.
- Cost of service for recycling and organics collection continues to pose a challenge for some businesses, and CET staff observed increases in hauling costs in reaction to surging fuel prices in 2022. CET staff recommend businesses work with their current hauler, when possible, but also offered to review existing contracts and share information for alternative service providers upon request. CET staff also strongly encourage no-cost waste prevention, reuse, and food donation strategies whenever possible to reduce disposal costs.
- CET staff worked to stay abreast of the many mergers and acquisitions in the hauling industry. It is not always clear how these ownership changes will impact existing service options. In some instances, when a business's hauler transitions ownership, they learn of changes in the specifications for materials to collect for recycling. CET reinforces signage best practices and supports staff training to encourage a smooth transition.

- Businesses and institutions continue to request support navigating a return to normal operations after the COVID-19 pandemic closures. In these instances, CET helps with re-establishing hauling services, deploying proper collection equipment, adjusting signage, and educating staff/students/visitors.

MassDEP Warning Letter Outreach

During FY22, 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 FY22, CET contacted recipients of 110 Warning Letters with targeted outreach. Out of these 110 Warning Letters, four entities were referred to receive RecyclingWorks TA (often, a single TA recipient has received multiple letters).

CET will continue outreach to MassDEP warning letter recipients during FY22, including businesses that have been reported to MassDEP as not offering recycling services.

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. 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 the Massachusetts Department of Agricultural Resources (MDAR) that may be interested in accepting food scraps and promotes Compost Site TA when visiting farms through our work with the Massachusetts Farm Energy Program. In FY22, RecyclingWorks provided Tier 1 TA to two sites, both completed within the fiscal year. One site received Tier 2 TA, which was also completed within the fiscal year. At the close of FY22, there are no active Tier 1 or Tier 2 TAs.

CET organized a practical skills compost training for compost site operators, with an emphasis on growing capacity and scaling up when processing food materials. The virtual workshop was held on the morning of March 24, 2022, and 54 people attended. CET staff invited smaller compost sites, such as urban and community gardens in environmental justice communities, through targeted outreach. The workshop focused on compost site planning and operational best management practices geared towards any Massachusetts compost site operators that are currently accepting or considering accepting food materials. The training highlighted planning, design, nuisance conditions and contamination management, and operational considerations when adding or increasing food material input and scaling up operations.

This was the second virtual practical skills compost training, and according to the seven survey respondents the training was well received, with a rating of 4.6 out of five stars.

Construction & Demolition Technical Assistance

This year, CET renewed its contract with a construction industry expert to wrap up the projects they have been serving. The first was construction of the Hillside Center for Sustainable Living, a green living community in Newburyport. Over several years, this project successfully conducted source separation of cardboard, metal, and mixed C&D materials, resulting in 68 tons of recycled materials. They also set a precedent for waste prevention by contacting their suppliers and inquiring about take back programs for pallets and creative ways to reduce packaging. CET estimates their waste prevention attempts resulted in about five tons of material being diverted from the trash. Hillside was attempting to go for several Green Building certifications, including Passivehaus and LEED. Keys to their success included plenty of space to source separate materials into different dumpsters, which were able to be staged onsite all at once, advanced planning, and a longer project timeline, which offered flexibility.

The next two projects we supported in collaboration with the contractor Commodore Builders. Quickbase, a small tenant interior renovation in Waltham, was able to source separate four tons of carpet and two tons of ceiling tiles. This program took a bit of advanced planning to make time in the schedule for these removals and coordinating pickups. Commodore attempted to source separate other materials but was unable to due to limited staff resources. Thirteen tons of mixed C&D materials were recycled from this site overall.

The second project with Commodore Builders was Takeda. Takeda was the construction of a ground-up building attached to an existing building. Similarly to Quickbase, due to onsite managers' lack of maintenance for training on the source separation program, significant source separation of material streams was not achieved. Takeda recycled about 34 tons of wood and 64 tons of mixed C&D material.

Starting in FY21, CET decided to scale back this pilot in partnership with the consultant while we continued to assist many projects and contractors directly through Tiered TA. CET staff have become effective technical experts in the field of construction waste management planning, researching outlets, and deconstruction, and are able to offer an array of support to construction projects.

In FY22, RecyclingWorks offered technical assistance to institutions, general contractors, and building owners. CET staff supported several projects with their materials, including:

- National Developers and Cranshaw Construction with the deconstruction of 1 Cumberland (residential building) and the Midtown Hotel in Boston.
- STO Builders with the source separation of clean gypsum wallboard from their Schrodinger project in Cambridge.