

RecyclingWorks in Massachusetts

Year End Report: Fiscal Year 2020 (July 2019 – June 2020)

The Center for EcoTechnology (CET) is proud to submit the FY20 year-end report for RecyclingWorks in Massachusetts to the Massachusetts Department of Environmental Protection (MassDEP). CET and MassDEP continued 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 6,000 tons of material diverted from disposal in FY20, contributing to an overall cumulative program impact of more than 185,000 tons of material diverted since 2013
- 1,450 units of fluorescent lamps and 10 grams of elemental mercury diverted from disposal
- More than 1,900 phone and email hotline inquiries
- In-person or virtual technical assistance (TA) to 131 businesses
- Over 134,000 visits to www.recyclingworksma.com
- 27 speaking engagements/events, reaching more than 850 attendees

Email / Phone Hotline

CET staff in the Northampton office 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. Because of the Massachusetts Stay At Home Order in response to COVID-19, we began serving the phone hotline remotely. This allowed CET staff to maintain hotline service uninterrupted as our staff transitioned to working from home.

The goal in the FY20 work plan was to serve 1,500-1,900 businesses. We served over 1,900 businesses, exceeding the high end of this goal. The increase in call and email volume also corresponds with an increase in website visits. (Please see the website section of the annual report on pages 5-6.)

Summary Hotline Statistics, Fiscal Years 2014-2020:

	FY14 Totals	FY15 Totals	FY16 Totals	FY17 Totals	FY18 Totals	FY19 Totals	FY20 Totals
Requests from Businesses & Institutions:	418	735	988	870	1,371	1,580	1,853
Requests from Processors & Haulers	50	92	92	112	46	51	48
Total Number of Requests:	468	827	1,080	982	1,417	1,571	1,901
Total Number of Requests Completed:	422	842	1,061	960	1,362	1,631	1,903

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. In FY20, common topics included, listed roughly in order of frequency:

- **Reducing Contamination in Recycling Streams** – We continue to assist businesses and institutions with adapting to the reality of recycling markets, with a focus on preventing contamination in recycling streams. This is a particularly common challenge for colleges and universities, as well as property managers with multiple tenants.
- **Plastics Recycling** – In FY20 we received a number of challenging mixed plastics inquiries, such as a manufacturing byproduct, plastic/textile blend coveralls, and boat and agricultural wrap.
- **Food Waste & Organics Diversion** – We continue to receive questions related to the commercial organics disposal ban, starting a diversion program, estimating generation quantities, and food donation. During the spring of 2020, we assisted businesses and food rescue organizations with surplus food as a result of the COVID-19 pandemic.
- **Construction & Demolition Materials** – We continue to receive a high volume of questions about recycling and reuse of construction & demolition (C&D) materials. In particular, we heard from several general contractors looking for connections to haulers of C&D materials, and ways to increase diversion.
- **Pallet Recycling and Reuse** – During FY20 we received many calls and emails seeking reuse or recycling outlets for wood and plastic pallets.
- **Source Reduction & Packaging** – This year, a number of businesses contacted RecyclingWorks in search of alternative packaging products to reduce reliance on single-use plastics and other single-use products. This included questions from offices about reducing waste through procurement, as well as from supermarkets and other entities evaluating packaging and container options for food products.
- **Cannabis Organics and Packaging Waste and Diversion** – In FY20, we continued receiving inquiries from cannabis manufacturers about diverting cannabis plant waste; often these entities learned about the program from the Cannabis Control Commission’s guidance documents. In FY20, we also started to receive questions about managing difficult-to-recycle packaging waste from dispensary retail operations.
- **Hard-to-Recycle Materials** – In particular, we received questions about waxed cardboard, photovoltaic panels, Styrofoam, and mattresses.
- **Managing Potentially Hazardous Materials** – We often receive calls from residents asking about outlets for electronics, paint, thermostats, and fluorescent lamps.
- **Compost Site Technical Assistance** – In FY20, we received a relatively high number of calls from compost site operators interested in receiving technical assistance. Often these contacts learned about the program through a previous RecyclingWorks workshop.
- **Reuse** – We continue to hear from entities looking for reuse outlets for surplus materials such as furniture, building materials, medical equipment, and textiles.
- **External Requests for Information** – As in previous years, we regularly receive inquiries from media, researchers, students, other state agencies, and regional or national organizations focused on waste diversion.

Approximately 6,000 tons of material were diverted as a result of hotline, Mini TA, and TA activities in FY20. Out of this total, 85% (5,069 tons) was recycled, 14% (809 tons) was food scraps diverted for composting, anaerobic digestion, or animal feed, and 1% (57 tons) was reused. Food donation and reduction each accounted for less than 1% of the total diversion.

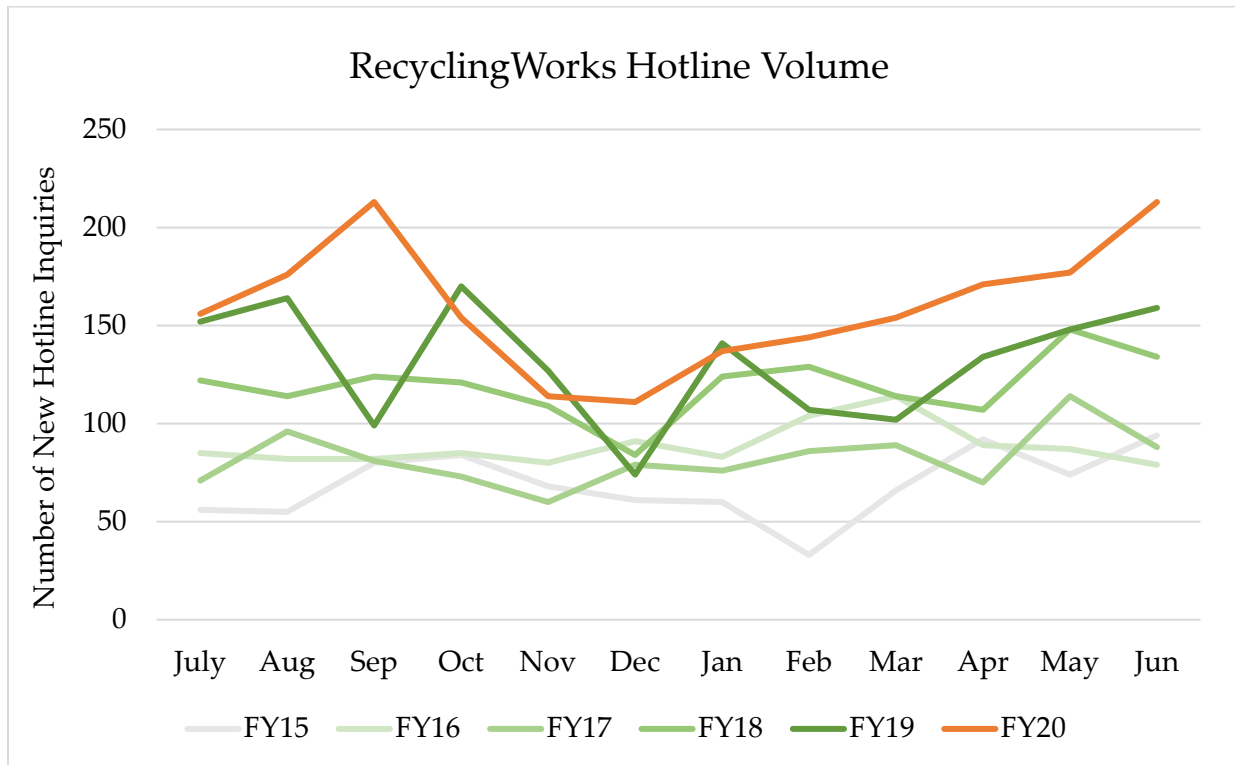
Waste Diversion as a Result of FY20 Hotline, Mini TA, and TA Activities*

Type of Diversion	Annual Tonnage Diverted	Percentage of Total Diversion
Recycled**	5,069 tons	85%
Reused	57 tons	1%
Reduced	13 tons	<1%
Food Donated	39 tons	<1%
Food Scraps Diverted	809 tons	14%
Total	5,987 tons	100%

*Tonnage diverted includes only activity that could be quantified and confirmed during FY20.

**Recycled includes non-food organics diversion for composting or anaerobic digestion.

The quantity of new hotline inquiries was higher than the previous fiscal year, with an average of about 150 inquiries per month.



Lessons Learned:

- There was increased opportunity to cross-promote Recycle Smart MA resources this fiscal year, including the Smart Recycling Guide as a reference for reducing contamination. Businesses and institutions also showed interest in the Partner Program as an opportunity to showcase their commitment to recycling.
- The COVID-19 pandemic dramatically disrupted operations across the state and resulted in a number of calls about the potential impacts of the pandemic on waste programs. Several businesses and institutions, such as colleges and universities, contacted RecyclingWorks for assistance to improve operations while students and staff were not physically in the facility.
- Closure of a single facility can disrupt recycling of a niche material. For example, in fall 2019, we received a number of inquiries from auto repair shops in search of an outlet for plastic car bumpers when one outlet stopped taking the material. Fortunately, we eventually identified another processor able to accept this type of plastic.

RecyclingWorks Website

In FY20 CET continued to maintain and update the RecyclingWorks website and database, and 24 haulers and processors were 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 FY20, there are 391 listings in the database.

Examples of web content updates made in FY20 include the following:

New Content

- Published a [new webpage](#) that links to all available RecyclingWorks Best Management Practices and other key resources.
- Created a [Waste Ban Compliance Tip Sheet for Property Managers](#) and published it to the website along with a [Property Manager sector webpage](#).
- Created a new material webpage for [mattresses](#).
- Created a new webpage on the different types of [equipment](#) for trash, recycling, and organics programs. Content finalized in FY20 and published in early FY21.
- Created a new tip sheet for [Waste Reduction at Workplace Events](#) and posted the final document to the Key Resources, Single Stream, How To, Food Waste, College and Universities, and Offices webpages.
- Created an updated tip sheet for a [Waste Reduction at Special Events](#) and posted the final document to the Key Resources and Stadiums/Venues webpages. Since large events are currently postponed due to COVID-19, CET will wait to promote this new resource until an appropriate time.
- Published 45 blogs on topics such as food waste prevention and recovery, tips for managing rigid plastics, and spotlights on businesses who received RecyclingWorks assistance. The most popular blog posted in FY20 was "[Organizations Rescuing Surplus Food from MA Businesses and Institutions](#)" with over 300 views.

Modified Content

- Updated the existing [Food Donation Guidance](#) webpage to include additional food rescue organizations serving Massachusetts.
- Translated the published Waste Ban Compliance Tips for [Food Manufacturers and Distributors](#) and for [Colleges and Universities](#) into Spanish, and added links for all tip sheets on relevant materials guidance pages.
- Updated the [Colleges & Universities](#) sector page to include additional external resources.
- Updated the [Comply with the Organics Waste Ban](#) page to include information on handling packaged food, and added packaged food as a material option in the Find-a-Recycler tool.
- Updated the [Get Help](#) webpage with more recent examples of waste bin signage, as well as a section with language about and links to the facility waste management template.
- Updated the [Plastics](#) material webpage to include additional information about boat wrap and foam products.
- Updated the program description language on the homepage to include information about MassDEP funding, CET program delivery, and waste reduction.
- Added approved disclaimer language to the Find-A-Recycler search results webpage, each recycler webpage, and Google search results to indicate that a listing or company does not imply endorsement or affiliation with MassDEP or CET.

Functional Changes

- Refined the RecyclingWorks website search tool algorithm to improve search functionality and focus search results to the most frequently referenced content.

Website Statistics

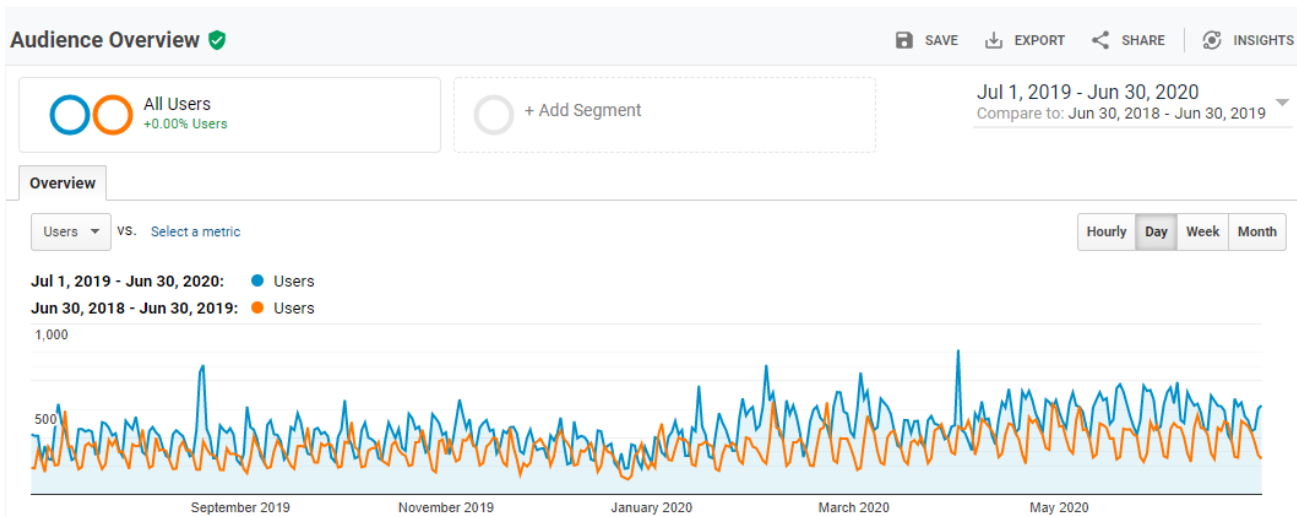
Comparing FY20 to FY19, overall activity on the RecyclingWorks website continued to increase. When analyzing annual trends in website traffic, CET discovered that in FY20, some of the increased traffic was due to referral spam traffic from a fictitious website designed to inflate website analytics. CET was able to assess the amount of traffic coming from referral spam and subtract that data from the website metrics below.

There were 134,585 sessions in FY20, a 22% increase over FY19. As in previous years, approximately 90% of sessions in FY20 were new visitors, while 10% were returning to the site.

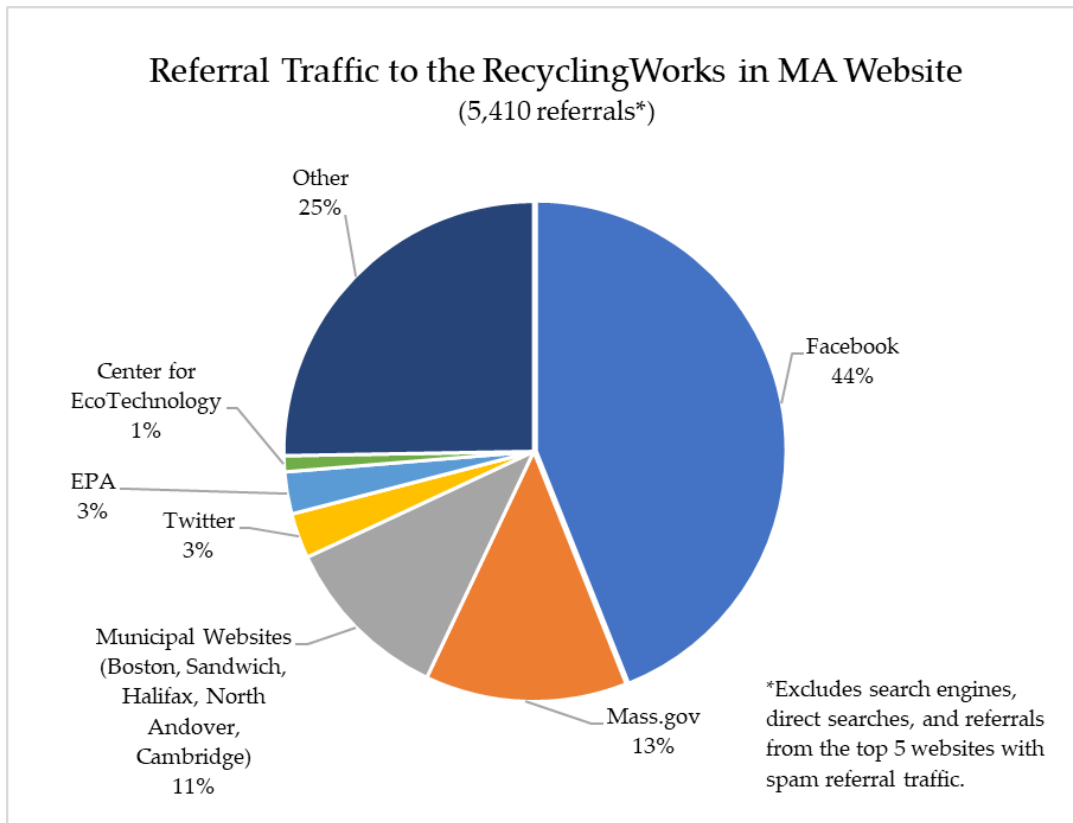
Web Traffic Statistics FY14-FY20			
	Visitors	Sessions	Page Views
FY 2014	33,068	43,807	108,203
FY 2015	54,000	65,000	143,000
FY 2016	55,521	69,572	149,315
FY 2017	57,995	73,186	135,528
FY 2018	72,020	88,896	171,470
FY 2019	88,635	110,347	206,013
FY 2020	110,633	134,585	237,213
Percent Change FY2019 – FY2020	24%	22%	15%

The website saw a similar pattern in traffic throughout the fiscal year as compared to FY19. The largest number of users in a single day (803 users) visited the website on April 1. The April newsletter, which was sent that day, included information and links about upcoming major events that had recently moved to webinars, including the 2020 Spring WasteWise and College & University Forums and the MassDEP Reduce & Reuse Working Group webinar. More than 150 total people clicked on the links to the event listings.

FY20 RecyclingWorks in MA Website Traffic



The majority of 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), nearly 44% of visits were referrals from Facebook and 13% from mass.gov.



Top RecyclingWorks in MA Webpages Visited in FY20

Page	Page Views
Home Page	18,621
Bottles & Cans Material Guidance	9,487
Food Waste Estimation Guide	8,823
Construction Material Guidance	8,443
Plastics Material Guidance	7,310
Pallets Material Guidance	6,938
Cardboard Material Guidance	6,205
Blog: Common Causes of and Solutions to Restaurant Food Waste	6,049
Electronics Material Guidance	5,019
About the Find-A-Recycler Tool	3,330

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”. CET tested three ad groups: recycling, construction & demolition, and food donation. The food donation ad group was ended in March 2020 due to a low performance rate. The table below summarizes outcomes for the recycling and construction & demolition ad groups. Impressions refers to the number of times that the ad appeared as a search result after someone searched Google for a relevant term, and clicks refers to 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 500 times, resulting in 58 clicks to visit the website. CET will continue experimenting with using Google Ads in FY21 to increase traffic to the website.

FY20 Google Ads Outcomes

Google Ad Group	Impressions	Clicks	Click-Through Rate
Recycling	150	15	10%
Construction & Demolition	353	43	12%

RecyclingWorks Newsletters

CET creates and sends a monthly RecyclingWorks newsletter, during each month except January and July. The email list for this newsletter increased from about 6,250 to more than 6,650 subscribers in FY20, representing a 6% increase in subscribers over the course of the fiscal year.

Newsletter topics in FY20 included: features about businesses assisted by RecyclingWorks, new content posted to the website, upcoming events, and MassDEP announcements. In addition to monthly newsletters, CET sent seven E-blasts to the RecyclingWorks email list to promote the Spring and Fall WasteWise Forums and a MassDEP SWAC meeting.

Towards the end of FY20, CET updated the existing newsletter design to improve user experience and mobile functionality. This updated newsletter format will be implemented in FY21.

RecyclingWorks Social Media

RecyclingWorks has an active presence on Facebook, launched in FY18, and Twitter, launched in FY17.

At the end of FY20 the RecyclingWorks Facebook account had 403 followers, an increase of 33% from FY19. 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 case studies, new web resources, blogs, and events, specifically targeting relevant audiences such as business owners and facility managers. Boosted posts achieved a reach of 2,835 individuals and 149 engagements on average, whereas traditional posts only averaged a reach of

64 users and 6 engagements. The most-viewed post in FY20 was a post reaching over 12,000 users that promoted RecyclingWorks' Remote TA offering during the pandemic. Other popular posts included one promoting registration for the 2020 Spring WasteWise Forum, reaching over 9,000 users, and a blog about Organizations Rescuing Surplus Food from MA Businesses & Institutions, which reached over 8,400 users.

CET also regularly promotes events and other RecyclingWorks content through Twitter. In FY20, CET posted three tweets per week on average. The engagement rate remained relatively consistent to past years, at an average of 6.2 engagements per post. At the end of FY20, the RecyclingWorks Twitter account had 686 followers and a total of 204 post clicks.

Marketing

In FY20, promotional activities included media engagement, developing a case study, speaking engagements and other events, and 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:

- College & University Recycling Coalition
- Waste 360
- Worcester Telegram & Gazette
- Waste Today Magazine
- Waste Dive
- New Food Economy

Case Studies

CET created and posted the following video and written case study in FY20:

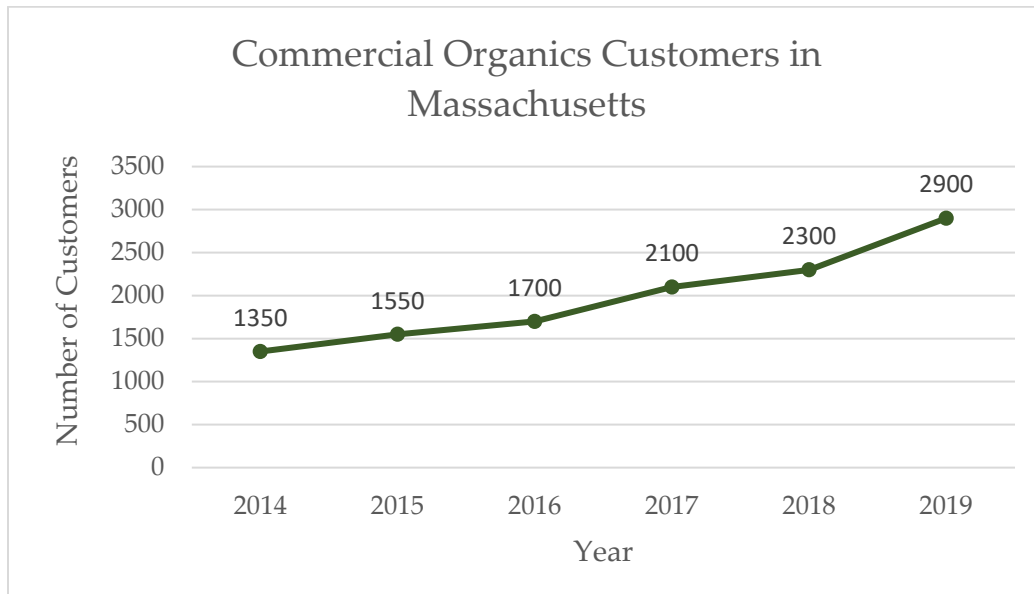
- Wyman's Liquors (update) – featuring the store's return to waste ban compliance and expanded recycling program. ([Video](#)) ([Written](#))

Marketing Materials

In FY19, CET developed a proposal to recognize entities that implemented diversion programs with a RecyclingWorks branded window decal. In FY20, CET finalized the decal design and began piloting the offering with TA recipients that implemented one or more recommendations that resulted in food waste diversion. Five businesses requested and received a window decal for display at their physical location. In FY21, CET and MassDEP will continue evaluating whether such a decal adds value for TA recipients and consider whether to continue or expand this form of recognition.

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. From 2014 to 2019, the number of commercial organics customers in Massachusetts increased from approximately 1,350 to 2,900. This represents a 115% increase in organics customers since 2014.



At the request of the MassDEP, CET conducted outreach to food waste prevention technology platforms in FY19 to quantify the collective impact of these technologies on commercial food waste diversion in Massachusetts. In the spring of 2019, CET interviewed five food waste source reduction technology companies and received baseline data that these companies had 145 customers in Massachusetts and had reduced food waste by 1,025 tons through the end of 2018. In spring of 2020, CET again interviewed the same five companies. Collectively, they reported a total of 154 customers in Massachusetts and an additional 448 tons of food waste prevented in 2019. See the table below for a summary of this data.

Commercial Food Waste Prevention Technology Customers in Massachusetts

Date Reported	Total MA Commercial Customers	Food Waste Prevented
2018 (all time)	145 customers	1,025 tons through the end of 2018
2019 (1 year)	154 customers	448 tons in 2019
Total Food Waste Prevention:		1473 tons to date

CET will interview these platforms again in spring 2021 to evaluate changes in their impact over time.

Outreach

In FY20, CET continued direct outreach and focused on the strategies that were most successful in FY19. Objectives of this proactive outreach included generating TAs, creating opportunities for speaking engagements, recruiting event attendees, and adding new entities to the RecyclingWorks newsletter distribution list.

During FY20 CET conducted targeted outreach to business sectors including hotels and country clubs, which resulted in five referrals for technical assistance. One specific goal for outreach in FY20 was to engage property managers of multifamily, mixed use, and commercial properties to promote new resources and webinar opportunities for this sector. Leading up to the RecyclingWorks and Recycle Smart MA webinar for Property Managers in June 2020, CET staff invited property management contacts that had received technical assistance to attend and shared the finalized sector webpage and waste ban compliance tips for property managers. At the request of the MassDEP, CET also reached out to a few businesses in this sector that had received waste ban enforcement.

During FY19, Leading By Example (LBE) provided CET with a list of five colleges and universities that responded to a survey indicating they were interested in learning more about waste diversion assistance. Outreach to this list continued in FY20, and resulted in one instance of technical assistance. In February 2020, LBE shared a list of eight additional colleges and universities that expressed interest in waste diversion assistance. CET conducted outreach to this list as well, which resulted in one TA, one Mini TA, and one institution recruited for the RecyclingWorks College & University Training Resources Webinar in May of 2020.

Throughout FY20, CET continued to provide the City of Boston with input on resources available through the RecyclingWorks program to support the goals in the city's Zero Waste Plan. For example, CET shared RecyclingWorks program information and recommendations for public-facing materials such as a postcard delivered to local businesses by the City of Boston Inspectional Services Department, and the Boston Zero Waste Business Sector Toolkit webpage. In FY20, CET also organized a tour for City of Boston staff to observe a variety of local commercial waste diversion programs, to highlight successes and illustrate common challenges. During FY21, CET will continue to follow up on technical assistance referrals as a result of the City's outreach to businesses. City representatives may participate in RecyclingWorks technical assistance site visits as appropriate. CET is also a sounding board for the City as they are approached by vendors of waste related products and services.

Events

CET attended and/or presented about the RecyclingWorks program, best management practices, and other topics at the following 27 events, reaching more than 850 attendees.

Event Name	Date
Green Your Bottom Line Workshop at the University of Massachusetts Lowell	7/31/2019
USA Gymnastics Region 6 Congress Presentation: Saving Energy and Reducing Waste	8/2/2019
MassDEP's Commissioner's Summer Speakers Series on Urban Beekeeping and Recycling	8/20/2019
Massachusetts Facilities Administrators Association (MFAA) Annual Expo	10/16/2019
MassRecycle Fall Social & Awards Celebration	10/16/2019
MA Farm to School Institute Workshop	10/19/2019
School Nutrition Association Fall 2019 Conference	10/22/2019
MassDEP SWAC Meeting Presentation	10/24/2019
MassDEP C&D Subcommittee Presentation	10/30/2019
Greater Quabbin Food Alliance Food Waste Solutions for your Business or Event: Session 1	11/6/2019
Presentation to Hampden County Health Officials	11/7/2019
Recycling Resources for Salem Businesses Workshop	11/19/2019
Association of General Contractors of America (AGC) C&D Material Guidance Webinar	11/20/2019
Plastics Recycling for Businesses Northampton Chamber of Commerce Presentation	11/21/2019

Event Name	Date
Presentation for Mass Maritime Academy Sustainable Facility Management Course	11/23/2019
Greater Quabbin Food Alliance Food Waste Solutions for your Business or Event: Session 2	12/4/2019
MA Farm to School Institute Composting Webinar	12/18/2019
Amherst Chamber of Commerce Business Event	2/12/2020
Amherst Rotary Club Speaker Series	2/27/2020
Food Rescue Virtual Meeting with MA Food System Collaborative – Part 1	3/24/2020
Food Rescue Virtual Meeting with MA Food System Collaborative – Part 2	4/9/2020
Food Waste 101: In the Berkshires and Beyond	5/19/2020
C&D Best Management Practices Webinar	5/21/2020
College & University Training Resources Webinar	5/28/2020
Recycling 101 for Multifamily Property Managers	6/3/2020
MassDEP C&D Subcommittee Meeting Presentation	6/18/2020
MassDEP SWAC Meeting	6/25/2020

In FY20, several planned in-person presentations were postponed or transitioned to a webinar format due to COVID-19. CET conducted research to optimize the use of virtual platforms, such as Zoom and GoToMeeting, to create effective virtual events which encouraged active participation from attendees. CET received positive feedback for virtual events organized during the spring of 2020, as they allowed for broader participation from different geographies in the state. Given the uncertainty around in-person events, CET anticipates continuing to deliver many presentations in a virtual format during FY21.

WasteWise

CET continues to promote WasteWise participation to businesses in Massachusetts, as well as participation in the US EPA's Food Recovery Challenge. CET conducted outreach to promote and facilitate two WasteWise Forums in FY20.

The 2019 WasteWise Fall Forum was held on November 13, 2019 at the University of Massachusetts at Dartmouth (UMass Dartmouth). Approximately 70 people attended the in-person event and six attended via webinar, representing businesses from various sectors, the EPA, the MassDEP, universities, and haulers and processors of recyclable materials. The event focused on reducing contamination in recycling collection programs and using technology to reduce food waste. The discussion included presentations by Boloco, Food for All, UMass Dartmouth Dining Services, and UMass Dartmouth Campus Sustainability and Residential Initiatives. Representatives from the EPA also recognized UMass Dartmouth for winning the 2018 WasteWise College/University Partner of the Year. The forum concluded with a tour of the campus' waste diversion programs. CET posted a survey about the Fall Forum, which received 15 responses. Of the 15 respondents, 78% found the forum to be 'extremely' or 'very' informative. Many respondents cited key takeaways, including insight into effective signage and the use of technology apps to incorporate into operations.

CET hosted the 2020 WasteWise Spring Forum on April 16, 2020. The event was originally planned as an in-person event at Brandeis University, but due to COVID-19 related closures and restrictions, the forum was held virtually using the Zoom platform. This focus of the virtual forum was 'Back to Basics', providing facility managers with the information and tools necessary to establish and manage effective waste diversion programs with an emphasis on reducing contamination. Presentations included information on different types of equipment for recycling, organics, and trash collection, and best practices for effective employee training. Forum attendees participated in an interactive quiz that used an informal recycling contamination grading system to evaluate contamination from incorrectly sorted items and soiled materials, which was well received. Over 130 people attended the virtual forum. CET distributed a survey about the Spring Forum, which received 24 responses. Respondents indicated that they particularly enjoyed the interactive quiz and found it valuable as a potential employee training tool.

College & University Forums

Over the course of FY20, CET added more than 150 contacts to the RecyclingWorks College & University (C&U) email list, for a total of 680 contacts representing approximately 165 different colleges and universities. CET sent four emails to this list over the course of FY20, promoting C&U forums and

other topics relevant to the college and university audience. The quarterly emails included information about upcoming events, MassDEP announcements, the Recycle Smart Partner Program, new content posted to the website, and other resources relevant to the C&U audience.

CET hosted the College & University forum on April 16, to coincide with the 2020 WasteWise Spring Forum. This event was also planned as an in-person event at Brandeis University, but due to COVID-19 related closures and restrictions, the forum was held virtually on Zoom. Approximately 55 people attended the virtual event, which provided college and university professionals with a chance to discuss waste-related challenges during disrupted operations, as well as to make program improvements in anticipation of students returning to campus. Brandeis presented on the campus' robust waste diversion initiatives, providing insight into how their university dealt with an accelerated move-out program, and their plans to update waste signage and expand composting while students are off campus. CET sent attendees a survey to collect feedback and topics of interest for future forums, and received eight responses. Multiple respondents commented on the high quality of the webinar, noting a particular interest in the waste quiz for training employees. One person commented "I will be including something like this [waste quiz] in my training presentation once we resume normal operations and trainings."

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 help.

CET had FY20 goals of providing Mini TA to 200-300 generators, and on-site TA to 120-150 generators. This Mini TA goal included outreach to MassDEP Notice of Non-Compliance (NON) and Warning Letter recipients, which is described further in the following section. During FY20, CET provided 368 instances of Mini TA, including outreach to recipients of 283 Notice of Non-Compliance and 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 FY20, as a result of COVID-19 closures, CET began experimenting with delivering fully remote TA. During FY21, CET and MassDEP anticipate a continued need for options to help businesses without going on-site or while limiting in-person interactions. While state facilities continue to be a priority sector for the RecyclingWorks program, in FY20, these facilities were no longer reported separately from other TA. During FY20, 131 entities received TA, including four state facilities. This does not include eight entities that were approved to receive TA but declined further assistance before CET conducted an on-site or virtual visit.

In FY20, 55% of TAs (72 total) addressed both recycling and food waste, and another 9% (12 total) focused on only food waste.

The following chart summarizes the number of facilities receiving various forms of TA in FY20, broken down by associated section of the work plan. CET met the FY20 goal for TA and exceeded the goal for Mini TA.

The attached tracking sheet provides detailed information on a facility-by-facility basis.

Type	# In Progress	# Completed	Total Assisted	FY20 Assistance Goal
Technical Assistance	51	80	131	120-150
Mini TA	116	252	368	200-300
Totals	167	332	499	

Note: Mini TA numbers include outreach to Mass DEP NON and Warning Letter recipients

During FY20, CET developed a survey for TA recipients to obtain feedback on the service and to learn about waste diversion outcomes after receiving assistance. CET sent the survey to 22 previous TA recipients and received complete responses from four entities. All of these respondents indicated that they would be very or somewhat likely to recommend RecyclingWorks TA to another businesses or institution. Two respondents indicated that they implemented new signage as a result of RecyclingWorks' recommendations. When asked about challenges to implementation, respondents cited buy-in from employees or property managers, increased costs (e.g. hauling or new equipment), and limited space available for collection containers.

Lessons Learned:

- When we were unable to provide in-person site visits due to COVID-19 restrictions, CET started offering fully remote assistance. This enabled us to continue helping some entities while operations were limited. Many entities that we have assisted remotely are also interested in receiving on-site assistance once their operations and waste generation return to normal.
- We found that some state facilities were unable to access affordable organics hauling through state contract due to limited options in certain geographies. In investigating further, we found that in select instances the Operational Services Division does allow state facilities to partner with service providers not on state contract.
- CET continues to encounter generators that have been instructed by their hauler to co-collect trash and recyclables. Some TA recipients indicated that their hauler dissuaded them from collecting waste ban materials (e.g. cardboard or single stream) separately from trash either due to low generation volumes or claims that materials would be separated for recycling at the drop-off facility. When co-collecting recyclables and trash, CET advises businesses offered this type of service to obtain verification that waste ban materials are diverted from disposal.

- Some businesses receiving TA have been unable to procure hauling services for an additional material, such as organics, if their primary hauler does not offer it and they have an exclusivity clause in their existing contract.
- As noted in FY19, we continue to encounter generators that collect compostableware and paper products along with food scraps that are sent for depackaging and/or anaerobic digestion. During FY20, we noted that generators seem to be increasingly aware of this challenge and interested in identifying end-sites that are best suited for their material. CET encourages generators to communicate with their hauler to understand where their material is processed.
- The waste hauling marketplace consolidated significantly over the past few years, resulting in more waste materials being hauled out of state before reaching a transfer station, Materials Recovery Facility (MRF), or other end site. When waste is hauled out of Massachusetts, it can be more difficult for generators to verify that waste ban materials are diverted from disposal.

MassDEP Notice of Non-Compliance (NON) and Warning Letter Outreach

During FY20, CET continued to conduct outreach to waste generators who received NONs and Warning Letters from MassDEP for waste ban non-compliance. At the request of the MassDEP, CET stopped conducting outreach to NON recipients in December 2019. CET conducted outreach to Warning Letter recipients throughout the remainder of the fiscal year, and will continue this outreach during FY21.

When a generator responds to CET's outreach, CET assists these businesses in replying to Waste Ban Inspectors and encourages RecyclingWorks TA. In FY20, CET contacted recipients of 283 enforcement letters, including 102 NONs and 181 Warning Letters, with targeted outreach. This was a small increase compared to 274 letters in FY19. Out of these 283 NONs and Warning Letters, 31 letters, representing 21 entities, were referred to receive RecyclingWorks TA (often, a single TA recipient has received multiple letters). Two entities were approved to receive RecyclingWorks TA, but declined further assistance prior to a site visit.

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 promoted Compost Site TA when visiting farms through our work with the Massachusetts Farm Energy Program. In FY20, RecyclingWorks provided Tier 1 TA to fifteen sites, with eleven completed within the fiscal year. Ten sites received Tier 2 TA, with seven completed within the fiscal year. At the close of FY20, there are four active Tier 1 TAs, and three active Tier 2 TAs.

CET organized a practical skills compost workshop for compost site operators that accept off-site food waste or are interested in doing so. The Needham Department of Public Works hosted CET, MassDEP, MDAR, Compost Technical Services, and 21 attendees on October 21, 2019. The half-day workshop focused on operator competency in compost site management, in-field operations, and recipe development. The workshop included a classroom presentation on technical information and an outdoor hands-on curriculum that provided attendees with experience developing compost recipes that include food scraps. CET offered certificates of completion for operators that participate in the US Composting Council Certification to use as documentation for professional development.

During FY20, CET also organized a compost site operations management training for local health officers in Massachusetts. The Bluebonnet Diner in Northampton, MA hosted CET, MassDEP, MDAR, Compost Technical Services, and 34 attendees on February 26, 2020. The training provided local public health officials with regulatory and practical information to support their efforts working with composting operations in their communities. As in FY20, CET offered certificates of completion for the training for attendees to use as documentation for continuing education credits through the MA Board of Registration for Sanitarians.

Construction & Demolition Technical Assistance

To support increased recycling and reuse of C&D materials in Massachusetts, RecyclingWorks continued to offer Construction & Demolition Materials Technical Assistance for construction projects. CET renewed its contract with a construction industry expert that serves as a consultant for the program.

In FY20, RecyclingWorks provided support to three projects: the construction of a green living community, the rehabilitation of apartment buildings, and the construction of office space on two floors. CET, in conjunction with its consultant, held introductory and follow-up meetings with project managers and contractors. The consultant provided feedback on the construction waste management plans for the projects, and also assisted with identifying outlets for materials such as reusable building materials and furniture from one project. Two of the projects are still under construction, and will continue to receive assistance from the consultant in FY21. The third project wrapped up at the end of the fiscal year, and CET is preparing a summary report for MassDEP on the outcomes.

Outreach is ongoing as RecyclingWorks identifies additional projects to include in the pilot for FY21.