

**RecyclingWorks in Massachusetts
Year End Report: Fiscal Year 2017 (July 2016 – June 2017)
Center for EcoTechnology**

The Center for EcoTechnology (CET) is proud to submit the FY17 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 sector through a robust suite of services. The following represents approximated measureable impacts this fiscal year:

- Approximately 7,400 tons of material diverted from disposal (expected to continue annually)
- Direct assistance to nearly 1,300 businesses
- Over 73,000 visits to www.recyclingworksma.com
- 45 speaking engagements/events reaching more than 1,600 attendees

Email / Phone Hotline

CET staff in the Northampton office operate the RecyclingWorks hotline phone and email service. Inquiries are directed to RecyclingWorks resources on www.recyclingworksma.com, referred to CET field staff for follow up, or processed for continued levels of assistance.

The goal in the work plan for this year was to serve 1,150 businesses through the RecyclingWorks hotline and email. We served 960 businesses, which is slightly short of our goal. Since the migration to the new website was completed in late FY16, we have noticed a reduction in calls related to navigating the database search tool. We expect the improvement of the search tool is the main factor in the slight decline in call volume between FY16 and FY17.

Summary Statistics Fiscal Years 2013-2017:

	<i>FY13 Totals</i>	<i>FY14 Totals</i>	<i>FY15 Totals</i>	<i>FY16 Totals</i>	<i>FY17 Totals</i>
Requests from Businesses & Institutions:	213	418	735	988	870
Requests from Processors & Haulers	88	50	92	92	112
Total Number of Requests:	301	468	827	1,080	982
Total Number of Requests Completed:	278	422	842	1,061	960

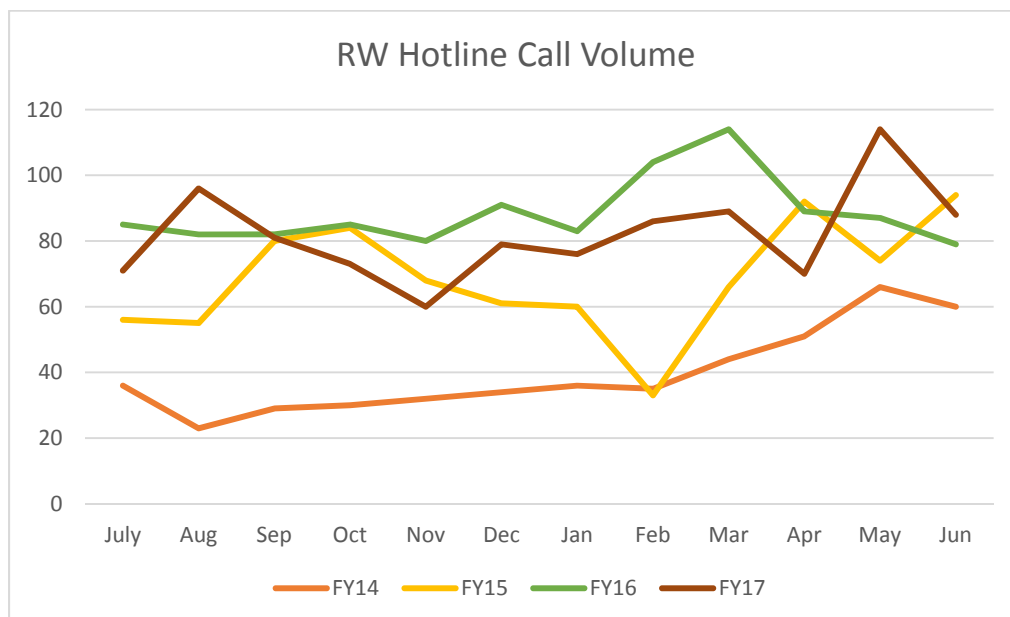
Businesses continue to express great appreciation for this free service. As in past years, the hotline service has fielded a broad array of call/email topics including:

- Food recovery related inquiries, including the disposal ban, starting a diversion program, estimating generation quantities, depackaging, source reduction, and food donation
- Recycling and reuse of construction & demolition materials, in particular wood, pallets, gypsum, and ABC (asphalt, brick and concrete)
- Starting or improving regular recycling programs for cardboard, paper, and containers
- Assistance navigating the Find-a-Recycler database
- How to recycle electronics, such as computers, cell phones, and televisions
- What to do with potentially hazardous materials such as paint, thermostats, and florescent lamps
- What to do with challenging materials, such as mattresses, appliances, PV panels, and styrofoam

- How to recycle plastic items, such as agricultural plastics, plastic film, and bulky rigid plastics
- Inquiries following receipt of a NON, warning letter, or other enforcement from MassDEP
- Employees wishing to start recycling programs at businesses that do not currently recycle
- Tenants of multi-use or multi-family properties interested in recycling or food waste diversion when the property owner does not provide this service
- Recycling or food waste diversion at events
- Issues with compostableware and contamination in organics diversion programs
- Waste diversion inquiries from schools and schools districts, which are usually referred to the Green Team program
- Surplus materials reuse, such as office furniture
- Textile recovery
- Haulers and processors requesting/correcting listings in the service directory
- Consultants seeking assistance with unusual materials
- Compost Site Technical Assistance requests
- Invitations to attend events, engage with media, nominate entities for awards, and find opportunities for potential collaboration
- Requests for information from researchers, agencies in other states, and regional/national organizations focused on waste diversion

By weight, 84% of the waste diversion initiated from hotline calls in FY17 was composted, 15% was recycled, and 1% was reused. Less than 1% percent (12 tons) was food donated.

The call volume fluctuated slightly more than in FY16, with between 60 and 100 calls most months. There was an elevated volume of calls in May, with 114 calls in that month. Many of the calls in May were related to the WasteWise event on May 9.



Lessons learned:

- Improvements to the RecyclingWorks website and Find-a-Recycler search tool over the past two years seem to have resulted in a decline in the frequency of calls requesting assistance navigating the website and search tool.
- The stakeholder process to develop Construction & Demolition (C&D) Materials Best Management Practices seems to have increased the frequency of calls about C&D materials. The hotline received over 75 C&D related inquiries in FY17. With the information developed for the C&D BMPs and related modifications to the materials in the Find-a-Recycler search tool, CET is better equipped to provide accurate information on managing C&D materials.
- The RecyclingWorks program continues to gain attention from outside Massachusetts, particularly with regards to food waste diversion. Tools and information that CET has developed for RecyclingWorks are shared and cited by other researchers, agencies in other states, and regional/national organizations. Some of the most frequently cited RecyclingWorks tools include the Food Waste Estimation Guide, Food Donation Guidance, and Source Separation Guidance. The prominence of these tools underscores the value of keeping the information they contain up-to-date.
- Changes in recycling markets require frequent updates to the Find-a-Recycler database and information provided through hotline inquiries. For example, in FY17 we found that fewer entities were accepting carpeting for recycling, but more were accepting gypsum.

RecyclingWorks Website

CET staff has worked to maintain and improve the website and database this past fiscal year. In FY17, 28 haulers and processors were added to or updated in the database, for a total of 376.

Examples of updates made in FY17 include:

- Modified the Find-a-Recycler search tool based on results of user testing. Improvements include more intuitive labels for search boxes, new options for sorting search results, and a filter to show recycle/compost or reuse/donate entities.
- Modified database entries to indicate whether each is a recycle/compost and/or reuse/donation entity. Also added a search engine optimization (SEO) keyword to each listing.
- Updated the List Your Business Form to be easier for haulers and processors to fill out.
- Posted Construction & Demolition (C&D) Materials Best Management Practices and Hauler Contracting Best Management Practices.
- Updated menus to make it easier to navigate to the new C&D and Hauler Contracting BMPs pages, as well as the Compost Site TA page.
- Updated RecyclingWorks Food Donation Guidance to incorporate edits from the 2016 version of the Comprehensive Resource for Food Recovery Programs.
- Created an archive of RecyclingWorks newsletters and uploaded newsletters posted since August 2015.
- Updated database listings for document shredding and document destruction material category.
- Uploaded FY16 RecyclingWorks Annual Report.
- Updated the Depackaging Facilities List.
- Conducted research regarding microfilm/microfiche recycling and posted information to the College & University sector page.

RecyclingWorks Newsletters

CET creates and sends a monthly RecyclingWorks newsletter. The email list for this newsletter increased from 2,600 to more than 4,700 subscribers in FY17, representing a 55% increase in subscribers over the course of the fiscal year.

Newsletter topics include: features about businesses RecyclingWorks has assisted, new content on the RecyclingWorks website, and promotion of events. In FY17, a significant number of articles in RecyclingWorks newsletters focused on development of the C&D and Hauler Contracting BMPs to promote stakeholder meetings and share BMPs content as it developed. In addition to monthly newsletters, CET sent four E-blasts to the RecyclingWorks email list. Two of these E-blasts promoted WasteWise forums. The other two promoted the ReuseConex Conference in October and the related Zero Waste Class.

Case Studies

CET created and posted the following case study:

- [The Columns video case study](#) on source separation of construction & demolition materials.

CET also created two other video case studies:

- Food Recovery at UMass Amherst
- Deconstruction and Reuse of Building Materials

These video case studies will all be posted in early FY18, pending final review. CET also drafted written accompaniments to each of the three video case studies created in FY17. These written case studies will be formatted and posted early in FY18.

In FY17, CET created an instructional video on Kitchen Source Separation of food waste. This video will also be posted in early FY18, pending final review.

Website Statistics

Comparing FY17 to FY16, overall activity on the RecyclingWorksMA.com website continued to increase. There were approximately 73,186 sessions in FY17, a 5% increase over FY16. Approximately 79% of sessions in FY17 were new visitors, while 21% were returning to the site.

	Visitors	Sessions	Page Views
FY2013	12,127	16,566	46,621
FY2014	33,068	43,807	108,203
FY2015	54,000	65,000	143,000
FY2016	55,521	69,572	149,315
FY 2017	57,995	73,186	135,528
Percent Change FY2016 – FY 2017	4.5%	5%	-9%

Audience Overview

Jul 1, 2016 - Jun 30, 2017
Compare to: Jul 1, 2015 - Jun 30, 2016

Email Export Add to Dashboard Shortcut

This report is based on 100% of sessions. [Learn more](#) Greater precision

All Users
+0.00% Sessions

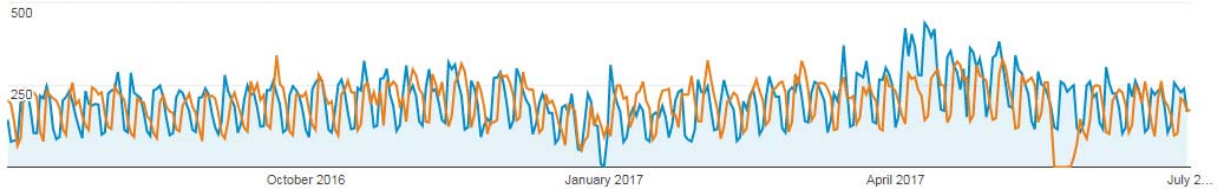
+ Add Segment

Overview

Sessions VS. Select a metric

Hourly Day Week Month

Jul 1, 2016 - Jun 30, 2017: Sessions
Jul 1, 2015 - Jun 30, 2016: Sessions



Sessions

4.92%

73,186 vs 69,752



Users

4.46%

57,995 vs 55,521



Pageviews

-9.23%

135,528 vs 149,315



Pages / Session

-13.49%

1.85 vs 2.14



Avg. Session Duration

-12.35%

00:01:42 vs 00:01:56



Bounce Rate

7.44%

70.25% vs 65.38%



% New Sessions

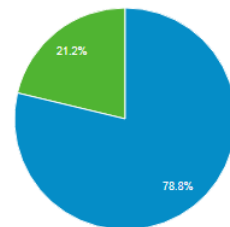
-0.26%

78.73% vs 78.94%

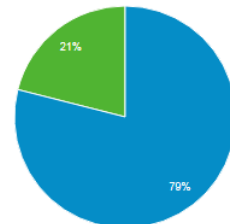


■ New Visitor ■ Returning Visitor

Jul 1, 2016 - Jun 30, 2017



Jul 1, 2015 - Jun 30, 2016



Marketing

In FY17, promotional activities included media interviews, articles for publications, conference tabling, and speaking engagements/presentations.

CET attended and/or presented at the following 21 events to promote RecyclingWorks, the Commercial Organics Waste Ban, food donation guidelines, and other topics.

Event Name	Date
Amherst BID	8/4/2016
FDA Annual Northeast Region Food Protection Seminar	8/12/2016
MassDEP SWAC Meeting	10/27/2016
Berkshire County Boards of Health Alliance Annual Dinner	11/10/2016
UMass Amherst Built Environment Class	11/10/2016
New England Cemetery Association	11/30/2016
A Better City Lunch and Learn	12/13/2016
Greater Quabbin Food Alliance Meeting	12/6/2016
MA Food Policy Council Meeting	1/13/2017
Stakeholder Meeting on Food Waste at Harvard Law School	1/19/2017
Town of Wellesley's 3R Working Group	1/26/2017

Event Name	Date
Boston Green Tourism	2/9/2017
MassRecycle R3 Conference	3/27/2017
Green Your Bottom Line Workshop at Stop and Shop	4/4/2017
MA and NH Alzheimer's Association	4/5/2017
MassDEP regional section chiefs at MassDEP Central Regional Office	4/20/2017
Shawmut Construction	4/24/2017
Green Your Bottom Line Workshop at Gorton's	5/3/2017
Massachusetts Department of Housing and Community Development	5/10/2017
Northeast Resource Recovery Association Conference	5/22/2017
MA Association of Vocational Administrators Conference	6/28/2017

Marketing Targeted Outreach

In March 2017, CET and MassDEP developed an addendum to the FY17 work plan to pilot a proactive outreach strategy to reach a broader audience. The objectives of this outreach included: add contacts to the RecyclingWorks newsletter distribution list, increase attendance at RecyclingWorks events, and generate TAs.

From March through June, CET tested a variety of methods for conducting outreach; a table outlining the various outreach efforts and their results is below. Most outreach was conducted over the phone and by email. CET also tried a physical mailing, by sending a letter and RecyclingWorks flier to members of the Springfield Chamber of Commerce.

During this four month period, CET added over 900 new contacts to the RecyclingWorks newsletter list. However, the actual number of newsletter subscribers increased by 675 subscribers, because about 60 emails are dropped from the list each month due to bounces and unsubscribers. Approximately 500 of the new contacts were a direct result of targeted outreach efforts. The increase in the newsletter list was a little less than half the goal of adding 2,000 contacts over four months. Many of the outreach efforts CET tested required more effort per successful addition of a contact than we anticipated.

The targeted outreach efforts also recruited four attendees to the WasteWise Spring Forum and generated three TAs.

Specific strategies piloted in this targeted marketing campaign included:

Outreach Strategy	Number Contacted	Number Added to List	TAs Generated	Other Results	Description
Green Your Bottom Line Workshop attendees	100	60		3 potential TAs	Added attendees of two Green Your Bottom Line Workshops to newsletter list. Conducted follow-up outreach to promote RecyclingWorks TA.
Recent conference/event attendees	50	33			Called/emailed attendees from conferences and events RecyclingWorks attended.
Food service entities near Gillette Stadium	130	40		4 WasteWise attendees, several hotline questions	Called/emailed food service entities near Gillette Stadium to promote RecyclingWorks services and invite them to the WasteWise Spring Forum.
Colleges & Universities	100	20		contacts also added to C&U list	Called/emailed contacts at colleges & universities to invite them to C&U Spring Forum.
Existing RecyclingWorks contacts	800	200			Collected email addresses for RecyclingWorks contacts that did not have emails recorded.
CET contacts	60	19	1		Called/emailed businesses CET has assisted through other programs to promote RecyclingWorks services.
Property Managers	60	5		1 mini TA	Compiled list of property managers and began outreach; CET to conduct more outreach to this sector in FY18.
Haulers and processors	35	17			Collected missing emails for haulers.
Volunteer environmental groups	20	10	1	2 more potential TAs or presentations	Called/emailed volunteer environmental groups to promote the RecyclingWorks Town of Lenox model of assisting businesses in a town with waste diversion.
Springfield Chamber of Commerce members	70	25	1		Sent physical mailing and made follow up phone calls to Springfield CoC (CET is a member).
DPW Recycling Coordinators		46			Outreach to DPW Recycling Coordinators that could help promote RecyclingWorks services to businesses in their towns.

CET was most successful in targeted outreach when there was some existing connection between the entity and CET/RecyclingWorks. For instance, about one third of entities that CET has previously assisted through other programs were interested in learning more about RecyclingWorks services; this strategy also generated a TA. Strategies with a “hook,” like the WasteWise event at Gillette Stadium, or the Town of Lenox model for environmental groups, also yielded many new contacts. Outreach strategies that involved a cold call and no specific hook tended to be the least successful.

WasteWise

CET continues to promote the Massachusetts chapter of WasteWise, as well as the EPA WasteWise program and EPA Food Recovery Challenge. CET conducted outreach to promote and facilitate two WasteWise Forums in FY17.

The 2016 WasteWise Fall Forum was held on December 1 at Raytheon in Tewksbury. Approximately 30 people attended, representing businesses from various sectors, the EPA, the MassDEP, universities, and haulers and processors of recyclable materials. At the event, the EPA presented Food Recovery Challenge Regional Achievement Certificates to 2016 awardees from Massachusetts. The event focused on discussing the two Best Management Practices (BMPs) that RecyclingWorks developed in FY17: Construction & Demolition Materials and Hauler Contracting. The hauler contracting discussion included a presentation by Raytheon and E.L. Harvey and Sons about their partnership to achieve Zero Waste Business Certification from the USZWBC. CET posted a survey about the Fall Forum that received 13 responses. The primary reasons survey respondents cited for attending the event were the hauler contracting discussion and networking.

On May 9, Gillette Stadium hosted the 2017 WasteWise Spring Forum on food recovery across the EPA Food Recovery Hierarchy. Forum attendees learned about many options for diverting food scraps and surplus from disposal, as well as how to evaluate the potential impact of food waste diversion on operating costs. The forum also included a presentation on Gillette Stadium's waste diversion initiatives. It concluded with a tour of the stadium and the Grind2Energy system that converts the stadium's food scraps into slurry for anaerobic digestion. Approximately 55 people attended. CET posted a survey about the Spring Forum that received 10 responses. All survey respondents reported that the forum was an effective use of their time and a majority of the respondents (7) reported that the forum was "Very Informative." When asked about their main takeaway from the forum, multiple respondents mentioned understanding the food recovery hierarchy better and making good contacts.

College & University Forums:

Over the course of FY17 more than 100 contacts were added to the RecyclingWorks C&U list, for a total of 404 contacts representing approximately 120 different colleges and universities. CET sent five emails to this list over the course of FY17 promoting C&U forums and other topics relevant to the college and university audience. CET conducted outreach to promote and facilitate two C&U Forums in FY17

The 2016 C&U Fall Forum was held on October 25 at UMass Lowell with 17 attendees. Similar to the WasteWise Fall Forum, the agenda was built around discussing the Construction & Demolition Materials and Hauler Contracting BMPs. UMass Amherst presented on C&D materials recycling, while UMass Lowell and Casella Waste Systems presented on their contracting relationship.

The 2017 C&U Spring Forum was held on May 4 at Smith College in Northampton with 27 attendees. The forum focused on source reduction of wasted food on college and university campuses. A panel of five schools (Smith College, University of Connecticut, Williams College, Worcester State University, and UMass Amherst) discussed the tools and strategies they use to reduce wasted food.

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.

The following chart summarizes the number of facilities receiving various forms of Technical Assistance in FY17, broken down by associated section of the work plans. The attached tracking sheet provides detailed information on a facility-by-facility basis.

CET had a goal of providing technical assistance to 242 generators in FY17 (150 through mini TAs and 92 through on-site TAs). CET assisted 271 generators, which surpassed this goal. However, the number of on-site TAs was a bit lower than the goal (74 TAs) while the number of mini TAs was significantly higher than the goal (197 mini TAs).

In FY17, about equal proportions of the TAs were for food waste and recycling, while a significant portion (about 20%) looked at both food waste and recycling. Two TAs focused on C&D materials.

Type	# In Progress	# Completed	Total Assisted	FY17 Assistance Goal
Technical Assistance	29	37	66	80
State Facilities	4	4	8	12
Mini-TA	94	103	197	150
Totals	127	144	271	242

Lessons learned:

- When conducting outreach to NON and warning letter recipients, those who have recently received the notice are generally more responsive than entities that received the notice earlier in the quarter. Frequently, the person the letters are addressed to is not the best contact and additional research and outreach is necessary to track down the person who manages the facility's waste. NON recipients are more frequently receptive to CET's offer of assistance, but some warning letter recipients also appreciate this service.
- Over the course of FY17, the issues around compostable serviceware shifted dramatically. In early FY17, a major processor of these materials in Eastern Massachusetts was out of commission, leaving many generators with front-of-house collection programs without an outlet for their organic materials. Since several depackaging facilities began operating later in FY17, there are new outlets for front-of-house programs. However, depackaging facilities tend to remove compostable serviceware from the organic stream. Generators that send compostable serviceware to these facilities will need to evaluate whether to adjust the types of materials they procure.
- The new depackaging facilities in Massachusetts have opened up diverting packaged food as a viable option for many more generators of this material type.
- State facilities are frequently interested in ordering fewer recycling containers than the order minimums on state contract. Combing orders of popular items, such as recycling carts, may make state equipment requests more viable.
- While staff changes at entities receiving technical assistance continue to interrupt implementation of some diversion programs, in FY17 we also saw examples when a new employee reignited interest in diversion. It is worth checking back in with a generator to re-establish the relationship after a new staff member is in place.
- Geographic areas that lack infrastructure for hauling and processing organics, such as Cape Cod and Martha's Vineyard, continue to present complex challenges when promoting food waste diversion. While interest continues in these areas, infrastructure is slow to develop and sustained attention is necessary to engage the multiple stakeholders promoting this development.

Notice of Non-Compliance (NON) Outreach

RecyclingWorks continued to conduct outreach to waste generators who have received NONs from MassDEP for waste ban non-compliance, and those which haven't returned to compliance. In addition, businesses that have been issued warning letters by MassDEP for waste ban material violations were contacted and encouraged to assess current recycling systems. In all cases, RecyclingWorks assists these businesses in responding to Waste Ban Inspectors and encourages technical assistance. In FY17, RecyclingWorks staff contacted 118 generators through NON and warning letter outreach. Thirty-eight of these generators have returned to compliance, including four that received RecyclingWorks Technical Assistance. Sixty-four are still in process, including five that are currently receiving RecyclingWorks technical assistance. Sixteen were not interested in RecyclingWorks assistance, but are still out of compliance.

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 (TA). CET renewed contracts with two composting industry experts, who conduct site visits for approved facilities and produce reports based on their findings, to serve as consultants to the program. CET conducted outreach through the Organics Subcommittee and the list of registered compost sites in MA, as well as municipal composting facilities and other leads. CET also promoted Compost Site TA when visiting farms through the Massachusetts Farm Energy Program. In FY17, RecyclingWorks provided Tier 1 TA to ten sites, with six completed within the fiscal year. Seven sites received Tier 2 TA, with five completed within the fiscal year. At the close of FY17, there are four active Tier 1 TAs, and two active Tier 2 TAs.

In addition to the Technical Assistance offered through RecyclingWorks, one compost workshop was held in Wilmington with thirty-six attendees. The Wilmington workshop focused on operator competency in compost management and regulatory compliance. The workshop attendees included Municipal Assistance Coordinators, composting operations registered with MDAR or MassDEP, municipal operators, small scale site operators, and other parties interested in developing a compost site. In FY17, CET collaborated with the Massachusetts Environmental Health Association to design a workshop to educate Board of Health officials on compost site operations. This workshop will be held in FY18.

Best Management Practices

Construction & Demolition Materials Best Management Practices

In FY16, RecyclingWorks began the process of developing Best Management Practices for Construction & Demolition (C&D) Materials, and kicked-off the stakeholder engagement process with a discussion at the June 2016 MassDEP C&D Subcommittee Meeting. In FY17, CET completed the stakeholder engagement process, developed the BMPs, and posted the guidance to the RecyclingWorks website. CET conducted outreach to recruit contractors, architects, C&D haulers and processors, reuse outlets, building officials, and others involved in the C&D waste stream to participate in this process. In FY17 RecyclingWorks facilitated 13 stakeholder discussions on C&D materials; these included eight meetings in which RecyclingWorks collaborated with an industry association, three geographically-based meetings, and discussions at the Fall 2016 C&U and WasteWise Forums. RecyclingWorks presented the draft C&D BMPs at the Eleventh Annual Environmental Business Council C&D Summit on February 26, and the final document at the MassDEP C&D Subcommittee Meeting on March 21. The C&D BMPs were finalized and posted to the RecyclingWorks website in March 2017. The guidance includes information on waste bans, hazardous materials, creating waste management plans, deconstruction, reuse, source separation, and C&D processing.

Hauler Contracting Best Management Practices

In FY16, CET conducted interviews with eight haulers to begin developing Best Management Practices for Businesses Contracting for Trash, Recycling, and Food Waste Hauling Services. In FY17, CET organized three stakeholder discussions with haulers, generators, and property managers to gather further input. CET also attended the MassDEP's two Municipal Hauler Regulations stakeholder meetings, as the topic included overlapping issues. The Hauler Contracting BMPs were finalized and posted to the RecyclingWorks website in March 2017. The guidance includes tips for businesses on understanding their waste, creating and adjusting contracts, complying with waste disposal bans and other regulations, and communicating effectively with their waste hauler. CET presented the BMPs draft at the MassDEP Solid Waste Advisory Committee Meeting in February, and the final document at the R3 Conference in March. In FY18, CET will organize sector-based tip sheets to further assist generator compliance with the waste bans and contracting agreements.

MassDEP Green Business Specialist

The Green Business Specialist (GBS) working out of MassDEP's Boston Office continues to support the RecyclingWorks program, the Organics Action Plan, Solid Waste Master Plan, and waste ban compliance. Specific activities in FY17 included:

- Coordinated with other MassDEP office staff to place orders for recycling equipment for state facilities; in FY17, five orders were completed.
- Supported development of Best Management Practices for Construction & Demolition Materials by attending stakeholder meetings, writing up meeting notes, and drafting the final guidance document. The GBS also presented the final guidance document to three industry groups.
- Drafted updates to the Food Donation Best Management Practices to correspond to the most recent version of the Comprehensive Resource for Food Recovery Programs.
- Followed up on RecyclingWorks hotline calls and mini-TAs.
- Updated the list and map of organics processors.
- Updated the list of companies providing depackaging services.
- Created a map and list of materials recovery facilities (MRFs) in Massachusetts.
- Monitored Return to Compliance responses and recorded them in the RTC analysis database.
- Generated waste ban warning letters from WBCP reports at the Municipal Waste Combustors.
- Processed third party inspection reports from landfills and transfer stations.
- Coordinated with MassDEP and ICF staff to support the development of the Massachusetts Commercial Food Waste Ban Economic Impact Analysis.