Town of Groton and Town of Stonington

SOURCE SEPARATED ORGANIC MATERIALS

Final Report

July 2005

Composting commercial food waste in volume-based user fee towns: Pilot collection and composting of source separated organic material (SSOM) from commercial and institutional facilities in the Towns of Groton and Stonington.

SSOM final report for DEPs website
9/04 DCR

COMPOSTING COMMERCIAL FOOD WASTE IN VOLUME-BASED USER FEE TOWNS: PILOT COLLECTION AND COMPOSTING OF SOURCE SEPARATED ORGANIC MATERIALS (SSOM) FROM COMMERCIAL AND INSTITUTIONAL FACILITIES IN THE TOWNS OF GROTON AND STONINGTON

OVERVIEW

The Towns jointly established a pilot commercial food composting program funded in part through a Connecticut Department of Environmental Protection (DEP) grant. The objective was to determine if the generators of this waste could, by source separating food waste from other waste, decrease their disposal costs under the Towns' mandatory commercial waste collection programs. In addition, the Towns wanted to forecast how or if the diversion of food waste on a larger scale might effect the total waste being disposed at the regional incinerator. The pilot ended in July of 2004, with over a half million pounds (276.25 tons) of organics collected for composting. Along with the food and waxed cardboard, an additional 390 tons of municipal wood chips went to Earth Care Farm, which was mixed with the SSOM to produce a high quality landscape product.

PROGRAM DESIGN
TEAM

Solid waste managers from the two participating towns: John Phetteplace, Town of Stonington and Stacey Ohlmann-Leitch, Town of Groton.

Hauler, provided retrofitted collection vehicle and collection and delivery services: F.E. Crandall Disposal Services

Composting consultant, provided educational material and worked with participants: Diane Rhodes

Support staff, clerical assistance: from both Groton and Stonington Solid Waste Divisions

PROGRAM DESIGN
ROLLING STOCK

Dedicated waste disposal truck- retrofitted with a hydralic arm to lift the 64 gallon totes

"Steam Jenny" mounted on a trailer- to steam clean the totes in the field after emptying the contents into the truck

Pick-up trucks, a stake body truck and a tractor/roll-off combination- for both the distribution and the switching of totes throughout the project

Tractor/trailer combination- to transport woodchips to Earth Care Farm

MATERIALS TARGETED FOR COMPOSTING

Fruits and vegetables

Salad, pasta, grains, beans

Coffee grinds and filters

Produce trimmings & non-marketable spoiled produce

Food preparation waste materials

Plate scrapings, spoiled food

Baked goods

Seafood items, including shellfish

Deli products (without wrappers)

Florist trimmings & spoiled plant materials

Meat and poultry

Waxed cardboard accumulated separately (from the food waste)

Dairy foods

PROGRAM DESIGN
SOLICITATION OF PROGRAM PARTICIPANTS

During the design phase, each town had selected about 25 potential participants to be approached with the program details and invited to volunteer. By the time that the program was ready to begin, some of the facilities on the lists were unavailable for a number of reasons. Several were no longer in business. In some cases, contacts were difficult to establish, especially in the restaurant business, where the working day begins about 11:00a.m.and managers are not available until about 4:00 p.m. Other types of businesses were more available to make appointments to discuss the program.

The first contact consisted with a visit from one or more of the staff to explain how the program works and to give written explanation and education materials to review. In most cases, the managers were enthusiastic after the presentation and agreed to volunteer to try the program. At that time, the managers had the option either to do their own orientation with their staffs or to have the SSOM staff consultant give the orientation. Almost exclusively, the restaurant owners chose to do the education themselves. The stated reasons for this were issues of multiple work shifts and employees who did not speak English. For the most part, managers or owners opted to train their shift supervisors, who would in turn train their line employees.

PROGRAM DESIGN
EDUCATIONAL MATERIALS

Following are the outreach and educational materials developed for the SSOM participants to the project and for the residents of Groton and Stonington

Window Sticker- The project logo on a window sticker was mainly for SSOM participants' use; to identify themselves and their businesses as partners in the organics collection project.

Program guidelines and education bulletin - This four-page handout was both a "how-to" for this specific project and a general information piece on the process of and the rationale for composting. It was used as an introduction to the topic as staff approached potential participants. In turn, the piece was reproduced in quantity for distribution to all affected employees of participant businesses. The intent was for managers to give this handout to new employees as an education tool and as a reference. It was also available to the two towns for general distribution to residents.

"Yes"and"No" sheet- this one page sheet was the nuts and bolts of the Groton/Stonington food separation program. It specifies what waste items are acceptable for composting and what ones are not. It also addresses the way waxed corrugated cardboard can be set aside for inclusion in the collection. This information was translated into Spanish, which was the first language of many of the food handlers. The piece was designed to be posted at the places where food waste is accumulated; either in the pre-consumption preparation area or in the post- consumption disposal area. The sheet was laminated for protection and permanency in this sometimes messy environment.

PROGRAM DESIGN
COLLECTION SCHEDULE

Initially, the collection schedule was planned for three days per week. The project had its' first collection in August of 2003, and started with a portion of the eventual permanent group of generators. Because of the relatively small tonnage at first and the fact that the hot weather was coming to an end, it was decided to change the collection schedule to two days a week, at least for the time being. As the project progressed, and the costs associated with collection became evident, there was no choice but to stay with the two day a week schedule on a permanent basis. This is an issue that is of major significance in any future discussions of service to restaurants where aesthetics are so important

PROGRAM DESIGN
DISPOSAL FACILITY

Earth Care Farm, of Rhode Island, which is registered with the Rhode Island Department of Environmental Management received all the materials collected as part of this project. That included the SSOM, waxed corrugated cardboard and the chipped yard waste.

The Farm is advertised as "Rhode Islands' oldest operating farm composter", producing farm-made compost since 1979. Some of the many raw compost ingredients used at the farm are farm animal manures, and the animals'spent bedding such as sawdust, wood shavings and straw. The farm also utilizes "exotic" manures from Roger Williams Park Zoo and the Ninigret Park circus. These include waste from elephants and camels. Additional raw materials used at the farm are fish scraps, shell fish, seaweed, paper, wood chips, spent bark mulch, wood ashes, diatomaceous earth and mulch hay in addition to the food, waxed cardboard and chipped yard waste which our project contributed.

The major bulking agent used at Earth Care Farm is leaves, which they accept from surrounding Rhode Island towns. The double ground yard waste delivered to the farm as part of this Connecticut project was a large part of the ultimate success of the effort. The tub grinder that produced the wood chips is owned by the Southeastern Connecticut Regional Resources Recovery Authority and is available to local towns to create a product from municipal yard waste that was previously buried in "Bulky Waste" landfills in the past. These types of landfills virtually no longer exist in Connecticut. The intersect of the closing of bulky waste landfills and the attendant need to volume reduce incoming municipal yard waste has created a potential opportunity to take the product and put it to use.

PROGRAM DESIGN
PRODUCT

Either as a bulking agent or as a stand-alone product, it has potential value to Connecticut municipalities. Food waste/chips….stand alone/erosion, water retention, weed suppression

PROGRAM DESIGN
UNIT COSTS

Source Separated Organic Material Pilot Project

Title/Description	***Tonnage***	***Hours***	***Cost***
Project Coordinator			
I		344	$7,183.70
II		110	$3,087.31
Adminstrative Assistant			
I		158.25	$3,618.80
Equipment Operator			
I		443.5	$8,392.53
II		49.5	$1,160.28
Scale Master			
II		18	$275.41
Tipping Fee(Earth Care Farm)	173.11		
I			$3,529.45
II			$3,394.95
Materials Provided			
I- Woodchips	390.00		
I- Misc. materials			$3.32
Container Storage			
I - Welles Garage 2,640 sq. ft			$112,140.00
assessed rate $7/sq.ft.			
Transportation			
Pick-up FEMA Rate $11.75/hr			
I		4	$47.00
II		49	$575.75
Roll-off FEMA Rate $66.00/hr			
II		0.5	$33.00
Stake Body Truck FEMA Rate $13.75/hr			
I		337.5	$4,640.64
Tractor (woodchips) FEMA Rate $35/hr			
I		52	$1,820.00
Trailer (woodchips) FEMA Rate $34/hr			
I		52	$1,768.00
In-Kind Group I		763.5	$143,143.44
In-Kind Group II		147	$8,526.70
Total - In-kind	**563.11**	**910.5**	**$151,670.14**
Consultant			$13,670.60
Containers			$11,207.00
Materials and Supplies			$694.85
Liners			$110.16
Postage/Printing			$374.93
Transportation (FEC)			$39,765.00
Total - Grant Funds			**$65,822.54**
Grant Funds- unused			$4,177.46
Grand Total (grant + in-kind)			**$217,492.68**

I = Town of Groton
II = Town of Stonington
FEC = F. E. Crandall

Results

1. SSOM composted- 173.11 tons (x60.00=10,386.60-x40.00=6924.40)
$65,822.54/173.11=$360.23

2. Wood chips delivered- 390 tons, 2 uses, 10:1 ratio for SSOM and for ECFs' use

3. Tipping fee differential- ($60.00/ton-$40.00/ton) for towns

4. Participants- Opportunity for participants to identify the financial impact of source separating food waste- ($0/ton for weight- based portion of bill) and to assess the operational realities involved for their specific facility/business type. It was found that it saved money for larger establishments that utilized compactors but not for those who used dumpsters. They could not reduce the size of their dumpsters for collection. The training was labor intensive for the participants as the received facility was picky about contaminants.

5. Towns- Opportunity for towns to identify the financial and operational realities of this exercise and to apply the information to discussions toward future planning. It was found that the tipping fee was two-thirds the cost of the waste-to-energy facility but the cost savings was eaten up by the more labor-intensive efforts required to collect organics. (The additional wash truck, overloaded containers, oiling containers, etc.) as well as the great distance to transport material to the permitted facility out-of-state. The excessive labor costs were too much of a burden an operational burden to provide this service at 'no cost' to the consumer.

6. Collection company- Opportunity for the project hauler to identify the financial and operational issues related to the collection and delivery of SSOM.
Issues include analysis of type of vehicle best suited to this operation, how to keep totes clean, worker safety, and record keeping including method to weigh individual totes.

7. Product- Used in a residential flower and vegetable garden, lab tested for nutrient value.

8. Actual costs- (vs. expected costs?) The actual cost of the operation exceeds the expected costs.

Barriers

1. Mechanical: truck, truck lift, steam jenny, totes, restricted weighing with portable scale

2. Staff turnover of participants

3. Choice of presenting info to line personnel by self (participants) not sufficient, other education issues (overfilling, etc.)

4. Weather/temperature related issues

5. Cleanliness/odor/unsightliness issues

6. Central "clearing house" not direct enough link for good, rapid communication

7. Costs higher than expected

8. Some participants began program without sufficient preparation, as a result didn't do well

9. Distance to disposal facility

Findings:

1. A broad range of knowledge that could only be acquired though field experience over the course of the program year, the necessity of trials

2. Data in some detail to use in future planning

3. Trials within the trial gave information pertaining to various methods of keeping the collection totes clean

4. Detailed feedback from participants, which was surprisingly uniform

5. The potential for diverting food waste from the regional incinerator is possible with careful planning and the use and expansion of the existing infrastructure.

6. The significance of the availability of municipally prepared wood chips, to match with the "green" food waste in approximately 10:1 ratio

7. Need composting site(s) in close proximity to sources of feedstocks

Recommendations:

1. Do a trial run ahead of official start of program.
2. Make education of participants mandatory, on-going and done by SSOM staff
3. Have a clearing house to route incoming calls to the appropriate person quickly