



FOOD SCRAP MANAGEMENT OPTIONS

This report is neither inclusive, nor an endorsement of any particular composting technique, device or company. It does provide examples of how food scraps can be diverted from landfills and nutrients returned to soils.

Decomposition occurs under variety of conditions – with air (aerobic), without air (anaerobic), at ambient or mildly warm temperatures (mesophilic), and high temperatures (thermophilic). Decomposition is always dependent on moisture and millions of microorganisms. These small life forms produce enzymes that disassemble food scraps. Larger organisms (beetles, ants, worms) are also part of the process. They chew, grind and ingest organics to assist decomposition. Most restaurants have very limited space to compost on site and instead depend on haulers and distant facilities to do the job. There are examples of restaurants and schools that compost on site with great results **COMPOSTING ISN'T ROCKET SCIENCE**. In fact, nature has been successfully doing it for billions of years.

Separating wet food wastes from the refuse bin clears the way for capturing the remaining dry recyclable materials. Because food waste is heavy, dedicated food collection is more costly than refuse collection. However, those higher collection costs can be offset with

- Collection of recyclables
- Aggressively reducing non-recyclable materials
- Reducing trash collection and its costs.

Option 1 – Off Site Commercial Composting

These local companies (below) haul food and other organic waste to composting facilities where it is converted to soil amendments. Often these companies work with individual food establishments to design and operate food recycling programs.

<p>Athens Services 14048 E. Valley Blvd. City of Industry, CA 91746 (888) 336-6100 www.AthensServices.com JCilloniz@AthensServices.com</p>	<p>Currently, <i>Athens Services</i> has the contract with the City of Los Angeles Organic Waste Recycling Program. <i>Athens</i> picks up waste and hauls it to <i>Community Recycling & Resource Recovery, Inc.</i> Additionally, some waste is hauled to its own compost facility in Victorville known as <i>California Biomass</i>. <i>Athens</i> also has routes in West Hollywood.</p>
<p>Crown Disposal 9189 DeGarmo Avenue Sun Valley, CA (866) 767-0675 www.CrownDisposal.com</p>	<p><i>Crown Disposal</i> and its sister corporation, <i>Community Recycling and Resource Recovery, Inc.</i>, design and operate residential and restaurant food recycling programs. <i>Community Recycling</i> processes produce scrap from California’s largest grocers.</p>

At this time there are no food collection routes in Burbank. Jennifer Cilloniz, Food Waste Manager at *Athens* indicated that a route could likely be established with a minimum of 20 restaurant subscribers.

The City of Los Angeles started a pilot program in April 2004, and took it citywide in April 2007. The city started with 8 restaurants and now has 400 participating in the program. Approximately 1000 tons a month of organic food waste are being diverted from the landfill to a composting facility.

Gingergrass Restaurant in Silverlake participates in the *Athens Services/City of Los Angeles Organic Waste Recycling Program*. According to Leslie VanKeuren with *Sustain LA Restaurant Consulting*, upon enrolling in the program, *Gingergrass* was provided with green slim jim trash cans for indoor collection and a dumpster for outdoor collection. The *Gingergrass* staff is responsible for emptying the indoor containers into the outdoor dumpster. *Athens* picks up the dumpster 3 times per week. The City of Los Angeles subsidizes the program for 3 years – first year 70%, second year 40% and third year 10%. The subsidy is negotiable.

Not every food service business is a perfect candidate for the program. Obstacles include: 1) In some areas of the city, small scale hauling operations provide a very inexpensive disposal alternative. 2) The organic waste can be contaminated with glass, plastic and other non organic items, and sometimes the whole batch can be rejected by the composter. 3) The program works best for stand alone restaurants, but has not been very successful with restaurants in strip malls. The reason for this is that the landlord provides a dumpster for the center and there is no room for an additional food waste only dumpster. Additionally, there is higher risk of contamination. 4) If an additional dumpster is allowed, it is an additional expense for the restaurant operator. 5) Employee turnover in restaurants is high and training is challenging. 6) It is very difficult to get chain restaurants, with distant corporate offices, to subscribe.

ON SITE IN-VESSEL COMPOSTING

(Options 2-4)

These systems are designed for composting on site. Three examples of this are Thermophilic Composters, Vermicomposting and Biological Food Waste Digesters. *The California Integrated Waste Management Board (CIWMB)* at www.ciwmb.ca.gov provides a list of companies that manufacture the vessels. The company information offered below was collected from websites, email correspondence and phone conversations.

Option 2 – Thermophilic Composters replicate decomposition that occurs in nature by optimizing conditions for microbial growth (often at higher temperatures than found in nature) Because of legal definitions, the resulting compost product is classified as a soil amendment not a fertilizer.

<p>Biosystem Solutions 7 Ellery Lane Westport, CT 06880 www.BiosystemSolutions.com info@BiosystemSolutions.com (203) 557-0644 Phone (203) 227-4635 FAX</p>	<p><i>BioTowertm</i> – Processes up to 20 tons/day. <i>BioChambertm</i> – Processes over 800 tons/day.</p>
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<p>BW Organics 475 CR 2300 Sulphur Springs, TX 75482 (888) 293-0033 www.BWOrganics@neto.com</p>	<p>This company manufactures 7 models that range in capacity from 1 to 96 cubic yards. The price of the one cubic yard unit is \$14,900. The price of a 32 cubic yard unit is \$179,000.</p>
<p>Green Mountain Technologies P.O. Box 560 Whitingham, VT 05361 (802)368-7291 Phone (802) 368-7313 FAX www.GMT-Organic.com Sales@GMT-Organic.com</p>	<p><i>Earth Tub</i> – Processes up to 20 - 200lbs/day. The price of this unit is \$9,850, plus \$677 shipping to Southern California. <i>Earth Bin</i> – This has a modular design, and depending on the # of units, can process between 0.5 to 5 tons/day. A 15 cubic yard Earth Bin is \$48,500. Containerized Composting System – Processes between 1-100 tons/day.</p>

The California Grey Bears is a non profit organization in Santa Cruz County that collects and distributes surplus food to senior citizens and the disabled through their Operation Brown Bag. In the year 2000 they began using two Earth Tub composting units, and now use four. To keep the donations flowing, they often have to take food they don't want or need. As much as possible, the excess is funneled to other charities and to animal feeders. Each week approximately 2 tons of food is discarded into the Earth Tubs, primarily due to deterioration. Using the Earth Tubs, and a county food waste composting program, the Grey Bears divert approximately 200 tons from the landfill every year. Several factors contribute to the financial feasibility of the process: volunteer labor is available, and the compost is sold. The process takes about 2 to 4 weeks in the Earth Tub and another 30 days is required for the compost to cure in the open air.

Option 3 – Vermicomposting uses earthworms to break down food wastes and other organic material into nutrient rich compost that is harvested as worm castings.

<p>Biosystem Solutions 7 Ellery Lane Westport, CT 06880 www.BiosystemSolutions.com info@BiosystemSolutions.com</p>	<p><i>BioSafe</i>tm – Processes up to 20lbs/day. <i>BioLane</i>tm – Processes between 1-200 tons/day.</p>
<p>EPM Inc. P.O. Box 1295 Cottage Grove, OR 97424 (800) 779-1709 Phone (541) 767-2744 FAX www.WormWigwam.com www.CompostTea.com Sales@CompostTea.com</p>	<p><i>The Worm Wigwam</i> – Processes 20-30 lbs/day after 8 month initial start-up - \$560 +\$73 shipping. . Model 5-6 - Institutional Size Flow – Processes 75 to 100 lbs/day - \$6,200. Industrial Large Scale – Depending on the unit, processes 100 to 600 lbs/day. Prices range from \$5,907 to \$27,353.</p>

In an effort to reduce waste in an ecologically sound manner, *Santa Monica College* launched their vermicomposting project in November 2001. The composter was manufactured by *Vermitech, Inc.* a Canadian company that is no longer in business. The composter measures 19 feet long by 7 feet wide by 5 feet high and is located behind the student cafeteria (see www.SMC.edu/recycling/V-1.htm). The College uses a shredder to breakdown the cardboard and food scraps into smaller pieces before it goes into the vermicomposter in order to help the worms and speed the process. The worms process

approximately 3 tons annually of pre-consumer food waste. The worms are not noisy eaters, and after over 7 years, the College is happy with the system. The worm castings are used for College landscaping.

Option 4 – Biological Food Waste Digesters use specific mixes of microorganisms to break down solid materials.

<p>Advanced Biotechnology GOMIXER #2 East Lake Way P.O. Box 3637 Airdrie, Alberta, Canada T4B 2B8 (403) 912-7424 Phone (403) 948-4780 FAX Info@gomixer.com</p>	<p>This company has 10 different units with processing capacities ranging from 15 to 1,200 kilograms (33 - 2,645 lbs) per day. Prices range from \$22,935 for the smallest unit, \$181,170 for the 551 lb unit and \$436,720 for the largest unit.</p>
<p>BioHitech America 7 Pearl Court, Suite B Allendale, NJ 07401 (888) 876-9300 Phone www.BioHitech.com KDoscher@BioHitech.com</p>	<p>This company has four different units with capacities of 400 (\$30 – 32,000), 800 (\$38 - \$44,000), and 1200 lbs (\$42 - \$50,000) per day. They do have some customization capabilities. The company is currently researching ways to capture the nutrient rich effluent that goes down the drain.</p>

Albertsons grocery store in Fullerton, California has been testing the 1200 lb per day BioHitech model. Prior to going into the digester, *Albertsons* diverts as much food as possible to food rescue operations. BioHitech describes the machine as a high volume organic waste decomposition system. The stainless steel machine is located inside the store, behind the deli area. It measures approximately 6 feet long by 4 feet deep by 4 feet tall. Electricity to the machine is about \$240 year and maintenance is \$45 per month. The technician regenerates the microorganisms once a year, which is included in the maintenance fee. The effluent is directed to a floor drain.

Option 5 – Piggy Backing enables a food service establishment to discard waste into another establishment’s system. An example of this is provided by *Large Marge Sustainables* catering operated by Meg Dickler-Taylor. *Gingergrass Restaurant*, noted in Option 1, allows *Large Marge* to deposit organic waste into their dumpster that is picked up by *Athens Services*. Although this arrangement does not save *Large Marge* financially, it allows the caterer to participate in the food waste composting program and operate consistently with its mission of environmental sustainability.

Option 6 – Creative Solutions Beginning in 2007, on a weekly basis, Tara Kolla of Silverlake composted fresh, raw, organic vegetable scraps from her favorite restaurant. She also composted coffee grounds from *Starbucks*. She composts on her half acre home garden where she organically grows flowers, herbs and vegetables to sell at local farmers’ markets under the banner *Silver Lake Farms*.