

FINAL REPORT

FOOD WASTE DIVERSION IN FLORIDA

Center for Biomass Programs

and

Florida Organic Recyclers Association (FORA)

Submitted to

Florida Recycling Markets Advisory Committee (RMAC)

for the

**Department of Environmental Protection
State of Florida**

November 1998

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PROJECT OBJECTIVES

Food waste constitutes a significant portion of Florida's waste stream, but to date it has not been widely targeted as a recoverable material. This project represents a first step towards promoting increased food waste recovery. The Center for Biomass Programs at the University of Florida, Institute of Food and Agricultural Sciences (IFAS) and Florida Organic Recyclers Association (FORA) conducted an education and market development program for this project with the following objectives:

- Identify major food waste generators in Florida in order to provide a state-wide perspective on food waste generation and recovery;
- Develop and distribute educational brochures that describe available options for collecting, processing and marketing recovered food waste; and
- Develop one day food waste recycling workshops that will help reach and inform major generators of food waste.

INTRODUCTION

Florida is a very large generator of food wastes in comparison to other states. A growing population, thriving tourist trade, and sizable agriculture industry all contribute to the production of well over 1 million tons of food waste annually. This figure is modest because commercial and industrial generators are not required to report waste generation or disposal numbers. Food waste generation will continue to increase in the future as the state's population and tourist industry grow. With 14 million residents, Florida is the nation's fourth most populous state. Since 1950, Florida's population has increased by over 10 million people and it is continuing to grow. In addition, over 46 million tourists visit the state each year and that number is expanding. Florida supplies over 70 percent of the nation's grapefruit and oranges, and it ranks 2nd nationally in the production of vegetables -- resulting in considerable food processing residuals.

This report provides a state-wide perspective on food waste generation and recovery. An overview of major food waste generators such as food processors, grocery stores, and food service providers is provided in the first section. Information on residential food waste generation and recovery is not included because the primary method available for recycling is through centralized collection and composting. The second section contains an overview of management methods for food waste with particular emphasis on food donation programs, animal feed, and food residuals composting. The final section outlines educational strategies that can be used to help educate and promote food waste diversion. Appendices contain detailed information on Florida food processors, Class 1 landfills, and planning information for conducting educational workshops on food waste diversion.

Hopefully, this project will serve as the impetus for a series of future projects and educational outreach on food recycling options. Numerous contacts for government agencies, organizations and industry trade groups are mentioned throughout the body of the report and in reference sections.

FOOD WASTE GENERATORS IN THE STATE

This section provides an overview of different types of food waste generators. Residuals produced by generators include but not limited to large amounts of by-products from food processing plants, consumer food waste from grocery operations, and food preparation waste/plate scrapings from the food service industry.

Food Processing Industry

The food processing industry is a branch of manufacturing that starts with raw animal, vegetable, or marine materials and converts them into intermediate foodstuffs or edible products. Products are produced for the ingredients market, food service market, and consumer goods. The Standard Industry Code classification 20, Food and Kindred Products, includes 47 categories ranging from food and beverages for human consumption to prepared feeds for animals. Sizable quantities of by-products are created during the manufacturing of human and animal food. Some of the residuals are used for animal feed or are turned into value added products such as molasses and flavorings. Other by-products such as bagasse are burned for energy. While a portion of food wastes is diverted into other uses, significant quantities continue to be disposed of in landfills and sewage systems. Estimates of food waste quantities currently being sent to landfills are contained in Table 3.

The best way to ascertain food waste recycling opportunities for this sector is to conduct a detailed statewide survey of food processors. This type of study has successfully been done in Iowa, Nebraska and Kansas by university researchers in conjunction with state environmental agencies. Results from the surveys were used to characterize and quantify food processing residuals by geographic region. The data can be used to identify processors that might benefit from outside assistance in finding new diversion options for their residuals. Traditional diversion options include animal feed, land application and waste-to-energy. Other newer diversion options include composting and development of enterprises to utilize specific residuals for new products. Such a study was beyond the scope of this project, but could be a very worthwhile endeavor in the future. The Harris InfoSource Manufacturers Directory that was secured to identify food waste generators for this report would provide an excellent database to use for a survey of processors. The Directory also provides geographic coordinates that could be used for detailed mapping and data analysis.

The following information is intended to provide an overview of potential food waste recycling opportunities in the manufacturing sector. Data was gleaned from a variety of sources including food processor surveys from other states, 1997 Florida Agricultural Facts, contacts with state landfill managers, county recycling coordinators, and waste-to-energy managers, and the Harris InfoSource Manufacturers Directory.

Meat and Seafood Industries

According to the latest Harris InfoSource Manufacturers Directory, Florida has 67 industries that produce meat and seafood products. In 1996, approximately 175,000 swine, 1 million beef cattle, and 131 million broilers were marketed in Florida. About 143 million pounds of seafood were landed on Florida coasts. Florida ranks in the top 10

states for production of beef cattle and seafood. Concentrations of meat and seafood processing industries are located in Miami, Tampa, and Jacksonville. Large poultry processors are also located in Live Oak (1400 employees) and Madison (800 employees). Residues and wastes from meat and seafood include meat, meat scraps, slaughter processing wastes, offal, skins, tallow, bones, animal hair, blood, rendering waste, cattle switches, hides, animal fat and paunch. A review of agribusiness processing residues in three states -- Iowa, Kansas, and Nebraska -- showed that livestock processing is either the top or second largest sector producer of organic waste and residuals (based on generator survey). See Appendix 1-A for a detailed list of meat and seafood processors in Florida.

Dairy Industries

Florida has at least 30 firms that produce dairy products including milk, ice cream, and butter. Florida is the top dairy state in the Southeast with 156,000 cows producing 279 million gallons of milk (in 1996). Leading counties for milk production include Okeechobee, Gilchrist, Lafayette, Hardee, and Highlands. Residues and wastes from the dairy sector typically include dairy processing wastes, product out of spec, whey, milk sour, scrap cheese, non-dairy creamer/shortening powder wastes and suspended solids. Appendix 1-B lists dairy product producers in Florida.

Fruit and Vegetable Industries

Florida is the national leader in citrus production and as mentioned earlier, ranks 2nd nationally in vegetable production. The state produces 11.8 million tons of citrus and 3.3 million tons of vegetables and fruits. Over 95 percent of the state's orange crop is turned into orange juice, making Florida second in the world in juice production. Leading citrus producing counties include Polk, Hendry, St. Lucie, and Highlands.

The NAFTA trade agreement has had a negative impact on vegetable production, resulting in a small decrease in production and larger decline in value. (Mexican imports are capturing more of the U.S. winter market.) Major vegetable and fruit crops grown in the state include tomatoes, bell peppers, potatoes, strawberries, sweet corn, snap beans, watermelon, cucumbers, cabbage, squash, radishes, carrots, eggplant, escarole, and blueberries. Other vegetables and fruits include cantaloupes, cauliflower, celery, okra, green onions, leeks, parsley and various greens.

The latest Harris InfoSource Manufacturers Directory shows 87 Florida industries that manufacture fruit and vegetable products. By-products of Florida citrus juice production include 928,672 tons of pulp for animal feed, 27,295 tons of molasses, and more than 25 million pounds of citrus flavoring. Common wastes/residues from fruit and vegetable processing include peels, off-grade vegetables, off-grade fruits, excess foliage, stems, skins, husks, cobs, pomace, liquid wastes, vegetable fat and oil, and spice waste. Appendix 1-C lists fruit and vegetable processors in Florida.

Sugar, Candy and Chocolate Industries

Florida produces 13.8 million tons of sugarcane, just over half of all sugarcane production in the U.S. Leading counties for sugarcane production include Palm Beach,

Hendry, Glades, and Martin. The state has 16 firms that produce sugar related products. Over 3,300 employees work in three sugar related industries in the Clewiston area. Another 2,100 employees work for three firms in the Belle Glade area. South Bay is home to a sugar cane refining plant that employs 1,200 employees. The primary residual from sugar cane processing is bagasse. In Florida, most bagasse is burned as fuel for mills and power plants, but some is used to produce an industrial alcohol called furfural. Candy production typically yields syrup as a processing residual. Industries in this category are listed in Appendix 1-D.

Grain Industries and Bakeries

Florida is a relatively small producer of grain products. According to the 1997 Florida Agriculture Facts publication, farmers in the state grew 9.8 million bushels of grain corn, 380,000 bushels of wheat, and 1 million bushels of soybeans. The state has approximately 18 processors that make products from grains. The majority of those companies manufacture beer, malt beverages, and alcoholic beverages. Five firms produce pasta products and two small companies make flour. Typical residuals include brewery wastes, beer loss, flour wastes, milling scraps, wet corn, spent yeast, spoiled and spent grains, soybeans and soybeans out of spec. The breweries and other grain industries are listed in Appendix 1-E.

In addition to the above grain industries, Florida has 47 large bakeries that produce baked goods. Concentrations of bakeries are located in Lakeland, Miami, Orlando and Tampa. Production figures for baked goods in Florida are not readily available. Bakery wastes include crippled bread, yeast, waste dough, and product from flour. Florida bakeries are listed in Appendix 1-E.

Animal Feed Industries

According to the Harris InfoSource Manufacturers Directory, Florida has 15 manufacturers that produce animal feed. With the exception of one firm that employs 100 workers, the remaining companies employ less than 60 workers. Figures on animal feed production are not readily available. An interesting note is that the 1997 Florida Agricultural Facts Book reports that Florida ranks 6th nationally in exports of feed. Feed exported in 1996 had a value of more than \$82.7 million dollars. Typical residues from animal feed production include feed products out of specification, pet food wastes, spoiled feed, extruder waste and wet feed. Animal feed industries often use by-products and residuals from other food processing industries in the manufacture of animal feed. A listing of animal feed industries in Florida is found in Appendix 1-F.

Mixed Food Industries

The mixed food category is a "catch-all" category in the SIC code classification system. Processors listed under this code tend to manufacture products representing a small, specialized industry sector or conversely, they might produce a wide range of products that do not neatly fit into one SIC code. Examples of Florida companies in this category include firms that produce coffee products, drink bases and flavorings, food seasonings, ethnic foods, snack foods, and meals for airlines, senior citizens and daycare facilities. There are 62 firms listed under mixed foods. Concentrations of mixed food firms are

located in Jacksonville, Lakeland, Miami, and Tampa. Residuals from these processors vary widely. The companies are listed in Appendix 1-G.

Supermarkets

Supermarkets are another large source of food residuals in Florida. Typical supermarket food waste includes vegetable trimmings, excess foilage, off-grade fruits and vegetables, and meat trimmings. A deli, salad bar, and/or bakery on the premises will increase the amount of food residuals. Studies in different areas of the country (Northwest Economic Associates, 1991, U.S. Composting Council, 1997) show that the quantity of food waste generated per supermarket employee per year is approximately 3.0 tons. Of that amount, slightly less than half is comprised of produce.

Supermarket locations often determine how food wastes are utilized. Stores located near agricultural areas may divert their produce to small-scale hog or cattle farmers. In the future, another option for supermarkets may be to send their materials to off-site composting facilities that would compost produce and cardboard alone or with yard wastes and other organics. Supermarkets located in dense urban areas are likely to put food wastes into garbage disposals (and sewer lines) or dumpsters/compactors. Urban stores are less inclined to send their produce and other organic wastes to farmers because they are not located close enough to make pick-up a feasible option. Higher property values and smaller sites may prevent urban stores from having enough space to store wastes until it can be collected. In addition, produce managers are hesitant to store food waste because of the risk of odors and possible health hazards.

One potential option for urban grocery stores is the use of small on-site in-vessel composting systems with biofilters to control odors. Some of the newer in-vessel systems utilize about as much room as a compactor. Small in-vessel composting systems are a relatively new industry development and are being installed in various locations around the U.S. and Canada. Several resources are available for supermarkets interested in exploring the feasibility of either on-site or off-site composting. In particular, the Food Marketing Institute (FMI) conducted research on supermarket composting and prepared a how-to guide and video targeted specifically towards supermarkets.

Another option that is becoming more popular with supermarkets is to donate residuals to food banks and food rescue organizations. Food banks typically take non-perishable items while food rescue programs collect prepared and perishable foods such as produce and deli foods.

The task of disseminating information to Florida supermarkets and other food stores about food waste diversion options could be challenging. Florida used to have a statewide trade association for supermarkets, but the association went defunct approximately three years ago. According to 1995 County Business Pattern data (most recent available), the state has about 9789 food stores with 208,454 employees. Using the 3.0 tons per employee per year figure described above, a ballpark estimate of food waste generated by supermarkets and other food stores statewide is 625,362 tons annually. One method for providing information to supermarkets about food waste

diversion options is to contact grocery wholesalers and supermarket chain headquarters. They may be willing to disseminate information through newsletters, mailings, meetings and trade shows. A partial listing of chain headquarters and Florida grocery wholesalers is provided in Table 1.

Table 1. Florida Supermarket Chains and Grocery Wholesalers (partial listing)

Business Name	Address	Phone Number
Affiliated of Florida	1102 N. 28 th St., Tampa, FL 33605	813-248-5781
Associated Grocers of Florida	7000 NW 32 nd Ave, Miami, FL 33147	305-696-0080
The Eli Witt Company	8305 SE 58 th Ave., Ocala, FL 34472	904-245-5151
Fleming Companies, Inc.	6301 Waterford Blvd., Oklahoma City, OK 73118	405-840-7200, Miami - 305-591-8970
Grocers Supply Co.	4150 W. Blount St., Pensacola, FL 32505	850-438-9651
IGA	8725 W. Higgins Road Chicago, IL 60631	773-693-4520
The Kroger Co. (owns Jr. Food and Tom Thumb stores)	1014 Vine St., Cincinnati, OH 45202	513-762-4000
Malone & Hyde/Fleming	3400 NW 7 th St., Miami, FL 33152	305-591-8970
Molinera-Siman	11701 NW 100 th Rod, Bay #2, Miami, FL 33178	305-883-6060
Mutual Trading Co., Inc.	431 Crocker St., Los Angeles, CA 90013	213-626-9458
Piggly Wiggly	1991 Corporate Ave., Memphis, TN 38132	901-395-8215
Publix Supermarkets, Inc.	2515 S. Florida Ave., Lakeland, FL	941-688-1188
Purity Wholesale Grocers	5400 Broken Sound Blvd. NW, Boca Raton, FL	561-994-9360
Winn-Dixie	5050 Edgewood Court, Jacksonville, FL 32254	904-783-5000

Sources: Food Marketing Institute, phone contacts with wholesalers, and web searches

Food Service Industry

The food service industry includes a variety of private and public facilities such as restaurants, amusement parks, cruise ships, educational facilities, hospitals, nursing and personal care facilities, prisons, and military installations. Residuals generated by the food service industry consist of food preparation waste (trimmings, produce stems and leaves, off-grade produce, cooking oil and grease); post-consumer waste (plate scrapings); and surplus foods (prepared foods that cannot be sold or given to customers or

clients). Some food service generators such as amusement parks and schools are diverting their food waste to cattle and hog farmers. A growing number of restaurants, educational institutions and corporate cafeterias in urban areas are diverting their surplus foods to food rescue organizations. In Florida, there are seven food rescue programs (listed in Table 5). Other traditional options being utilized by food service facilities include landfills and garbage disposal/sewer systems. Estimates of food waste being sent to landfills are contained in Table 3. An option that may become more popular in the future is food waste composting -- both on-site and off-site. At least three composting pilot projects with source separated food waste were conducted in Florida during the past five years. Nationally, there are over 200 facilities composting food residuals. Currently, there are two facilities that compost source separated food waste -- in Miami (restaurant) and Homestead (prison). Plans for additional food waste composting facilities are underway in Tampa (restaurant), Orlando (amusement park), and at Eglin Air Force base.

Food waste generation rates vary according to the activities conducted by the facilities. A variety of studies show the amount of food waste generated per employee per day to range from 0.4 pound. to 7.5 pounds based on the type of facility. Table 2 provides very rough estimates of food waste generation rates and possible annual quantities for different types of facilities. These numbers should be used primarily for comparison purposes between sectors and for targeting particular types of food waste generators.

A variety of strategies are needed to disseminate information on diversion options to food service facilities. As Table 2 shows, there are over 21,000 food service facilities in the state. Mailing lists for direct mailings to the facilities are expensive and time consuming to procure. It is likely to be more effective and economical to work through trade organizations and government agencies for information dissemination. They may be willing to help spread information through their newsletters, mailings, meetings and trade shows. General information and contacts are listed below for each of the food service sectors.

Amusement Parks - Florida is renowned for its numerous tourist attractions in the state. The state's number one industry is tourism -- it had a \$41 billion economic impact in 1997, an 8.2% increase from 1996 (\$38 billion). In 1997, a record 46.95 million tourists visited the state, a 4.9% percent increase from 1996 (43 million). Three years ago, the state formed a public/private partnership, the Florida Tourism Industry Marketing Corporation, to market tourism in the state. This organization is also known as VISIT FLORIDA. The organization works with tourist destinations as well as potential visitors. The web site for VISIT FLORIDA is: <http://www.flausa.com/About.html>. The phone number for VISIT FLORIDA is 850-488-5607. Another web site that contains listings for 68 tourist attractions along with contact information is <http://florida.com/attraction1.htm>.

Table 2. Food Service Sectors and Estimated Food Waste Generation

Type of Facility	No. in State	No. of Employees*	Estimated Lbs/ Employee/ Day	Est. Total Food Waste Generated/Yr. (tons)
Amusement parks	79	28,880	5.0	26,353
Cruise ships	27	8902	5.0	8,123
Hospitals	346	250,275	2.0	91,350
Military installations	15	Not available	0.4 - 0.6 ¹	Not available
Nursing homes	937	82,342	4.0	60,110
Prisons	60	26,712	2.5 ¹	12,187
Restaurants	16,807	389,116	4.5 - 7.5 ¹ 6.0 ave.	426,082
Schools, public K-12	2900	129,229	1.55 ¹	36,556
Universities and colleges	153	29,993	1.55 - 7.0 ¹ 4.3 ave.	23,537

*The number of facilities and employees are taken from 1995 U.S. Census County Business Pattern data with the exception of military bases, prisons and schools. Data on public schools is from the Florida Department of Education. Data on prisons is from the Florida Department of Corrections. Information on military installations is from an Armed Forces telephone directory.

Cruise Ships - The Florida Ports Council maintains a web site (<http://www.flaports.org/>) with links to each of the state's 14 seaports. Each port lists the cruise lines that operate at their location. Most of the cruise lines have individual links from the port web sites. In 1995, 5.3 million passengers embarked and disembarked for multi-day cruises from state seaports. This is an increase of more than 30 percent during the last five years. In addition, an annual average of 2 million passengers embarked and disembarked for one-day cruises. The busiest cruise ports are Miami and Canaveral. By the year 2002, both ports are expected to accommodate over 4.2 million passengers each. Cruise lines operating from Florida ports include Royal Caribbean, Cunard, Carnival Cruise Lines, Norwegian Cruise Line, Cape Canaveral Cruise Lines, Disney Cruise Lines, Premier Cruises, Sterling Casino Lines, SunCruz Casino, and Topaz International Shipping.

¹ Estimated pounds per employee per day number is based on measured data

Hospitals - The Florida Hospital Association (FHA) is based in Orlando and has over 2500 health care professionals in affiliated professional membership groups. They provide educational programs, an annual conference and newsletters. An alphabetical listing of state hospitals and locations is provided on their web site - <http://www.fha.org/locations.html>. Many of the hospitals listed on the site have their web sites and are linked from the page. The Association is located at 307 Park Lake, P.O. Box 531107, Orlando, FL 32853-1107. The phone number for the Association is 407-841-6230.

Military Installations - Fifteen military installations are located in Florida. Bases include Cape Canaveral, Eglin AFB, Homestead CP, Hurlburt Field, NAS Key West, MacDill AFB, NAS Jacksonville, NAS Mayport, Whiting Field, Naval Training Center Orlando, NAS Pensacola, Naval Coast Systems Lab Panama City, Patrick AFB, and Tyndall AFB. Contact information is available from Armed Forces personnel.

Nursing Homes - The Florida Health Care Association (FHCA) is located in Tallahassee. FHCA has approximately 1100 members representing over 700 facilities. The Association offers workshops, an annual conference, a newsletter and numerous other services. Their web site is located at <http://www.fhca.org/>. A link from the web site connects the user to the Florida Guide to Nursing Homes, a comprehensive directory of nursing homes in the state - <http://www.state.fl.us/fdhc/hdata/nurse/index.html>. FHCA is located at PO Box 1459, Tallahassee, FL 32302, phone 850-224-3907.

Prisons - The Department of Corrections has a Physical Plant Manager, James McCloud, that is oversees all 60 facilities in the state. He is currently investigating the feasibility of establishing on-site composting programs at one or more state prisons. Mr. McCloud can be reached at 850-922-3945.

Restaurants - The Florida Restaurant Association is based in Tallahassee and represents over 10,000 members including chain restaurants. The association has a semi-monthly magazine, web site, and annual Expo that is attended by 22,000 people. They also have different chapters around the state that hold periodic training seminars. A contact person for the association is Dan Murphy, Director of Marketing and Corporate Relations, 850-224-2250. Their web site address is <http://www.flra.com/>

Schools, Universities and Colleges - The Florida Department of Education maintains a web site that provides links to listings of public school districts, public universities, public community colleges, and independent colleges and universities. The web site is located at <http://www.firn.edu/doe/menu/ednfla.htm>. Another Department of Education link provides information on education-related associations and organizations. This link can be found at <http://www.firn.edu/fecn/organizations.html>. As a note of interest, Florida has the fourth largest public school system in the nation with more than 2900 schools and over 2.1 million students in grades K-12.

MANAGEMENT OPTIONS FOR FOOD WASTE

Food banks and many government agencies are increasingly promoting a strategy for managing food waste that parallels the broader, more comprehensive waste management strategy adopted by the Environmental Protection Agency (EPA) and many states.

Strategies identified for managing food residuals in order of preference are:

- Reduction in the amount of waste from cultivation, production, processing, transportation, distribution, marketing and serving of food.
- Donation of high-quality foods to food banks and food rescue networks
- Use of food by-products as animal feed/rendering
- Source separated composting or land application of food waste
- Mixed waste composting or waste-to-energy facilities
- Landfilling

Sewage disposal of food wastes is not included in the hierarchy, but from an environmental standpoint, is less desirable than managing food waste through reduction and reuse.

Brief descriptions of several management options for food residuals are provided below (not in the order of preference). This project focused on the strategies of food banks and food rescue programs, animal feed and composting. More detailed information is provided for those three options.

Landfills

Landfills are typically one of the primary methods used to dispose of food waste. Florida has 101 landfills, of which 65 are lined, Class 1 landfills. According to the 1998 Solid Waste Management Report for Florida, tipping fees for Class 1 landfills vary widely throughout Florida. The fees range from \$23/ton to \$92/ton with the statewide average being \$42.36 per ton. As mentioned earlier, a report from the Florida Department of Environmental Protection indicated that over 1.2 million tons of food waste was collected for disposal in 1997. An informal survey was conducted as part of this project in order to obtain a better understanding of how food waste is currently managed -- who some of the large food waste generators are, and quantities and types of food waste being disposed of. Several members of the Food Waste Diversion project committee undertook a phone survey of landfill operators, county recycling coordinators, and waste-to-energy operators to acquire this information. The information they obtained is summarized in Table 3. Included in the table is a breakdown by county of: total MSW generated, percent of food waste, tonnage of food waste, generators by business name or industry type, disposal and/or recycling practice, and type of food waste currently being disposed of in landfills. Appendices 2-A and 2-B contain a listing of Class 1 landfills in Florida and a map showing the locations of the landfills.

Survey results showed a number of interesting trends. According to most of the landfills polled, the majority of incoming food waste appears to be comprised of residential and restaurant food waste. Survey results also indicate regional trends in food waste management. For example, many generators in the northern part of the state divert post-consumer and surplus food for animal feed. In the southern part of the state, majority of

food waste is being sent to waste-to-energy plants and municipal solid waste composting facilities. In densely populated areas of the state, out-of-date or surplus portions of food are donated to food banks or food rescue programs. In addition, some large generators are using a variety of management methods for their food waste. Some is donated to food bank and food rescue programs with the remainder going to hog and cattle farmers.

A number of the survey respondents commented that there could be changes in the amount of food waste going to animal feed. Some counties in northern Florida reported that a rapidly changing hog market is resulting in hog farmers canceling agreements and contracts to collect food waste.

Another finding of the survey was that respondents were unable to easily identify large food waste generators bringing material into the landfills. Food waste in many cases is mixed with other materials. Many times, a waste hauler will bring in loads that contain waste from many sources. It should be noted that some privately operated landfills in the state were not included in this survey. Some counties are in the process of updating waste composition studies that could prove helpful at a later date.

Waste-to-Energy

Florida has more waste-to-energy (WTE) capacity than any other state in the country. The state has 13 WTE plants in 11 counties with a capacity of almost 19,000 tons per day. The average tipping fee for these facilities is \$57/ton. In the counties with WTE facilities, much of the food waste is combusted. Exceptions are where generators have convenient access to more economical diversion options such as food banks, food rescue programs and farmers that utilize residuals for animal feed.

On-Site and Off-Site Sewage Disposal

A number of food waste generators use grinders and garbage disposals to manage their residuals. The material is combined with water and sent down sewage systems. Although the wastewater produced is generally organic and non-hazardous in nature, large quantities can sometimes pose problems depending on the receiving stream. Florida has 3100 domestic wastewater treatment facilities and 2030 permitted industrial wastewater treatment facilities. Approximately 74% of the state's population is served by central sewer systems and treatment facilities.

Many discharges contain certain quantities of pollutants. Pollutants of concern to wastewater facilities include BOD, COD, TSS, FOG, Nitrogenous compounds, pH, and pathogenic background. A brief description of the pollutants is provided below:

- BOD: Biochemical oxygen demand – the oxygen used in meeting the metabolic needs of aerobic microorganisms in water rich in organic matter (as water polluted with sewage) – also called biological oxygen demand.
- COD: measure of the oxygen demand equivalent of the portion of matter that is susceptible to oxidation by a strong oxidant.
- TSS: solids that float on the surface or are in suspension
- FOG: fat, oil and grease including free and emulsified
- Nitrogenous compounds: ammonia, nitrite, nitrate, organic nitrogen.

Wastewater generators are typically permitted to discharge up to a certain concentration of pollutant. Industrial or large generators are often charged according to a formula based on the mass of the discharge -- consisting of flow and concentration. The mass of pollutants acceptable for discharge varies significantly depending on where the discharge is going and what the pollutant is. Some treatment facilities have discharge limits that cannot be exceeded without violation. Other treatment plants allow discharges to exceed certain limits, but impose surcharges. Fee structures vary by location and pollutant.

Depending on the local sewage rates, some food waste generators may consider changing to other diversion options such as food rescue programs and composting if they are more economical. Restaurants and cafeterias in other areas of the country have found that grinders do an excellent job of preparing food residuals for composting and vermicomposting.

Land Application

The Agriculture Subsection of the Florida Department of Environmental Protection (DEP) regulates land application of industrial wastewater sludge and other residuals. According to a staff member of the Agriculture Subsection, a large number of Florida food processors land apply at least part of their residuals. Permitting is done at a district level on a company-by-company basis. Aggregate figures for materials and quantities of residuals are not readily available. The quantity of food waste residuals land applied in Florida by the food processing industry may be significant. A recent survey of food waste processors in Iowa showed that the number one practice for managing residuals managed was land application (Flores, 1998).

Rendering

The rendering industry has changed considerably in recent years. A few large firms now handle most of the rendering activity in the state. The rendering companies collect meat trimmings, bones, blood and other animal by-products from slaughterhouses and grocery stores. They also collect cooking grease and oils from restaurants. In the past, all materials were picked up at no charge. Renders now charge fees for picking up certain types of animal by-products, depending on the quality and quantity of material. The fees were instituted in part because of the decline in market prices for oil and meal products. One rendering company, Griffin Industries, has added a new service for bakeries. They collect cookie meal from numerous bakeries around the state. Cookie meal consists of dough, off-spec crackers and cookies and other similar bakery by-products. The animal and bakery residuals are used to produce products such as livestock feed, fat, meat and bone meal, blood meal, feather meal, poultry by-product meal and dried bakery product. Much of these meals are used for animal feed. The rendering industry experienced revenue losses a few years ago when the "mad cow" scare occurred. They are now banned from selling meat and bone meal for cattle feed. Meat and bone meal is now used for poultry and swine feed, and in the production of pet food. Rendering companies are listed under Meat and Seafood Industries and Animal Feed in Appendices 1-A and 1-F.

Animal Feed

Food residuals are fed to animals in a variety of forms. The residuals can be fed directly to livestock with minimal processing or they can be processed, stabilized and shipped to various locations. Food that has not been in contact with or does not contain meat or meat by-products is exempt from federal regulation and can be fed to cattle and swine with no processing. Numerous cattle and swine operations in Florida are currently feeding food waste to their livestock.

Generators of food wastes that include meat and meat by-products can also divert their food wastes for feed to swine and cattle. Cattle can be fed food that is safe for human consumption. Owners of swine have more stringent requirements for utilizing food residuals with meat or meat by-products. They need to make diversion arrangements with licensed food waste feeders (garbage feeders). Florida is one of about 35 states that allow food waste feeding to swine. The state has adopted regulations set forth in the **1980 Federal Swine Health Protection Act**. Under these regulations, food waste with meat and meat by-products must be cooked at 212 degrees Fahrenheit for at least 30 minutes before being used as swine food. There are over 200 licensed food waste feeders in Florida with permits that must be renewed annually. Field inspectors conduct monthly inspections of facilities where animal food is produced from food waste to ensure that the cookers reach required process temperatures. Recent declines in market prices for swine may reduce the number of food waste feeders considerably. This year, prices for swine are the lowest in decades and many farmers are getting out of the business of swine production.

Despite the probable drop in the number of food waste feeders, there will continue to be some demand for inexpensive sources of food waste for livestock feeding. Many food waste feeders have not charged a fee for accepting food wastes in the past, but they may in the future to help cover their costs. The fee is likely to be considerably less than customary trash disposal costs. The option of diverting food waste for animal feed works well for medium to small size generators such as prisons, restaurants and grocery stores.

Emerging technologies may allow large generators such as amusement parks, military bases and institutions to recycle their food for animal feed in the near future. A number of companies are developing systems to flash heat, pelletize and dehydrate food waste. The pelletized feed can then be more easily stored and transported as well as marketed for sale. One such firm, NutraCycle Inc., is planning to open in the Orlando area in January 1999. Another technology is ensiling. Food waste is mixed with another material, such as gin trash, to help lower the moisture content. The resulting mixture is then placed into air-tight silos where it ferments and becomes preserved. The resulting silage is a good cattle feed.

Generators may have to expend some effort in locating farmers that are interested in using food waste for animal feed. Currently there are no listings or organized networks of farmers seeking food wastes. The local County Extension Offices or county recycling coordinators may be able to provide assistance in locating farmers. Another source of

information on licensed food waste feeders is the State Veterinarian's Office at 850-488-6874.

Food Banks and Food Rescue Organizations

Charitable food banks and food rescue programs are becoming an increasingly popular option for managing food residuals. Millions of pounds of donated products are being distributed to people living in poverty and those unexpectedly affected by natural disasters. Each year, food banks and rescue programs across the United States provide assistance to more than 26 million hungry Americans, including eight million children and four million seniors. Food banks and rescue programs work in cooperation with food pantries, soup kitchens, women's shelters, and other local organizations.

Food banks assist businesses by serving as a distribution channel for surplus inventories. They can handle dry, refrigerated and frozen food items, mislabeled and unlabeled products, obsolete promotional items and bulk or damaged products. Food rescue organizations typically collect unserved prepared food and produce. To help eliminate transportation charges, many food banks and rescue programs pick up donations free of charge. Donating to food banks and food rescue programs may also provide substantial tax benefits for companies.

Florida has active networks of both food banks and food rescue programs. Seven state food banks are affiliated with the national Second Harvest charitable hunger organization. Seven food rescue programs are affiliated with the Food Chain national food rescue network -- including four Second Harvest food banks. Many food banks associated with Second Harvest are offering a number of innovative programs to attract donors. The Harvest Scan program is a bar code scanning method that taps into the reclamation industry. Dented cans, damaged boxes, or otherwise unsaleable grocery products are individually inspected and scanned. The data is reported back to manufacturers to enable a comprehensive analysis of what products are being reclaimed as well as what products are being salvaged by food banks. Another innovative program offered by Second Harvest is Value-Added Processing (VAP). Value is added to bulk donations by converting raw commodities into finished products, processing products to enhance shelf life, or repackaging it into consumer-sized packages. For example, fresh vegetables can be processed into canned goods, juices or sauces. Bulk rice can be packaged into consumer-sized packages. The finished products offer enhanced shelf life for food banks, are easier to handle by charitable feeding programs, and are more useful to hungry people.

Reputable food banks and rescue programs offer donors a number of liability protections such as strict warehouse operation standards, proper storage and handling procedures, complete product tracking, recall capabilities, and accurate receipting. Since donations are made to help needy people, potential liability issues are covered under Good Samaritan laws. The federal **Bill Emerson Good Samaritan Food Donation Act** was passed in 1996 to standardize donor liability exposure and to make it easier for companies to donate. In addition, Florida passed its own version of a Good Samaritan law in 1998 that is contained in Florida Statute 570.0725.

Notable donors to food banks and rescue programs are numerous and include companies such as Dole, Chiquita, Burger King, Taco Bell, Tropicana, Publix Super Markets, Kellogg's, Nabisco, Kraft, Pizza Hut, Hardees, KFC, Marriott, Sheraton, Disneyland, Holiday Inn, Hilton and Tyson. Contact information for the food banks and rescue programs is listed below. Contacts are also listed for the Second Harvest and Food Chain organizations and the USDA Gleaning and Food Recovery web site.

Table 4. Second Harvest Food Banks

Fort Myers - Harry Chapin Food Bank of Southwest Florida @ 941-334-7007.

Jacksonville - Second Harvest Food Bank of Northeast Florida @ 904-353-3663

Miami - Daily Bread Food Bank @ 305-633-9861

Orlando - Second Harvest Food Bank of Central Florida @ 407-295-1066

Sarasota - All Faith's Food Bank @ 941-379-6333

Tallahassee - Second Harvest Food Bank of the Big Bend @ 904-562-3033

Tampa - Divine Providence Food Bank @ 813-254-1190

Second Harvest, Marketing Department, 116 South Michigan Ave., Suite 4,
Chicago, IL 60603 @ 800-771-2303 E-Mail:

grocerydonations@secondharvest.org;

Web site: <http://www.secondharvest.org>

Table 5. Food Chain Food Rescue Network

Tampa Bay Harvest - Clearwater

Gainesville Harvest

First Coast Food Runners - Jacksonville

Extra Helpings - Miami

Shepherd's Cupboard - New Port Richey

Palm Beach Harvest - Palm Beach @ 561-640-4000

Second Helpings - Orlando

Second Helpings - Tallahassee

Food Chain, 921 Baltimore, Suite 300, Kansas City, MO 64105, E-Mail:

rescuefood@aol.com, Web site: <http://www.foodchain.org>

USDA Gleaning and Food Recovery web site: <http://www.usda.gov/fcs/glean.htm>

Composting

Composting is a management technology that is becoming increasingly popular in the U.S. and Canada. Many types of organics can be composted including the organic fraction of municipal solid waste, biosolids, and source separated materials such as food residuals and yard wastes. Florida is home to two facilities that compost municipal solid

waste, at least three sites that compost manure, and approximately 39 yard waste operations. In addition, there are three facilities that compost other source separated materials such as food waste. Two or three source separated composting facilities are in the planning stages in Florida.

Composting of food wastes alone or with other source separated organics is rapidly expanding. Between 1995 and 1998, the number of food waste composting projects grew nationally from 58 to over 250. Table 6. shows the types and numbers of the US facilities with food residual composting projects. This table is helpful for indicating the types of institutions most likely to initially consider food waste composting. A number of pilot projects have been conducted in the state, including one that used worms to compost the food scraps. Food waste composting can be more economical than landfilling and if done on-site, can provide the generator with a valuable soil amendment. In addition, the demand for high quality finished compost is increasing as nurserymen, farmers, and grounds maintenance personnel become acquainted with its numerous benefits.

Table 6. Location of the US Institutional Composting Projects - 1998

Location	Number of Full-Scale or Pilot Projects
Correctional facilities	58
Primary/secondary schools	19
Universities	17
Resorts/hotels	5
Camps/conference centers	3
Hospitals	2
Restaurants	2
Military	1

Source: BioCycle - August 1998. Note: This listing does not include relatively new composting projects in Homestead and Miami, Florida.

Composting, is essentially the process of natural decomposition accelerated through careful management of several key factors such as oxygen, water, nutrients, particle size, temperature and pH. Aerobic microorganisms such as bacteria and fungi do the lion's share of breaking down the raw materials. They need air to breathe, a moist environment, carbon and nitrogen for energy and protein synthesis, and temperatures and pH conditions that sustain growth and activity. Particle size is important because microorganisms work on the surfaces of organic materials. With optimal conditions, the bacteria and fungi colonize on the organic matter, metabolize it and release energy in the form of heat as a byproduct. Macro-organisms such as ants, worms, spiders, and beetles work in tandem with bacteria and fungi to break down the organic material into a soil amendment that can be used to enrich the soil and enhance plants.

Most food waste is high in nitrogen so it can be very useful for developing optimal composting recipes with a good balance of nitrogen and carbon. An increasing number of states are allowing vegetative food scraps to be composted with yard trimmings that

are typically high in carbon. While composting has been around for centuries, properly composting food scraps from commercial and institutional sectors is a fairly new practice. Because food waste can quickly putrefy, composting the material does require implementing a proven management technology. There are four broad classes of composting technologies - turned windrows, aerated static piles, in-vessel systems and vermicomposting.

Turned windrows are elongated piles that are agitated or turned on a regular basis with a front-end loader or windrow turner. Regular turning of the windrow helps to break down the material, increases the porosity of the pile and releases trapped heat, water vapor, gases, and odors. Windrows vary in size, but are generally 5-6 feet high, 10-12 feet wide and as long as is appropriate for the site. **Aerated static piles** are constructed essentially the same as windrows, but they are placed upon a network of pipes attached to blowers. The blowers are used to force air through the windrow piles. The piles may be wider and taller depending on the layout of the pipes. This method may be more expensive than turned windrows because of the added equipment and electricity, but it requires less land area. **In-vessel systems** take many different forms ranging from highly mechanical ones that produce compost in approximately 20 days to fairly simple containers that use forced air or mixing within the container to accelerate the process. In-vessel systems can provide excellent process control for composting food scraps that are difficult to handle. **Vermi-composting** utilizes redworms or African nightcrawlers to break down the food scraps. Worms are initially placed into bedding material such as moist paper, manure, or other bulking agents and food scraps are then added. Worms work their way through the bedding and food waste, digesting all that is set before them. As the worms digest the material, they excrete castings, a soil amendment rich in minerals and nutrients. The bedding material does not need to be turned and the organic material does not heat up as it does with conventional composting. After worms have worked their way through a section, the castings can be screened out.

Selection of a composting technology will depend on the space available, type and amount of food scraps generated, logistics of collection and economic feasibility. In some cases, generators of food scraps may be able to find a farmer, landscaper, or university willing to work with them or take their materials. Permitting of food waste composting facilities in Florida has been done on a case-by-case basis to date. State regulators are currently reviewing existing composting regulations to determine potential modifications that will encourage increased food waste composting. Facilities that compost only yard trimmings or manage less than 50 cubic yards of material on-site at any one time are exempt from permitting. Also exempt are yard trash facilities that produce no more than 50 cubic yards in one year where it is used on-site at any one time. Operators of existing or planned composting facilities considering the addition of food waste should start by contacting their district Department of Environmental Protection (DEP) regulator. A list of district contacts is provided below. They are also available on the DEP web site. Regulations governing the composting of solid waste are found in Chapter 62-709, Florida State Administrative Code. Contacts for additional information include County Extension Offices and the Florida Organic Recyclers Association (FORA).

Florida Organics Recyclers Association (FORA), 1015 U.S. Highway 301 S., Tampa, FL 33619

Northwest DEP District, Jack McNulty, PE, 160 Governmental Center, Pensacola, FL 32501-5794, 850-595-8360

Northeast DEP District, Mary Nogas, PE, Suite B200, 7825 Baymeadows Way, Jacksonville, FL 32256-7590, 904-448-4300

Central DEP District, Jim Bradner, PE, 3319 Maguire Blvd., Suite 232, Orlando, FL 32803-3767, 407-894-7555

Southwest DEP District, Bob Butera, PE, 3804 Coconut Palm Drive, Tampa, FL 33619, 813-744-6100, Ext. 451

South DEP District, Bill Krumbholz, Environmental Manager, 2295 Victoria Avenue Suite 364, Fort Myers, FL 33901-3881, 941-332-6975

Southeast DEP District, Lee Hoefert, PE, 400 N. Congress Ave., West Palm Beach, FL 33401, 561-681-6600

EDUCATIONAL STRATEGIES FOR REACHING GENERATORS

Education and awareness building are essential elements for promoting the recovery of food wastes. This project employed two educational strategies towards that end: the production of brochures about food waste diversion (attached to final report) and the development of a one-day workshop agenda on food waste diversion options. Preliminary planning information for organizing a workshop series is contained in Appendix 3. Additional educational strategies are outlined below.

Partner With Other Organizations

Organizations such as the Cooperative Extension Service charged with educational outreach are becoming increasingly aware of the value of partnering with existing organizations to reach large audiences. This strategy is particularly effective when trying to reach broad audiences such as food waste generators. A key concept is to first educate and work with county extension agents, landfill operators, county recycling coordinators, state regulators, and leaders of certain trade organizations and government agencies (e.g. school districts, university recycling coordinators). The first tier of informed people then go back to their particular constituents and help to educate them about food waste diversion options. Ideally, they will be able to use prepared educational tools such as brochures, publications, displays and videos. These initial participants could also help to promote and develop workshops, and presentations at trade shows/conferences for their clients. The first tier group will also have knowledge of existing resources and where to turn for further assistance. In a sense, this concept is a modified version of a train-the-trainer program.

A number of trade organizations and government agencies are listed in the sections **FOOD WASTE GENERATORS - Food Service Industry** and **MANAGEMENT OPTIONS FOR FOOD WASTE - Landfills, Food Banks and Food Rescue Organizations, and Composting**. A partial listing of additional environmental organizations to include as partners is below.

Table 7. Potential Partners in Food Waste Diversion Education

Organization	Contact
Florida Audubon Society	Winter Park, 407-539-5700
Florida League of Environmental Educators	Live Oak, 800-505-2060
Florida DEP Office of Environmental Education	Tallahassee, 850-488-9334
The Florida Center for Environmental Studies	Florida Atlantic University, Palm Beach Gardens, 407-691-8553
Recycle Florida Today	Tampa, 813-441-6425
Sierra Club, Florida Chapter	Jacksonville Beach, 904-299-9456

Outreach Using Distance Education

Distance education is a relatively new educational tool that can be used to reach large audiences over a wide geographical area simultaneously. An effective method for delivering distance education programs is interactive videoconferencing. Program

participants travel to classroom sites in nearby cities to attend the program -- typically at a university or state facility. There are currently 12 videoconferencing sites in the state that seat from 30 to 200 participants. Classrooms at these sites are specially designed to allow participants to interact with the instructor and participants from other sites. Compressed video technology allows attendees and instructors to see and hear each other. Videos, computer programs and slides can be easily incorporated into the programs.

A series of two or more videoconference programs about food waste diversion could be developed and presented to target audiences statewide. These sessions could include basic information and virtual tours of several successful food diversion projects. An initial series of programs could be organized for a broad "first tier" audience such as county extension agents, recycling coordinators, landfill operators, FORA members, state regulatory personnel, trade industry representatives, and environmental educators. At later dates, the same technology could be used to present programming to more specific audiences such as food processors, restaurants, schools, or grocery stores. More information on interactive videoconferencing is available from UF/IFAS Educational and Media Services, G005 McCarty Hall, PO Box 110190, Gainesville, FL.

Web Site

The use of Internet World Wide Web sites for locating information is growing at an exponential rate. Information on food waste diversion options in Florida could be posted on a web site maintained by UF/IFAS, Florida DEP, or FORA. Links could be made to the home page from numerous sources, including many of the government agencies and trade organizations referenced in this report. Sections from this publication could be used to initially develop the page e.g. food waste generators, management options, resources and references. The Florida Food Waste Diversion site could have links to web sites of national and state food banks and rescue programs, national and state composting associations, county extension offices, state and district regulatory offices, university resources, and more.

Educational Material Clearinghouse on Food Waste Diversion

Several individuals interviewed during the preparation of this report have instituted or are planning food donation and food residual composting programs. One frequent comment was that they are looking for educational materials that they can distribute to employees and participants in their diversion efforts.

A number of organizations have prepared brochures and informational packets that could be distributed to interested individuals. For example, USDA and EPA have published fact sheets on food donation programs and animal feed programs. Food banks and food-rescue networks have produced informative marketing brochures. The U.S. Composting Council, Cornell University and the Food Marketing Institute have written helpful guides and produced videos on commercial food waste composting. These resources and many of the materials listed in the following reference sections could form the basis for an educational material clearinghouse that interested individuals could tap into as they learn more about food waste diversion options.

REFERENCES

Butler, Robert, and Gerald Nolte, "Farmsite Composting of Grocery Store Wastes, Final Report", Univ. of Wisconsin-River Falls, University of Wisconsin System Solid Waste Research Program, Madison, WI 1997.

Cornell Waste Management Institute, Compost... Because a Rind is a Terrible Thing to Waste, Cornell University, Ithaca, NY, 1996

Florida Agricultural Statistics Service, 1997 Florida Agricultural Facts Book, PL 10 The Capitol, Tallahassee, FL 1997

Food Marketing Institute, "Composting Workbook: Reducing Waste Disposal Costs - How to Evaluate the Benefits of Composting in the Supermarket Industry", Washington D.C., 1994

Foodstrategy, "Organic Waste Product Generated By Nebraska Food Manufacturers", Institute of Agriculture and Natural Resources, University of Nebraska-Lincoln, Lincoln, NE, 1996

Flores, Rolando A. and Carol W. Shanklin, "What's Needed To Use More Agribusiness Residues?", BioCycle, December 1998, pgs. 82-83

Flores, Rolando A. and Carol W. Shanklin, "State of Iowa Food Wastes Database Development, Final Report", Waste Management Assistance Division, Iowa Department of Natural Resources, Des Moines, IA, 1998

Goldstein, Nora, Jim Glenn, and Kevin Gray, "Nationwide Overview of Food Residuals Composting", BioCycle, August 1998, pgs. 50-60

Liebl, David and Chris Hayes, "Pollution Prevention Tools & Techniques for Food Products Manufacturing: Module", University of Wisconsin-Extension, Solid and Hazardous Waste Education Center, IMAC, Madison, WI, 1998

National Audubon Society et al, "Minnesota Source-Separated Composting Project - Final Report", National Audubon Society, New York, NY 1996

Nelson, Richard and Rolando Flores, "Compilation of Results Concerning The Kansas Agribusiness Processing Residues Survey: Final Report", Western Regional BIOMASS Energy Program, published by Kansas State University, Manhattan, KS, 1993

Northwest Economic Associates, "Washington Compost Market Assessment, Final Report", Washington Department of Trade and Economic Development, Seattle, WA, 1990.

Rosinski, Aaron, "A Feasibility Study For Expanding An On-Campus Compost Program To Include Post-Consumer Food Waste", University of Wisconsin-Stevens Point, University of Wisconsin System Solid Waste Research Program, 1997

U.S. Composting Council, "A Guide to Commercial Food Composting", Bethesda, Maryland, 1997

ADDITIONAL RESOURCES

Brinen, Gary and Roger Nordstedt, "Co-Composting of Landscape and Vegetable Wastes At Institutions With Food Service Facilities", Horticulture-Garden & Landscape Soc./Proc. 106, 1993 Paper 28

Block, Dave and Molly Farrell, "Variety Is Spice of On-Site Composting", BioCycle, April 1998, pgs. 84-88

Environmental Protection Agency, "Donating Surplus Food to the Needy - Fact Sheet", EPA530-F-96-038, U.S. EPA WasteWise, 1996

Environmental Protection Agency, "Managing Food Scraps as Animal Feed - Fact Sheet", EPA530-F-96-037, U.S. EPA WasteWise, 1996

Farrell, Molly, "From Ice Cream to Nuts in Food Residuals Composting", BioCycle, October 1998, pgs. 43-47

Gies, Glenda, "Closed Loop Recycling System for Commercial Organics", BioCycle, December 1995, pgs. 42-43 (Information on thermophilic digesters used to recycle restaurant and supermarket food residuals into animal feed in New York and Canada.)

Glenn, Jim, "Adding Food Residuals to Yard Trimmings Composting", BioCycle, September 1998, pgs. 56-58

Goldstein, Nora, "Composting At County Correctional Facility", BioCycle, October 1997, pgs. 42-43.

Goldstein, Nora, "Gaining Insights Into Containerized Composting", BioCycle, April 1998, pgs. 80-83

Majercak, John, "Farming Out Food Waste", Resource Recycling, December 1998, pgs. 12-15

National Audubon Society et al, "Web Bag Composting Demonstration Project - Final Report", National Audubon Society, New York, NY 1993 (Report summarizes demonstration project in Greenwich & Fairfield, Connecticut.)

National Restaurant Association, "Food Donation: A Restaurateur's Guide - Handbook",
1-800-482-9122

United States Department of Agriculture, "Help Feed The Hungry - Fact Sheet", USDA
Food Recovery and Gleaning Initiative

Appendix 1-A

Company	# Emp.	Primary SIC	Product Description	Mail City	800 Number	Phone
Leavins Seafood Inc	30	2092	Oyster & clam processing	Apalachicola	800-765-8882	850-653-8823
Water Street Seafood Inc	30	2092	Fresh & frozen seafood	Apalachicola	800-831-4111	850-653-8902
Deep South Products/Egg Div	60	2015	Shell eggs	Bartow		941-533-2111
Berry Veal Corp	42	2011	Veal processing & packaging	Boynton Beach		561-736-1993
Central Packing Co Inc	110	2011	Beef slaughtering	Center Hill	800-749-9639	352-793-3671
PRIDE Enterprises	35	2015	Processed & packaged eggs	Chattahoochee		850-482-9046
Kitchens Of The Oceans Inc	350	2092	Shrimp processing: fresh & frozen	Deerfield Beach	800-327-0132	954-421-2192
Perdue Farms Inc	500	2015	Poultry slaughtering & processing	Defuniak Spgs		850-951-6100
Tampa Bay Fisheries Inc	250	2092	Frozen fish processing	Dover		813-752-8883
Beach Shrimp Packers Inc	30	2092	Wholesale & retail seafood packing & processing	Fort Myers Bch		941-463-5758
Blue Ribbon Meats Inc	120	2011	Meat processing & packaging; frozen meat products	Hialeah		305-867-7534
Henry's Hickory House Inc	60	2013	Bacon	Jacksonville	800-637-4555	904-354-6839
Sea-Est	125	2092	Frozen seafood	Jacksonville	800-252-5661	904-354-7939
Southern Belle Frozen Foods	140	2092	Seafood processing	Jacksonville		904-765-4487
Beaver Street Fisheries Inc	350	2092	Fresh & frozen seafoods	Jacksonville		904-354-5661
Tyson Foods Inc	700	2015	Poultry processing	Jacksonville	904-693-5600	
Hilandale Farms Of Canoe Crk	20	2015	Egg processing	Kenansville	800-393-0573	407-892-9849
Hilandale Farms Of FL	30	2015	Eggs & animal feed	Lake City		904-755-1870
Tampa Maid Foods	300	2092	Seafood processing	Lakeland		941-687-4411
Stokes Fish Co Inc	50	2092	Fresh catfish processing	Leesburg		352-787-4335
Suwannee Packing Co Inc	30	2013	Custom meat packing & curing: sausage, ham & bacon	Live Oak		904-362-1422
Gold Kist Poultry Inc	1400	2015	Poultry slaughtering & processing	Live Oak		904-362-2544
Dixie Packers Inc	800	2011	Lunch meal packaging	Madison		850-973-4101
Southeastern Sea Products Inc	20	2092	Clam, mussel, oyster processing & packaging	Melbourne	800-671-2526	407-259-1914
SeaSpeciatives Inc	20	2091	Fish processing	Miami		305-625-5112
Rosa Brothers Inc	27	2013	Meal processing & packing	Miami		305-324-1510
Dutch Packing Co Inc	33	2013	Sausage	Miami	800-723-9249	305-871-3640
Florida Transport Co	35	2077	Grease & tallow, meat & bone meal	Miami		305-592-6927
Miami Beef Co	50	2011	Portion control meat packing	Miami		305-621-3252
Kaye Brothers Inc	50	2013	Meal processing & packing	Miami		305-653-2880
Morrison Meat Packers	60	2013	Cooked & smoked hams	Miami	800-330-4267	305-836-4461
Sentinel Lubricants Corp	75	2992	Synthetic motor oils, grease & food-grade lubricants	Miami	800-842-6400	305-625-6400
Banner Beef Co Inc	90	2011	Meal processing & packing	Miami	800-447-0535	305-325-0420
Dial Foods Of FL	100	2015	Poultry processing	Miami		305-651-7408

Appendix 1-A (continued)

Florida Meat and Seafood Industries - 67 Records (Page 2)						
Company	Primary SIC	Product Description	Mail City	800 Number	Phone	
Florida Smoked Fish Co	110	Fish processing	Miami		305-625-5112	
High Top Products Corp	120	Ham processing & cold cut packaging	Miami		305-633-1646	
Sea Specialties	200	Smoked fish & pickled herring	Miami		954-625-5112	
Bauer Meat Co	50	Meat processing	Ocala	800-327-6564	352-622-3000	
Green, Don Poultry Inc	100	Poultry processing	Opa Locka	800-258-2537	305-687-0000	
Griffin Industries Inc	20	Animal fat rendering & processing	Orlando	800-762-4862	407-857-5474	
Lombardi's Seafood Inc	130	Fresh, frozen, canned & cured fish & seafood	Orlando	800-879-8411	407-859-1015	
Hi-Flavor Meats Inc	45	Meat processing & packing	Oviedo	800-336-3287	407-365-5661	
Best Packers	40	Meat packing	Palatka	800-771-9378	904-328-5127	
Thompson's Meat Supply Inc	20	Meat processing	Pensacola		850-944-0525	
Patti, Joe Seafood Co	34	Seafood processing & packaging	Pensacola		850-432-3315	
Lykes Meat Group	500	Meat packing	Plant City	800-237-4709	813-752-1102	
Ratfield Fisheries Inc	150	Crawfish, clams & frozen seafood processing	Port Saint Joe		850-229-8220	
Ratfield Fisheries Inc	170	Fish & seafood processing	Port Saint Joe		850-229-8229	
Hilandale Farms Inc	30	Egg processing	Quincy		850-856-5196	
PRIDE Enterprises	140	Beer, pork & poultry products	Railroad		904-431-2325	
Sunshine Farms Poultry Inc	120	Poultry processing	Riviera Beach	800-606-4501	561-881-4500	
Clayton's Crab Co Inc	55	Crab meat processing	Rockledge	800-344-4176	407-636-6673	
Monfort-Swift Co	25	Institutional meat processing & packing	Sanford	800-999-2564	407-323-1555	
Rich-United Corp	55	Meat processing	Sanford	800-662-3663	407-322-3663	
Pinellas Wholesale Meats Inc	20	Meat processing	St Petersburg		727-822-2701	
PRIDE Enterprises	80	Seafood, meat, dairy & egg products, wood & metal furniture, automobile tags, printed forms, optical goods, dentures, shoes & textile products	St Petersburg		727-572-1987	
Griffin Industries Inc	60	Tallow, bone meal & grease	Starke	800-782-7147	904-964-8083	
Chiefland Crab Co Inc	40	Fresh crab meat processing	Steinhatchee		352-493-4887	
Crofton & Sons Inc	20	Smoked meats	Tampa	800-878-7675	813-685-7745	
Triple T Meat Packers Co Inc	27	Meat packaging & processing	Tampa		813-621-6902	
Griffin Industries Inc	65	Animal fats, oil & tallow rendering	Tampa		813-626-1135	
Florida Sea Co	300	Seafood processing: breaded shrimp, scallops & oysters	Tampa	800-553-3954	813-242-0707	
Singleton Seafood Co	1000	Seafood processing	Tampa		813-241-1500	
Bush Brothers Provision Co	25	Meat packaging & processing	West Palm Beach		561-832-6666	
Liberty Packing	25	Meat processing	West Palm Beach		561-848-6644	
Florida Veal Processors Inc	20	Slaughtering, meat processing & packing	Wimauma		813-634-5545	
Zephyr Egg Co	20	Egg processing & poultry, cattle & hog feed	Zephyrhills	800-488-6543	813-782-1521	

Appendix 1-B

Florida Dairy Industries - 30 records						
Company	Primary SIC	Product Description	Mail City	800 Number	Phone	
Flavors From Florida Inc	2087	Ice cream, sherbert, & drink base flavoring	Bartow	800-888-0409	941-533-0408	
Ice Cream Club Inc	2024	Ice cream & frozen desserts	Boynton Beach		561-731-3331	
Good Humor-Breyers Ice Cream	2024	Ice cream bars & sandwiches	Clearwater		727-573-1591	
Publix Supermarkets Inc	2026	Milk & orange juice	Deerfield Beach		954-429-0122	
Carvel Ice Cream Bakery	2051	Cakes & ice cream novelties	Fort Lauderdale		954-351-7121	
Gustafson's Dairy Inc	2026	Milk	Green Cove Spgs	800-342-1092	904-284-3750	
Velda Farms	2026	Dairy products & ice cream	Jacksonville	800-480-0338	904-448-4660	
Ryan Foods Co	2026	Extended shelf life dairy products	Jacksonville	800-874-6765	904-354-8256	
Belgium Co	2021	Butter	Kissimmee	800-966-0177	407-348-0177	
Velda Farms Dairies Inc	2024	Dairy products & ice cream	Lakeland		941-686-4441	
Publix Supermarkets Inc	2051	Carbonated beverages, bakery & dairy products	Lakeland		941-688-1188	
Superbrand Dairy Products Inc	2026	Milk, juice & drinks	Miami		305-685-8079	
Mc Arthur Dairy Inc	2026	Milk & fruit drinks	Miami		305-795-7700	
Velda Farms Dairies Inc	2026	Fluid milk & ice cream	Miami	800-805-9390	305-651-3511	
Farm Stores	2026	Ice cream & dairy products	Miami		305-592-3100	
Bassett Brothers Inc	2026	Fluid milk	Monticello		850-997-5400	
Action Products Intl Inc	2034	Astronaut ice cream, freeze dried produce & action snacks	Ocala	800-772-2846	352-687-2202	
Lee, T G Foods Inc	2026	Milk, sour cream, yogurt, juice & fruit punch	Orange City		904-775-6700	
Galaxy Foods Co	2022	Cheese substitutes	Orlando	800-441-9419	407-855-5500	
Lee, T G Foods Inc	2026	Milk & ice cream	Orlando		407-894-4941	
Swiss Haven Dairy	2026	Milk	Paisley		352-669-2575	
Superbrand Dairy Products	2024	Milk, ice cream & juice drinks	Plant City		813-754-1847	
Mc Arthur Dairy Inc	2024	Ice cream	Plantation		954-846-1234	
Sandy Gully Dairy Inc	2026	Milk	Sebring		941-385-1803	
PRIDE Enterprises	2399	Seafood, meat, dairy & egg products, wood & metal furniture, automobile tags, printed forms, optical goods, dentures, shoes & textile products	St Petersburg		727-572-1987	
Velda Farms Dairies Inc	2026	Milk & juices	St Petersburg		727-526-9191	
Southeast Dairy Processors	2026	Milk	Tampa		813-621-3233	
Instantwhip	2026	Portion creamers, frozen desert mix, frozen yogurt & aerosol toppings	Tampa	800-633-1824	813-621-3067	
Rich Ice Cream Co	2024	Ice cream	West Palm Beach		561-833-7585	
Velda Farms Dairies Inc	2026	Milk	Winter Haven		941-293-4152	

Appendix 1-C

Company	Empl.	Primary SIC	Product Description	Mail City	800 Number	Phone
Peace River Citrus Products	140	2033	Citrus juice concentrate processing	Arcadia		941-494-0440
Florida Global Citrus Ltd	320	7389	Citrus fruits & by-products processing, packaging & bulk concentrate	Auburndale	800-735-8423	941-967-4431
Cutrales Citrus Juices U S A	400	2037	Frozen fruits & juices	Auburndale		941-965-5000
SunPure Ltd	160	2033	Fresh citrus fruit juices	Avon Park		941-453-2222
Hom/Ada Foods Inc	20	2038	Frozen dough processing	Bagdad		850-623-3845
Barrow Citrus Industries Inc	50	2033	Fresh & chilled orange & grapefruit sections	Barrow		941-533-4165
Orange-Co Of FL Inc	500	2037	Fresh & frozen juices & fruit drinks	Barrow		941-533-0551
Mixon Fruit Farms Inc	120	2033	Citrus fruit products	Bradenton		941-748-5829
Tropicana Products Inc	4000	2033	Orange juice, fruit juices & beverages	Bradenton	800-435-0744	941-747-4461
Citrus Service Inc	25	2087	Citrus fruit juice concentrates	Brooksville		407-656-3233
Good Humor-Breyers Ice Cream	300	2024	Ice cream bars & sandwiches	Clearwater		727-573-1591
Lakeridge Winery & Vineyards	25	2084	Wine	Clermont	800-768-9463	352-394-8627
Seavin Inc	28	2084	Wine	Clermont		352-394-8627
Southern Gardens Citrus	180	2033	Citrus processing	Clewiston		941-983-3030
Sullivan Groves Inc	20	2033	Fruit juices	Cocoa	800-672-6431	407-632-0550
Lykes Pasco Inc	1600	2033	Citrus products & beverages	Dade City	800-874-9061	352-567-5211
Holly Hill Fruit Products Co	230	2037	Frozen concentrated orange & grapefruit juice	Davenport		941-422-1131
Publix Supermarkets Inc	1200	2026	Milk & orange juice	Deerfield Beach		954-429-0122
Ardmore Farms	200	2033	Juice	Deland		904-734-4634
Davidson's Of Dundee	70	2064	Citrus candy, marmalade, jelly & butters	Dundee	800-654-0647	941-439-1698
Minute Maid Co	300	2037	Orange & fruit juice packaging	Dundee	800-237-0159	727-733-2121
Ore-Ida Foods Inc	300	2051	Bagels, frozen pizza & snacks	Fort Myers		941-694-3663
Treasure Coast Citrus	50	7389	Citrus fruit drink packaging	Fort Pierce		561-468-4900
Freshco Ltd	60	2033	Orange & grapefruit juice processing & bottling	Fort Pierce		561-595-0070
Orchid Island Juice Co	75	2033	Fresh squeezed orange, grapefruit & lemon-lime juices	Fort Pierce		561-465-1122
Indian River Foods Inc	300	2033	Orange & grapefruit concentrates	Fort Pierce		561-464-5770
Tropicana Products	350	2033	Citrus juices	Fort Pierce		561-465-2030
Cargill Citri-America Inc	250	2087	Bulk concentrates & by-products from oranges	Frostproof	941-635-2211	941-635-2211
Parman Kendall Corp	30	2087	Citrus juice, oil, concentrate & peel	Goulds		305-258-1628
Florida Select Citrus Inc	55	2037	Citrus juices	Groveland		352-429-2101
Gilco Fruits U S A Corp	115	2037	Citrus juice processing	Haines City		941-422-5062
Natural Fruit Corp	25	2037	Frozen fruit bars	Hialeah		305-887-7525
Urys/Frozen Div	25	2038	Frozen Cuban food	Hialeah		305-820-0306
Sun Groves Inc	100	7389	Juice packaging service	Holiday		727-938-5454
Holiday Foods Inc	120	2099	Fresh & frozen specialty snacks & hors d'oeuvres	Hollywood		954-921-7786
Silver Springs Citrus Inc	300	2033	Orange juice concentrate, not from concentrate, single strength & citrus by-products	Howey In Hills	800-940-2277	352-324-2101
VIA Tropical Fruits Inc	100	2037	Fruit juices	Indiantown		561-597-2126
Caulkins Indiantown	180	2037	Orange & grapefruit juice	Indiantown		561-597-3511

<---- Record Continued ---->

Appendix 1-C (continued)

Company		Empl.	Primary SIC	Product Description	Mail City	800 Number	Phone
Citrus Co							
Porton-Pac Inc	300	2035		Condiment packages	Jacksonville		904-781-9025
Berry Citrus Products Inc	300	2033		Citrus concentrates	Labelle		941-675-2769
Florida Distillers Co	110	2085		Liquor, distilled spirits, wine & vinegar	Lake Alfred		941-967-4481
Florida Distillers Co	280	2084		Citrus brandy & wine, cane alcohol, rum & vinegar	Lake Alfred		941-956-1116
Fair's, A D Foods	50	2033		Vegetable processing	Lake Helen	800-232-1297	904-738-7420
Chalet Suzanne Foods Inc	65	2032		Gourmet soups & sauces	Lake Wales	800-433-6011	941-676-6011
Citrusuco	150	2037		Orange juice processing	Lake Wales		941-696-1487
Citrus World Inc	875	2037		Orange & grapefruit juice	Lake Wales		941-676-1411
Juice Bowl Products Inc	150	2033		Juices & juice drinks	Lakeland	800-777-0211	941-665-5515
Florida Juice Inc	200	2033		Orange & grapefruit juice	Lakeland		941-686-1173
Energy Factors Inc	50	2032		Health food supplements & products	Largo	800-654-2347	727-544-8866
Citral Citrus Juices U S A	250	2086		Citrus juice products	Leesburg		352-728-7800
La Lechonera Products Inc	25	2033		Canned vegetables & marinating sauces	Miami		305-635-2303
Florida Bottling Inc	30	2033		Fruit juices & bottled water	Miami		305-324-5932
Sunaid Of FL	53	2035		Mustard, ketchup, jelly, salad dressing & relish	Miami	800-753-1756	305-635-1381
Superbrand Dairy Products Inc	63	2026		Milk, juice & drinks	Miami		305-685-8079
Sunlight Foods Inc	100	2035		Salad dressings, vegetable, corn & canola oils	Miami	800-325-8201	305-688-5400
Purity Products Inc	120	2099		Mayonnaise, salad dressing, relishes, pickles, barbecue sauce, vegetable oil & maraschino cherries	Miami	800-654-0235	305-592-3600
Beverage Cannors	200	2086		Soft drink, water & juice	Miami	800-226-5061	305-685-5061
Duda Redl Foods	50	2033		Canned & frozen celery	Mount Dora		352-383-5288
Action Products Intl Inc	45	2034		Astronaut ice cream, freeze dried produce & action snacks	Ocala	800-772-2846	352-687-2202
Lee, T G Foods Inc	50	2026		Milk, sour cream, yogurt, juice & fruit punch	Orange City		904-775-6700
Hacienda Food Products Inc	25	2099		Tortillas, chips, fajitas, burritos, salsa, fresh & frozen Mexican food products	Orlando		407-851-2952
Frito-Lay Inc	500	2096		Potato chips & snack foods	Orlando		407-295-1810
Duda, A & Sons Inc	130	2033		Canned & frozen celery & fruit juices	Oviedo		407-365-2111
Crystals Intl Inc	34	2037		Freeze dried fruit & vegetable juice	Plant City	800-237-7620	813-754-2691
Crystals Intl Inc	60	2037		Freeze dried fruit & vegetables juices	Plant City		813-754-7751
Superbrand Dairy Products	170	2024		Milk, ice cream & juice drinks	Plant City		813-754-1847
Paradise Inc	300	3089		Plastic injection molded containers; glace fruit & candied peels	Plant City		813-752-1155
Alfonso Gourmet Pasta Inc	25	2098		Fresh & frozen gourmet pasta	Pompano Beach		954-427-2762
Schreiber, R L Inc	60	2032		Soups, gravy bases & spices	Pompano Beach	800-624-8777	954-972-7102
Kennesaw Fruit Juice Co	70	2033		Fresh orange & grapefruit juice	Pompano Beach		954-782-9800
Gargiulo Inc	200	2033		Tomato processing	Quincy		850-875-4020
Dominex LC	75	2038		Frozen & fried eggplant	Saint Augustine	800-282-1030	904-692-1348

Appendix 1-C (continued)

Florida Fruit and Vegetable Industries - 87 Records (Page 3)						
Company	# Empl.	Primary SIC	Product Description	Mail City	800 Number	Phone
Velda Farms Dairies Inc	120	2026	Milk & juices	St Petersburg		727-526-9191
Catalina Finer Food	33	2099	Food processor: tamales, croquettes, beans & marinade sauces	Tampa	800-627-6393	813-876-3910
Plantain Products Co	40	2096	Plantain chips	Tampa	800-477-2447	813-626-9486
Lykes Brothers Inc	50	2033	Citrus products & beverages, dispensers, metal & paper composite cans	Tampa	800-243-0494	813-223-3981
Golden Gem Growers Inc	800	2037	Orange, grapefruit, Brazilian concentrates & fruit juices	Umatilla	800-323-3201	352-669-2101
Indian River Packing Co Inc	50	2037	Citrus fruits	Vero Beach		561-562-3535
Ocean Spray Cranberries Inc	80	2033	Grapefruit juice concentrate	Vero Beach		561-562-0800
Indian River Exchange Packers	120	2037	Citrus fruits	Vero Beach		561-562-2252
Golden River Fruit Co	150	2037	Fruit processing & packaging	Vero Beach	800-562-3820	561-562-4502
Gracewood Fruit Co	400	2037	Processing & packaging of citrus fruits	Vero Beach		561-567-1151
Waverly Growers Co-Op	150	2033	Fresh fruit packaging service	Waverly		941-439-3602
Tropi-Kist Fruit Products Co	50	2033	Fruit juice & salad	West Palm Beach	800-826-3537	561-683-2663
Slim Fast Foods Co	100	2032	Dietetic food products	West Palm Beach		561-833-9920
Winter Garden Citrus Inc	300	2037	Frozen concentrated citrus products	Winter Garden		407-656-1000
Fresh Juice Co Of FL Inc	160	2033	Fresh & frozen orange juice	Winter Haven		941-299-6915

Appendix 1-D

Florida Sugar, Candy and Chocolate Industries - 16 Records						
Company	# Empl	Primary SIC	Product Description	Mail City	800 Number	Phone
Atlantic Sugar Association	450	2062	Sugar	Belle Glade		561-996-6541
Talisman Sugar Corp	700	2061	Process raw cane sugar	Belle Glade		561-996-5527
Sugar Cane Growers Co-Op	1000	2062	Process raw cane sugar	Belle Glade		561-996-5556
Florida Candy Factory Inc	29	2064	Saltwater taffy & dinner mints	Clearwater		727-446-0024
Florida Citrus Tower	20	2064	Candy & confectionery products	Clermont		352-394-4061
Savannah Foods & Industries	35	2062	Refined & liquid cane sugar	Clewiston		941-983-8171
Bryant Sugar House/Eastern Div	250	2062	Raw sugar processing	Clewiston	800-237-2948	561-924-5601
U S Sugar Corp	3000	2061	Sugar cane processing	Clewiston		941-983-8121
Angell & Phelps	27	2066	Chocolate candy	Daytona Beach	800-969-2634	904-252-6531
Davidson's Of Dundee	70	2064	Citrus candy, marmalade, jelly & butters	Dundee	800-654-0647	941-439-1698
Hoffman's Chocolate Shoppe	50	2066	Chocolate candy & confections	Lake Worth	888-281-8800	561-967-2213
Signature Brands LLC	200	2064	Candy cake decorations	Ocala	800-456-9573	352-622-3134
Okeelanta Corp	35	2062	Sugar	Palm Beach		561-655-6303
American Natural Snacks	25	2064	Natural candy	Saint Augustine	800-874-0851	904-825-2039
Whetstone Candy Co Inc	275	2064	Candy & confectionery products	Saint Augustine	800-849-7933	904-825-1700
Okeelanta Corp	1200	2062	Sugar cane refining	South Bay		561-996-9072

Appendix 1-E

Florida Grain Industries - 18 Records						
Company	# Empls.	Primary SIC	Product Description	Mall City	800 Number	Phone
Florida Brewery Inc	30	2082	Beer & malt beverages	Auburndale		941-965-1825
Bartow Ethanol Inc	25	2869	Industrial & beverage alcohol	Bartow		941-533-2498
Pulgini Pasta Products Inc	25	2098	Specialty pasta products	Fort Lauderdale		954-973-7458
Bay State Milling Co	35	2041	Flour & wheat milling	Indiantown		561-597-2056
Cargill Inc	27	2041	Flour & mill feed	Jacksonville	800-342-0589	904-768-0563
Castleton Beverage Corp	270	2085	Rum	Jacksonville		904-757-1290
Anheuser-Busch Inc	800	2082	Malt beverages	Jacksonville		904-751-0700
Florida Distillers Co	110	2085	Liquor, distilled spirits, wine & vinegar	Lake Alfred		941-967-4481
Florida Distillers Co	280	2084	Citrus brandy & wine, cane alcohol, rum & vinegar	Lake Alfred		941-956-1116
Ital Florida Foods Inc	27	2098	Pasta products	Miami		305-769-0799
Syrett Feed Co Inc	20	2048	Livestock feed	Okeechobee		941-763-5586
Consolidated Food Management	42	2098	Pasta products	Orlando		407-856-4343
Alfonso Gourmet Pasta Inc	25	2098	Fresh & frozen gourmet pasta	Pompano Beach		954-427-2782
Sarasota Brewing Co	33	2082	Micro brewery	Sarasota		941-925-2337
Southeastern Food Supply	30	2098	Noodles	Tampa		813-933-4197
Vigo Importing Co	100	2098	Importer of rice dinners, bread crumbs, olive oil, pasta	Tampa	800-282-4130	813-884-3491
Siroh Brewery Co	200	2082	Beer	Tampa	800-233-8285	813-972-8500
Toothunter Intl Inc	25	2085	Distilled spirits	West Palm Beach		561-655-8977

Appendix 1-E (continued)

Florida Bakeries - 47 Records						
Company	# of Empl	Primary SIC	Product Description	Mall City	800 Number	Phone
St Armand's Baking Co	50	2051	Bakery products	Bradenton		941-753-7494
Flowers Baking Co	175	2051	Bread & rolls	Bradenton	800-832-9385	941-758-5656
Krispy Kreme Doughnut Co	30	2051	Doughnuts	Daytona Beach		904-253-2508
Little Angel Foods Inc	55	2051	Cheesecake & desserts	Daytona Beach	888-433-3040	904-257-3040
Carvel Ice Cream Bakery	25	2051	Cakes & ice cream novelties	Fort Lauderdale		954-351-7121
Bagelmania Inc	75	2051	Bagels & breads	Fort Lauderdale		954-748-5077
Ore-Ida Foods Inc	300	2051	Bagels, frozen pizza & snacks	Lauderdale Fort Myers		941-694-3663
Cusano Italian Bakeries Inc	35	2051	Italian bread & bakery products	Hallandale		954-458-1010
New York Bakeries Inc	100	2051	Bakery products	Hialeah		305-882-1355
Silver Tray Cookies	90	2052	Cookies, sugar-free pound cake & fruit flavored cream cakes	Hialeah		305-883-0800
Gilda Industries Inc	150	2052	Crackers	Hialeah		305-887-8286
Proitano's Bakery	85	2051	Bakery products	Hollywood		954-925-3474
Krispy Kreme Doughnut Co	30	2051	Doughnuts	Jacksonville		904-786-8990
Flowers Baking Co	125	2051	Bread, rolls & muffins	Jacksonville	800-771-3771	904-354-3771
Merita Bakery	300	2051	Bread, rolls & hearth baked products	Jacksonville		904-696-1400
East Bait Bakery Of FL Inc	60	2051	Bakery products	Kissimmee		407-933-2222
Pepperidge Farm Inc	220	2051	Breads	Lakeland		941-688-4000
Publix Supermarkets Inc	350	2051	Carbonated beverages, bakery & dairy products	Lakeland		941-688-1188
Butter Krust Bakery	350	2051	Breads & buns	Lakeland	800-283-8093	941-682-1155
Publix Supermarkets Inc	500	2051	Bakery products	Lakeland		941-680-5321
Beach Bagel Bakeries Inc	30	2051	Bagels & bakery products	Miami		305-691-3514
Velvet Creme Doughnut Co	60	2051	Bakery goods	Miami		305-445-1467
Flowers Baking Co	190	2051	Bakery products	Miami		305-652-3416
A & C Bakery Inc	200	2051	Italian specialty breads	Miami	800-432-0353	305-681-8000
Interstate Brands Comp/Holsum	450	2051	Rolls & bread	Miami	800-465-7861	305-888-3441
CPC Baking Business	500	2051	Fresh baked goods	Miami	800-432-8266	305-836-4900
Savant Foods Inc	20	2053	Frozen baked goods	Miami		305-883-4400
Renaissance Baking Co	20	2051	Bread	North Miami		305-893-9394
Pane Amore Bake Shop Inc	20	2051	Bakery products: pies, cookies, bread, cakes & danish	North Miami		305-893-6591
Krispy Kreme Doughnut Co	40	2051	Doughnuts	North Miami Bch		305-949-6135
Cuisine Des Chefs	30	2051	Cheese cakes, pastries, croissants & French bakery products	Orlando		407-851-2927
Bagel King Bakery	30	2051	Bread & bakery products	Orlando		407-297-4100
Meyers Bakeries Inc	50	2051	English muffins	Orlando		407-859-2006
Central Florida Bakery	75	2051	Bakery products	Orlando		407-852-6200
Toufayan Bakery Of FL Inc	100	2051	Breadsticks & pita bread	Orlando		407-295-2257

Appendix 1-E (continued)

Florida Bakeries - 47 Records (Page 2)						
Company	# Empl	Primary SIC	Product Description	Mail City	800 Number	Phone
Merita Bakery	700	2051	Breads & bakery products	Orlando		407-843-5110
Nabisco Inc	100	2052	Cookies & crackers	Orlando		407-299-4450
J S Pastry Shop	25	2051	Pastries, rolls, cakes & bakery products	Pensacola		850-432-4180
Krispy Kreme Scruggs Inc	34	2051	Doughnuts	Pensacola		850-438-4639
Mrs Allison's Cookie Co Inc	300	2052	Cookies	Plant City	800-476-3237	813-754-5565
Elliots Bakery Inc	41	2053	Frozen pastries & cakes	Pompano Beach	800-232-6163	954-946-9055
CPC Baking Business	175	2051	Bread, rolls & muffins	Riviera Beach	800-432-4135	561-848-9705
More Bakery Inc	28	2051	Cuban bread & Spanish pastries	Tampa		813-248-1531
Alessi Bakeries Inc	65	2051	Bread, rolls, cakes & cookies	Tampa		813-871-2286
Krispy Kreme Doughnut Corp	100	2051	Doughnuts & buns	Tampa		813-932-4395
Interstate Brands Corp	200	2051	Bread products	Tampa	800-877-2813	813-253-2813
First Grade Food Corp	20	2052	Cookies	Tampa	800-741-3432	813-886-6118

Appendix 1-F

Company	# Emp	Primary SIC	Product Description	Mail City	800 Number	Phone
NutraFeed Inc	30	2048	Food recycling: livestock feed & dog food	Clermont	800-555-4441	352-394-7744
Cargill Inc	50	2048	Livestock, poultry & pet food	Kissimmee	800-282-4787	407-846-4169
Purina Mills Inc	25	2048	Livestock feed	Lake City		904-752-7660
Hilandale Farms Of FL	30	2015	Eggs & animal feed	Lake City		904-755-1870
Lakeland Cash Feed Co	45	2048	Animal & poultry feed	Lakeland		941-665-5722
Florida Transport Co	35	2077	Grease & tallow, meat & bone meal	Miami		305-592-6927
Purina Mills Inc	38	2048	Livestock & poultry feed	Mulberry		941-425-5544
Ocala Breeders Feed & Supply	35	2048	Horse feed	Ocala		352-629-8686
Walpole Feed & Supply Co	20	2048	Animal feeds	Okeechobee	800-343-8474	941-763-6905
Syrett Feed Co Inc	20	2048	Livestock feed	Okeechobee		941-763-5586
Tampa Independent Dairy Farm	30	2048	Bulk dairy feed	Plant City		813-754-1497
Griffin Industries Inc	60	2077	Tallow, bone meal & grease	Starke	800-782-7147	904-964-8083
Manna Pro Corp	33	2048	Poultry & livestock feed	Tampa	800-749-7784	813-620-9007
Tampa Independent Dairy Farm	100	2048	Bulk dairy feed	Tampa	800-899-3961	813-247-3961
Zephyr Egg Co	20	2015	Egg processing & poultry, cattle & hog feed	Zephyrhills	800-488-6543	813-782-1521

Appendix 1-G

Company	# of Empl	Primary SIC	Product Description	Mail City	800 Number	Phone
Flavors From Florida Inc	40	2087	Ice cream, sherbert, & drink base flavoring	Bartow	800-888-0409	941-533-0408
Brothers Gourmet Coffees Inc	70	2095	Coffee	Boca Raton		561-995-2600
Citrus Service Inc	25	2087	Citrus fruit juice concentrates	Brooksville		407-656-3233
Monin Inc	25	2087	Flavored coffee & tea syrups	Clearwater	800-966-5225	727-461-3033
Seco Dairies Of FL Inc	25	2099	Drink bases	Deland		904-734-3906
Florida Food Products Inc	25	2087	Vegetable concentrates	Eustis	800-874-2331	352-357-4141
Ore-Ida Foods Inc	300	2051	Bagels, frozen pizza & snacks	Fort Myers		941-694-3663
Cargill Citro-America Inc	250	2087	Bulk concentrates & by-products from oranges	Frostproof		941-635-2211
A B C Research Corp	60	8731	Research & development: food products & microbiology	Gainesville		352-372-0436
Parman Kendall Corp	30	2087	Citrus juice, oil, concentrate & peel	Gainesville		305-258-1628
Urys Corp/Tortilla Div	24	2099	Tortillas	Hialeah		305-826-0943
Egg Roll Skins Inc	30	2099	Fortune cookies, oriental noodles & egg roll wrappers	Hialeah	800-548-2910	305-836-0571
Holiday Foods Inc	120	2099	Fresh & frozen specialty snacks & hors d'oeuvres	Hollywood		954-921-7786
Westray Group	25	7389	Ethnic food product processing & packaging	Jacksonville	888-937-8729	904-781-8777
Jacksonville Hotel Supply Co	35	2099	Full service food products	Jacksonville		904-356-4846
Astor Products/Coffee Div	83	2095	Coffee, tea & spices	Jacksonville		904-783-5330
Dan-Dee Foods	100	2099	Sandwiches	Jacksonville		904-356-6258
Millennium Specialty Chemicals	250	2087	Organic chemicals; flavors & fragrances	Jacksonville	800-231-6728	904-768-5600
Winn-Dixie Stores Inc	250	2099	Food products, detergents & grocery bags	Jacksonville		904-783-5000
Maxwell House Coffee Co	300	2095	Coffee	Jacksonville		904-366-3400
Duda Citrus Belle	70	2087	Fruit juice concentrates	Labelle		941-675-0336
Florida Distillers Co	110	2085	Liquor, distilled spirits, wine & vinegar	Lake Alfred		941-967-4481
Florida Distillers Co	280	2084	Citrus brandy & wine, cane alcohol, rum & vinegar	Lake Alfred		941-956-1116
SunPure Ltd	40	2087	Natural food flavorings; bulk botanical solvent chemicals, D-limonene & orange terpene	Lakeland		941-619-2222
Florida Flavors Inc	40	2087	Citrus beverage concentrates	Lakeland		941-646-0165
Fruit Bud Juice Corp	55	2087	Citrus juice concentrates	Lakeland		941-666-1131
Givaudan Roure Corp	65	2087	Food flavorings & extracts	Lakeland	800-869-7333	941-665-1040
Blue Ridge Farms Inc	20	2099	Prepared salads	Medley	800-422-8862	305-888-3208
S O S Food Laboratories Inc	27	2099	High calorie survival rations; food & water	Miami		305-594-9933
Western Oil Corp	32	2079	Corn oil	Miami		305-885-0511
C P R International Lid	38	2087	Food seasonings	Miami		305-591-9785
Rowland Coffee Roasters Inc	80	2095	Coffee	Miami	800-990-9039	305-594-9039
Sunlight Foods Inc	100	2035	Salad dressings, vegetable, corn & canola oils	Miami	800-325-8201	305-688-5400
A R A Food Corp	100	2099	Pork rinds, plantain & cassava chips	Miami		305-592-5558
Purity Products Inc	120	2099	Mayonnaise, salad dressing, relishes, pickles, barbecue sauce, vegetable oil & maraschino cherries	Miami	800-654-0235	305-592-3600
L S G Sky Chefs	250	2099	Food preparation for airline industry	Miami		305-633-6991
Gargiulo Inc	800	2099	Potatoes, tomatoes, strawberries & assorted berries	Naples		941-597-3131
Golden Flake Snack	80	2099	Snack food processing & packaging	Ocala	800-239-9022	352-351-2277

<---- Record Continued ---->

Appendix 1-G (continued)

Florida Mixed Food Industries - 62 Records (Page 2)						
Company	# of Empl	Primary SIC	Product Description	Mail City	800 Number	Phone
Foods Inc						
Hacienda Food Products Inc	25	2099	Tortillas, chips, fajitas, burritos, salsa, fresh & frozen Mexican food products	Orlando		407-851-2952
H & H Products Co	30	2087	Fountain & pancake syrups, drink mixes, liquid tea concentrates	Orlando	800-678-8448	407-299-5410
Spice World Inc	75	2099	Spices & garlic	Orlando	800-433-4979	407-851-9432
Tom's Foods Inc	100	2099	Snack foods	Perry		850-584-7574
Tata Tea Inc	30	2099	Instant tea	Plant City		813-754-2602
El Mirasol Inc	52	2099	Corn & flour tortillas	Plant City		813-754-5857
Marjon Specialty Foods Inc	95	2099	Tofu, alfalfa & bean sprouts	Plant City		813-752-3482
Fresh Inc	40	2099	Fresh fruit & vegetable processing, cutting & packaging	Pompano Beach		954-972-5929
Schreiber, R L Inc	60	2032	Soups, gravy bases & spices	Pompano Beach	800-624-8777	954-972-7102
Quincy Farms Corp	555	2099	Fresh mushrooms	Quincy	800-233-3987	850-875-1600
Firmenich Citrus Center	69	2087	Citrus oil, essences & flavors for food & beverages	Safety Harbor	800-551-1678	727-725-1678
Dominex LC	75	2038	Frozen & fried eggplant	Saint Augustine	800-282-1030	904-692-1348
Taylor Farms Florida Inc	165	2099	Fresh vegetable processing & salads	South Bay		561-998-2090
G A Food Svc Of Pinellas Cnty	250	2099	Hot meals for senior citizen & day care facilities	St Petersburg	800-852-2211	727-573-2211
Garcia, R W Inc	20	2099	Tortilla chips	Tampa		813-886-3590
Brisk Coffee Co	25	2095	Coffee & tea	Tampa		813-248-6264
Catalina Finer Food	33	2099	Food processor: tamales, croquettes, beans & marinade sauces	Tampa	800-627-6393	813-876-3910
Old 97 Co	35	2087	Flavorings	Tampa		813-247-6677
Instantwhip	40	2026	Portion creamers, frozen desert mix, frozen yogurt & aerosol toppings	Tampa	800-633-1824	813-621-3067
Vigo Importing Co	100	2098	Importer of rice dinners, bread crumbs, olive oil, pasta	Tampa	800-282-4130	813-884-3491
Tropi-Kist Fruit Products Co	50	2033	Fruit juice & salad	West Palm Beach	800-826-3537	561-683-2663
Sun Pac Foods Inc	100	2087	Orange concentrate, cattle feed, citrus oils & essence	Winter Haven		941-533-0808
Terry Farms Inc	350	2099	Mushroom packaging & processing	Zellwood		407-886-0449
Mancini Packing Co	130	2099	Bell pepper processing	Zolfo Springs		941-735-2000

Florida Class I Landfills

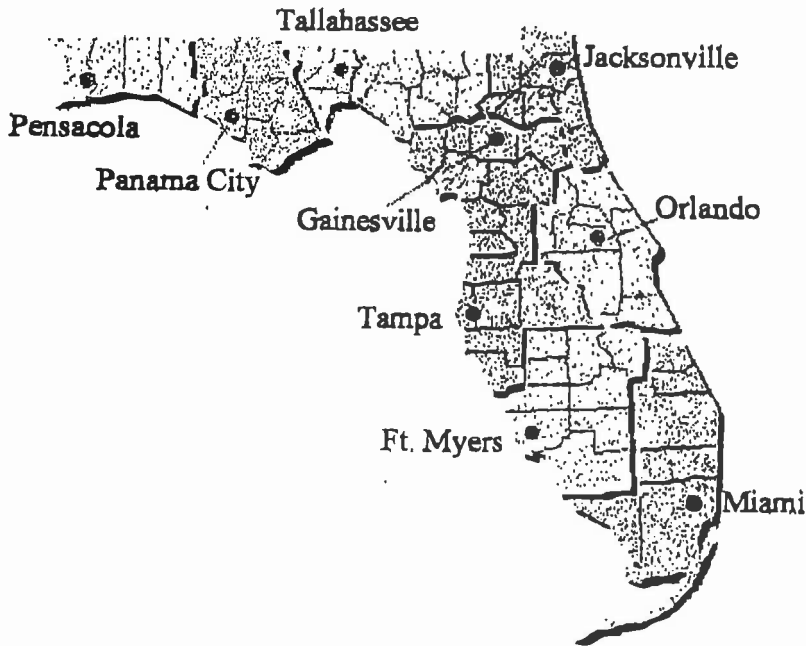
Appendix 2-A

Region	County	Landfill Name	Location	Operated By	Contact Name	Contact Phone
1	Escambia	Perdido LF	Muscogee	Escambia Co Solid Waste	David Gregory	850/968-4180
1	Escambia	Rock Crossing (Champion Paper)	Championment	Champion Intl Corp		
1	Okaloosa	Baker LF (Baker West)	Baker	BOCC	Cindy Halsey	904/879-6321
1	Santa Rosa	Cytec	Milton	Cytec Industries		
1	Santa Rosa	SR Central LF	Badgad	BOCC	Tony Gormillon	850/626-0191
1	Walton	Walton Co Central LF	Defuniak Springs	BOCC	Ronnie Hudson	850/892-8108
2	Bay	Steelfield Rd LF	West Bay	BOCC	Bill Hudson	850/872-4785
2	Holmes	HC LF (Epsi)	Bonifay	BOCC	Reney Gilmore	850/547-0922
2	Jackson	Springhill Regional LF	Cambellton	WM Nam	Genette Foran	850/482-9370
3	Columbia	Winfield	Winfield	BOCC	Bill Lycan	904/752-6050
3	Hamilton	HC SLF	Jasper	BOCC	Waylon Smart	904/792-1020
3	Leon	US 27 So LF	Tallahassee	BOCC	Jud Curtis	850/488-8003
3	Madison	Aucilla Area SW Facility	Greenville	Suwannee Valley SWMgmt Admn	Kevin Beals	850/973-2611
3	Suwannee	SC Central LF	Suwannee	BOCC	Ray Brown	904/362-3992
3	Wakulla	Lower Bridge LF	Crawfordville	BOCC	Kenneth Burke	850/926-3153
4	Duval	Trail Ridge LF	Maxville	Trail Ridge LF Inc	Jackie Eidsedge	904/655-8050
4	Nassau	W Nassau SLF	Callahan	BOCC	Robert McIntyre	904/879-6321
4	St Johns	Tilman Ridge SLF	St Augustine	BOCC	John Schwab	904/824-9720
4	Union	New River Regional LF	Raiford	FL Internal Improvement Trust Fund	Jimmy Beasley	904/496-2180
5	Alachua	Alachua Co Southwest Landfill	Archer	BOCC	Norm Thomas	352/495-9215
5	Citrus	Citrus Central SLF	Lecanto	BOCC	Susan Metcalfe	352/746-5000
5	Hernando	HC NW LF	Brooksville	Hernando Co Utilities Dept	Stephanie Hirson	352/754-5102
5	Levy	LC SWM Facility	Bronson	BOCC	Wayne Hardee	352/486-5127
5	Marion	Baseline LF	Ocala	Marion Co Solid Waste	Allen Ellison	352/245-4584
5	Putnam	Putnam Co Central SLF	Palatka	BOCC	Joseph Batillo	904/329-0395
6	Brevard	Brevard Co Central LF	Cocoa	BOCC	Richard Rabon	407/633-2043
6	Indian River	IRCoLF	Oslo	IR Co Utilities	Ronald Brooks	407/770-5112 x208
6	Lake	Astatula (Lake Co SWMF)	Astatula	LC PW Dept	Donald Post	352/343-3776
6	Orange	OCSLF	Orlando	Orange Co Utilities Div	Michael Chandler	407/836-7251
6	Osceola	City of St Cloud LF	St Cloud	Co SC PW	Leonard Marib	407/847/4481
6	Osceola	Southport Rd SLF	Kissimmee	Osceola Co SW		
6	Seminole	Osceola Rd LF	Geneva	BOCC	Fred Blakeley	407/322-7605
6	Volusia	Tomoka Farms Rd LF	Daytona Beach	Volusia Co PW	Jim Griffin	904/947-2952
7	Hillsborough	David Joseph LF	Tampa	David Joseph Co		
7	Hillsborough	SE Co SLF (Picnic LF)	Picnic	HC SW Dept	Daryl Smith	813/272-5680
7	Manatee	Lena Rd Co LF	Bradenton	Manatee Co Public Utilities	Gus Difonzo	941/792-8811
7	Pasco	E Pasco LF (Dade City LF)	Dade City	Pasco Co Environmental Dept	Robert Sigmond	813/847-8041

Florida Class I Landfills

Appendix 2-A (continued)

Region	County	Landfill Name	Location	Operated By	Contact Name	Contact Phone
7	Pinellas	Bridgeway Acres LF	St Petersburg	Pinellas Co SW Dept	Michael Rudd	813/464-5665
7	Polk	N Central LF (201)	Eaton Park	Polk Co Environmental Services	Steven Sheaky	941/284-4319
7	Polk	NE Polk LF (204)	Lake Hamilton	Polk Co Environmental Services		
7	Polk	SE Polk LF (203)	Lake Wales	Polk Co Environmental Services		
7	Sarasota	Bee Ridge	Sarasota	Sarasota Co SW Div	Edward Gosucki	941/364-4400
7	Sarasota	S Central LF Complex	Sarasota	Sarasota Co SW Div		
8	Charlotte	Zemei Rd LF	Tropical Gulf Acres	Charlotte Co Mosquito Control	Thomas Keith	941/639-1349
8	Collier	Immokalee LF (#2-Stockade)	Immokalee	WMIF	David Russell (acting)	941/732-2508
8	Collier	Naples SLF Cell #6 (Collier Co)	Naples	WMIF		
8	DeSoto	Section 16 LF Expansion	Nocatee	BOCC	Bill Hines	941/993-4826
8	Hardee	HC Regional LF	Wauchula	BOCC	JR Prestidge	941/773-5089
8	Hendry	Lee/Hendry Regional LF	Felda	Lee Co SW Mgmt	George Slider	941/675-5222
8	Highlands	Desoto City LF	Sebring	BOCC		941/655-6477
8	Highlands	HC SWMgmt Center	Sebring	Highland Co Solid Waste		
8	Lee	Gulf Coast SLF	Fl Myers	WMIF	Larry Johnson	941/479-8590
8	Okeechobee	Berman Rd LF	Okeechobee	Chambers Waste Systems	Mark Baggett	941/763-1811
9	Broward	BC Interim Contingency LF	Pembroke Pines	Broward Co Utilities Div	Mary Beth Busutti	954/765-4202
9	Broward	Central Disposal SLF	Pompano Beach	WMIF		
9	Dade	Medley LF	Medley	WMIF	Andrew Wiffork	305/694-1520
9	Dade	S Dade Shredded Waste LF	Goulds	Metro Dade Co PW		
9	Marin	MCSLF	Palm City	Martin Co SWMgmt	Josef Grigaitkas (acting)	561/221-1384
9	Monroe	Cudjoe Key LF	Cudjoe Key	Monroe Co Municipal Serv Dist	Mike Lawn	305/292-4438
9	Palm Beach	PBC SWA #7	Riviera Beach	Palm Beach Co SWA		561/640-4000
9	St Lucie	SLC SLF	Fl Pierce	St Lucie Co PW	Leo Cordelro	407/462-1634



Region 1: Pensacola

Escambia
Okaloosa
Santa Rosa
Walton

Region 2: Panama City

Bay
Calhoun
Franklin
Gulf
Holmes
Jackson
Liberty
Washington

Region 3: Tallahassee

Columbia
Gadsden
Hamilton
Jefferson
Lafayette
Leon
Madison
Suwannee
Taylor
Wakulla

Region 4: Jacksonville

Baker
Bradford
Clay
Duval
Flagler
Nassau
St Johns
Union

Region 5: Gainesville

Alachua
Citrus
Dixie
Gilchrist
Hernando
Levy
Marion
Putnam
Sumter

Region 6: Orlando

Brevard
Indian River
Lake
Orange
Osceola
Seminole
Volusia

Region 7: Tampa

Hillsborough
Manatee
Pasco
Pinellas
Polk
Sarasota

Region 8: Ft Myers

Charlotte
Collier
DeSoto
Glades
Hardee
Hendry
Highlands
Lee
Okeechobee

Region 9: Miami

Broward
Dade
Martin
Monroe
Palm Beach
St Lucie

APPENDIX 3
FLORIDA FOOD WASTE DIVERSION
 Planning Information For Workshops

Sample Agenda For Workshop

The following is a sample agenda for a workshop on food waste diversion options.

Time	Topic
9:00 a.m.	Welcome <ul style="list-style-type: none"> • Discuss day's agenda • Purpose for workshop series
9:15 a.m.	Overview of food waste generation and management strategies in Florida <ul style="list-style-type: none"> • Focus on food banks & rescue programs, animal feed and composting
10:00 a.m.	Food banks and food rescue programs <ul style="list-style-type: none"> • Presentation on how programs work, how to businesses and institutions can get involved, local programs
10:45 a.m.	Animal feed <ul style="list-style-type: none"> • Presentation on the animal feed industry, cattle and swine feed, rendering, dehydrated feed, ensiled feed, local programs
11:15 a.m.	Break
11:30 a.m.	Composting <ul style="list-style-type: none"> • Presentation on composting with focus on food waste, centralized composting facilities, small in-vessel units, windrow, markets, case study
12:15 p.m.	Lunch (catered lunch on-site to save time)
1:00 p.m.	Overview of state regulations - what they are, where to go for help <ul style="list-style-type: none"> • Food banks and rescue programs - Good Samaritan laws • Animal feed - swine feeding regulations • Composting
1:45 p.m.	Resources available on food waste diversion topics
2:00 p.m.	Roundtable(s) with different industry representatives <ul style="list-style-type: none"> • Obstacles to increased food waste diversion • Identify opportunities and ways to overcome obstacles • Brainstorming on future directions to take with food waste diversion • Identify new partners to involve in education, promotion and marketing of food waste recycling and reuse
3:00 p.m.	Tour of local facility - depends on location of workshop. Options for tours include operating composting facility, food bank, or animal feed dehydration facility.
3:45 p.m.	Workshop concludes - evaluation

Possible Workshop Locations

Location	Tour	Contact Person
University of Florida Tropical Research and Education Center - Homestead	Windrow composting facility with prison food waste	Dr. Herb Bryan, 305-246-7043, hhb@gnv.ifas.ufl.edu
Hotel or Cooperative Extension facility - Orlando area	Second Harvest food bank, NutraCycle animal feed production facility or Disney World compost site (if operational)	Katherine Allen-Hurt, Orange County Extension agent, 407-836-7570
Hotel, restaurant or Cooperative Extension facility - Jacksonville area	Second Harvest food bank	Harold C. Jones, Duval County Extension office, 904-387-8850
Restaurant in Fort Walton Beach or Air Force base facility (8 miles from Fort Walton Beach)	In-vessel composting facility (Ag-Bag), can tour Summer or Fall 1999	Suzanne Mead, Eglin Air Force Base, 850-882-6282 Ext. 590, 'MEADES@ntserver.eglin.af.mil'
Hotel, restaurant or Cooperative Extension facility - Tallahassee area	Second Harvest food bank	Leon County Extension office, (904) 487-3003, or Dr. Bob Meyer, 850-482-9955 (Marianna)
New College of the University or restaurant - Sarasota area	Earth Tub in-vessel composting unit (if operational)	Michelle Harvey, Solid Resources, Inc., Sarasota, 941-377-4580 or Julie Morris, New College, Sarasota, 941-359-5753

Potential Speakers

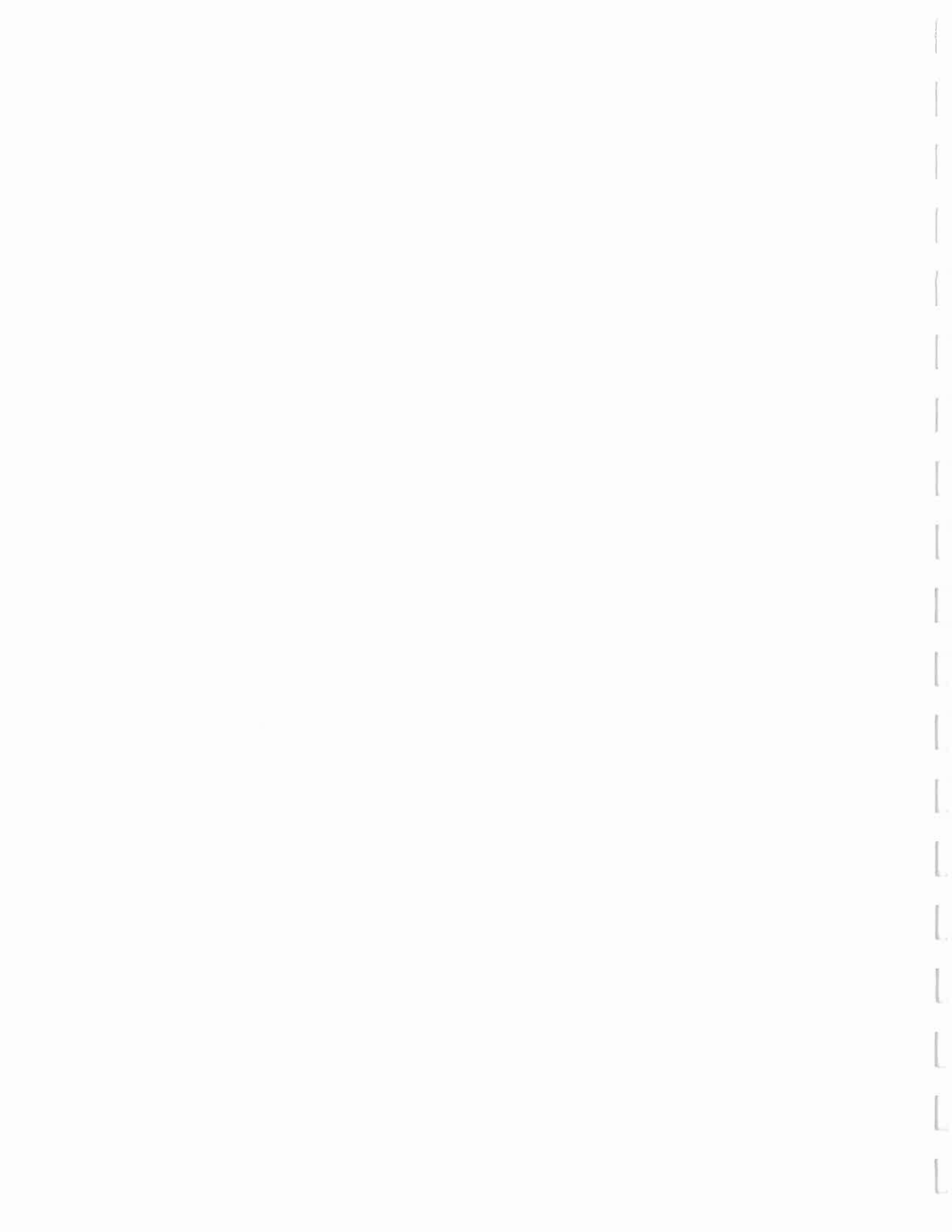
Name	Topic	Contact Information
Dr. Wayne Smith	Overview of food waste diversion activity in FL	Center for Biomass Programs, IFAS, UFL Gainesville, 352-846-0850
Dr. Aziz Shiralipour	Overview of food waste diversion activity in FL and food waste composting	Center for Biomass Programs, IFAS, UFL Gainesville, 352-392-1511
Sally Palmi	Overview of food waste diversion activity in FL	Alachua Co. Public Works Gainesville, 352-495-9215
Mitch Kessler	Overview of food waste diversion activity in FL and food waste composting	TIA Solid Waste Mgt. Consultants, Tampa, 813-264-7240
Holly Johnson	Overview of food waste diversion activity in FL and resources available for food diversion	Graduate Student, UFL, Gainesville (after 7-99) 715-346-2793
Jenny Kate Herring	Food banks and food rescue programs	Speaker's bureau - can recommend other speakers in state, Second Harvest, Orlando, 407-295-1066
Susie Clancy of Palm Beach County Solid Waste Authority - info. source	Food banks and food rescue programs	Palm Beach Harvest, Palm Beach, 561-640-4000, Ext. 4409
	Food banks and food rescue programs	Second Harvest Food Bank of Northeast Florida, Jacksonville, 904-353-3663
	Food banks and food rescue programs	Second Harvest Food Bank of the Big Bend, Tallahassee, 904-562-3033
	Food banks and food rescue programs	All Faith's Food Bank, Sarasota, 941-379-6333
Dr. Bob Meyer	Animal feed	North Florida REC - Marianna, 850-482-9955
Jim Stevens	Animal feed	871 Springdale Rd., Atlanta, GA, 404-378-7002, Business interests in Ocala
Dr. Bill Jeter	Animal feed	FL State Veterinarian, Tallahassee, 850-488-6874
Bob McElhaney	Animal feed	NutraCycle, Inc., Windermere 407-295-3818
William Pace	Animal feed	Recommended by Bob Meyer, 850-482-9904
Greg Harkness	Food rescue, animal feed and food waste composting	Disney World, Orlando, 407-824-7447
Dr. Herb Bryan	Food waste composting	Homestead REC, 305-246-7043

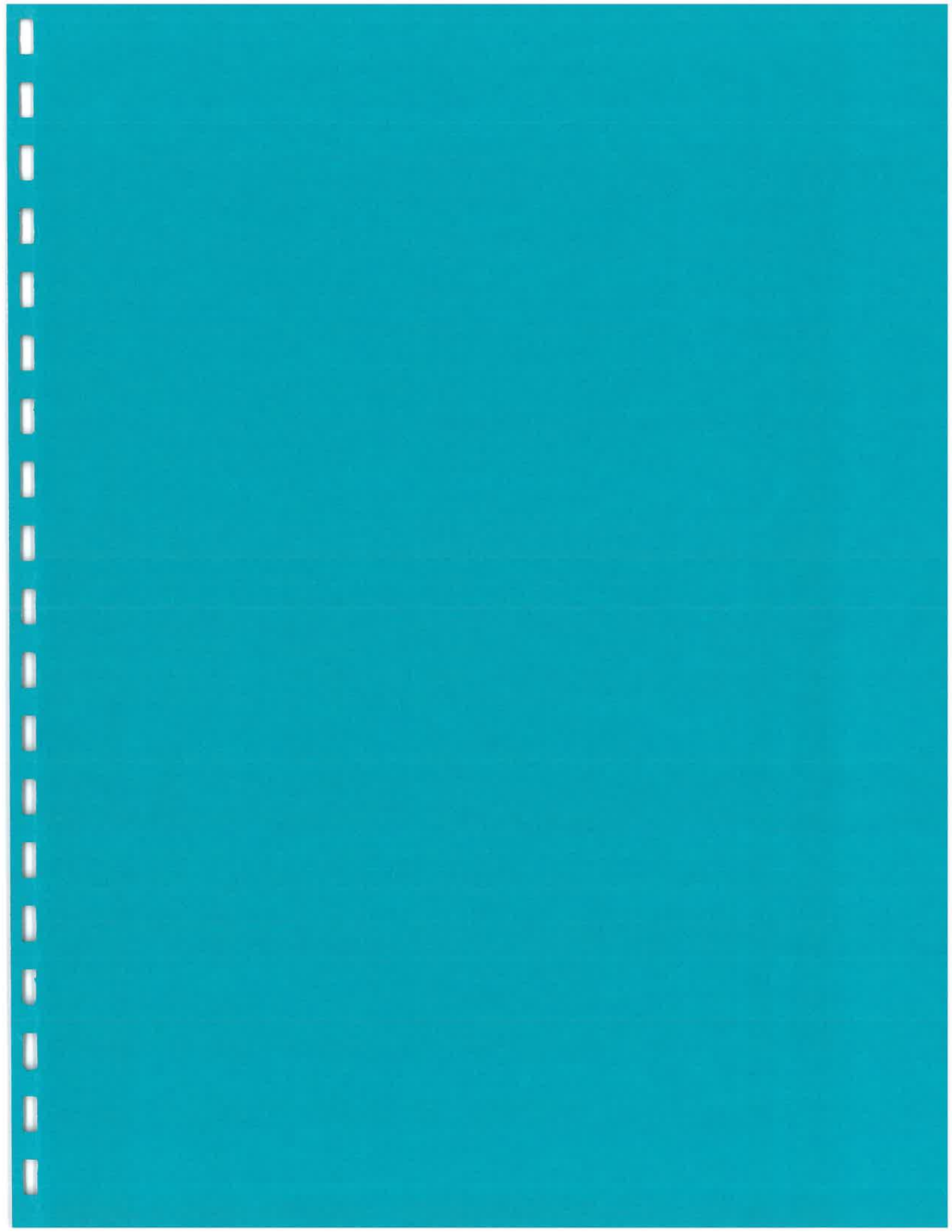
Speaker	Topic	Contact Information
Anthony Perna	Food waste composting (restaurant - Earth Tub)	Skip's Garden, Miami, 305-274-9635
Michelle Harvey	Food waste composting (college - Earth Tub)	Solid Resources, Inc., Sarasota, 941-377-4580
Suzanne Mead	Food waste composting	Eglin AFB, Fort Walton Beach, 850-882-6282 Ext. 590
Dr. Roger Nordstedt	Food waste composting	IFAS, UFL, Gainesville, 352-392-7786
Francine Joyal	Regulations - composting	Florida DEP, Solid Waste Section, Tallahassee, 850-488-0300
Katherine Allen-Hurt	Resources available for food waste diversion	Orange Co. Extension office, 407-836-7570

Sources for Mailing Lists

Type of List	Contact
Directory of Florida Industries - Harris InfoSource	Food processors - on computer disk owned by BioMass Center, IFAS, UFL - approx. 350 companies
Dept. of Environmental Protection Green Book	Peter Gordon, 850-488-0300
Florida Organic Recyclers Association	Dee Steverson, 941-756-0977
Recycle Florida Today	904-385-1528 or 800-441-7949
Florida Center for Solid and Hazardous Waste	John Schert, (approx. 1200 names), 352-392-6264
UFL Cooperative Extension	Joan Bradshaw, 352-392-8836
Institute of Food and Agricultural Sciences	Dr. Aziz Shiralipour, 352-392-1511

Note: In addition to the above sources for mailing lists, numerous trade industry groups and contacts are listed under Food Waste Generators - Food Service Industry. These organizations may be willing to include brochures and press releases in their newsletters and mailings.





The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry should be supported by a valid receipt or invoice. This not only helps in tracking expenses but also ensures compliance with tax regulations. The document further outlines the steps for recording these transactions, from identifying the nature of the expense to entering it into the accounting system.

In the second section, the focus shifts to the reconciliation process. This involves comparing the company's internal records with the bank statements to identify any discrepancies. The document provides a detailed guide on how to perform a bank reconciliation, including how to handle outstanding checks and deposits in transit. It also discusses the importance of reconciling accounts regularly to prevent errors and maintain the integrity of the financial data.

The final part of the document covers the preparation of financial statements. It explains how the recorded transactions and reconciled accounts are used to generate the income statement, balance sheet, and cash flow statement. The document provides a checklist of items to verify before finalizing these statements, ensuring that all necessary adjustments have been made and that the data is accurate and complete.