



July 8, 2015

H-GAC Commercial Food Waste Collection Workshop



Risa Weinberger & Associates, Inc.



ECONOMICS

STRATEGY

STAKEHOLDERS

SUSTAINABILITY

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Workshop Agenda

Project Background

Purpose of Project

Project Research

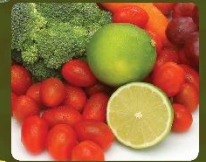
Project Interviews

Findings

Recommendations

Action Plan

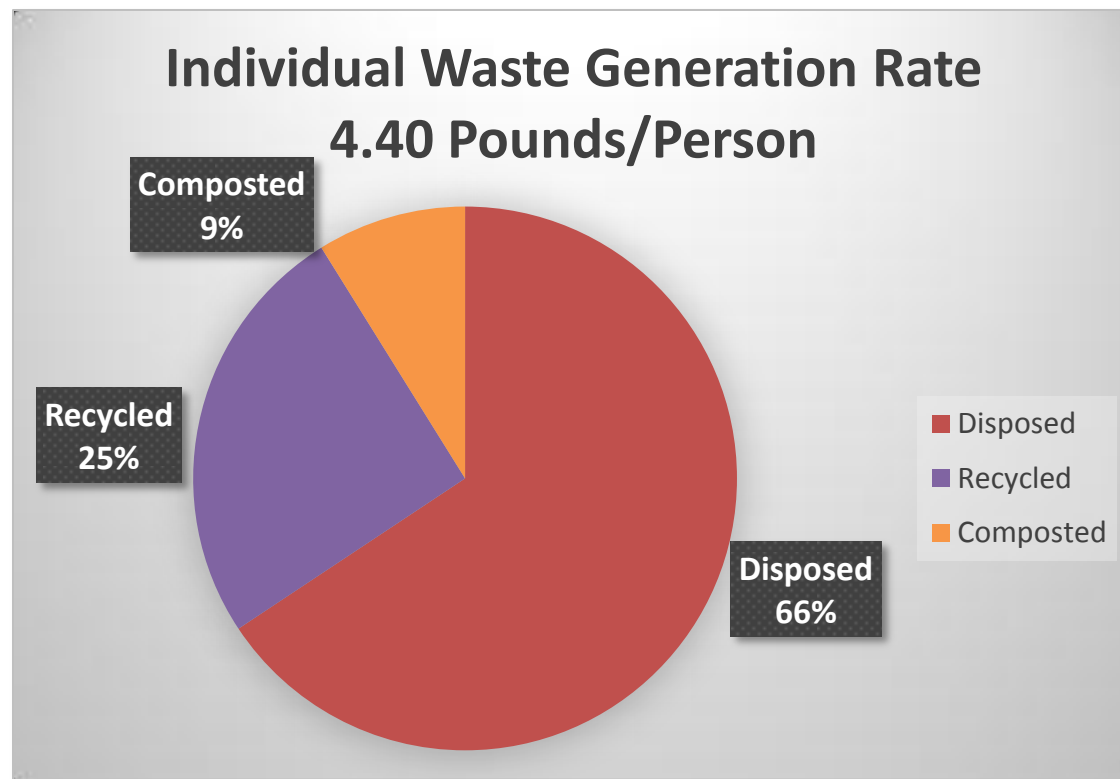




Project Background

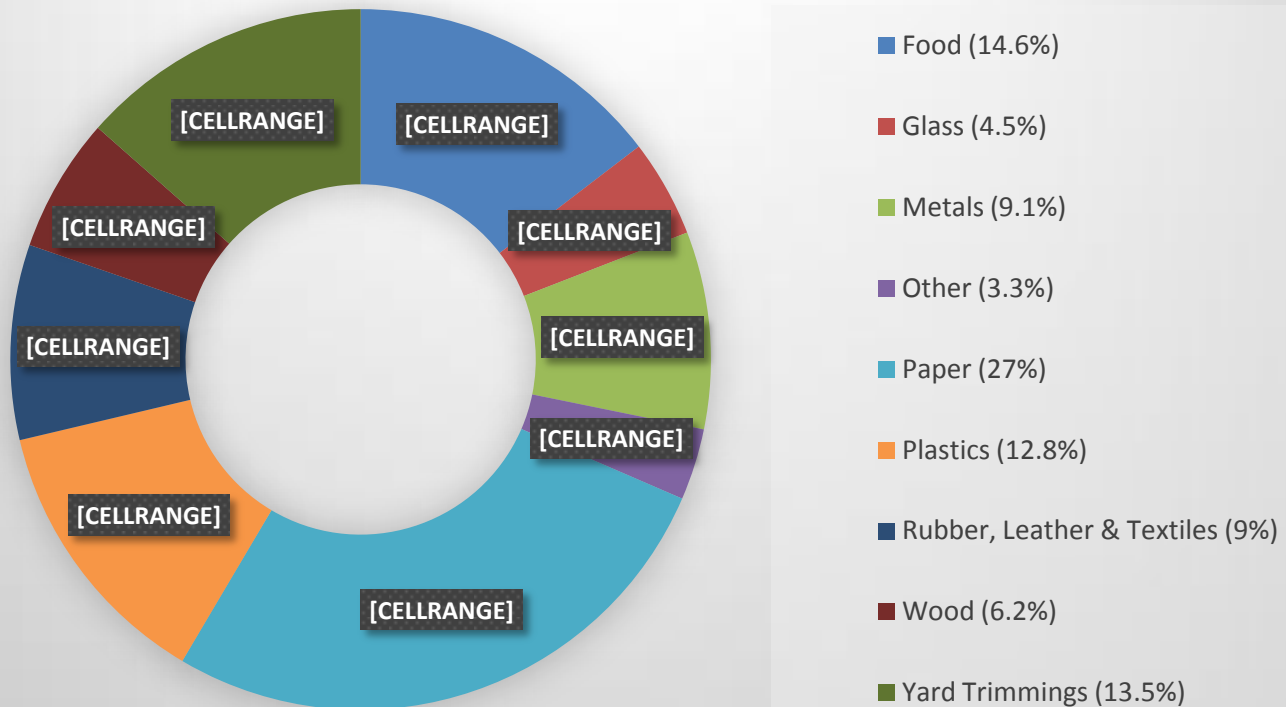
Project Background

- Americans generated 254 million tons of municipal solid waste in 2013.



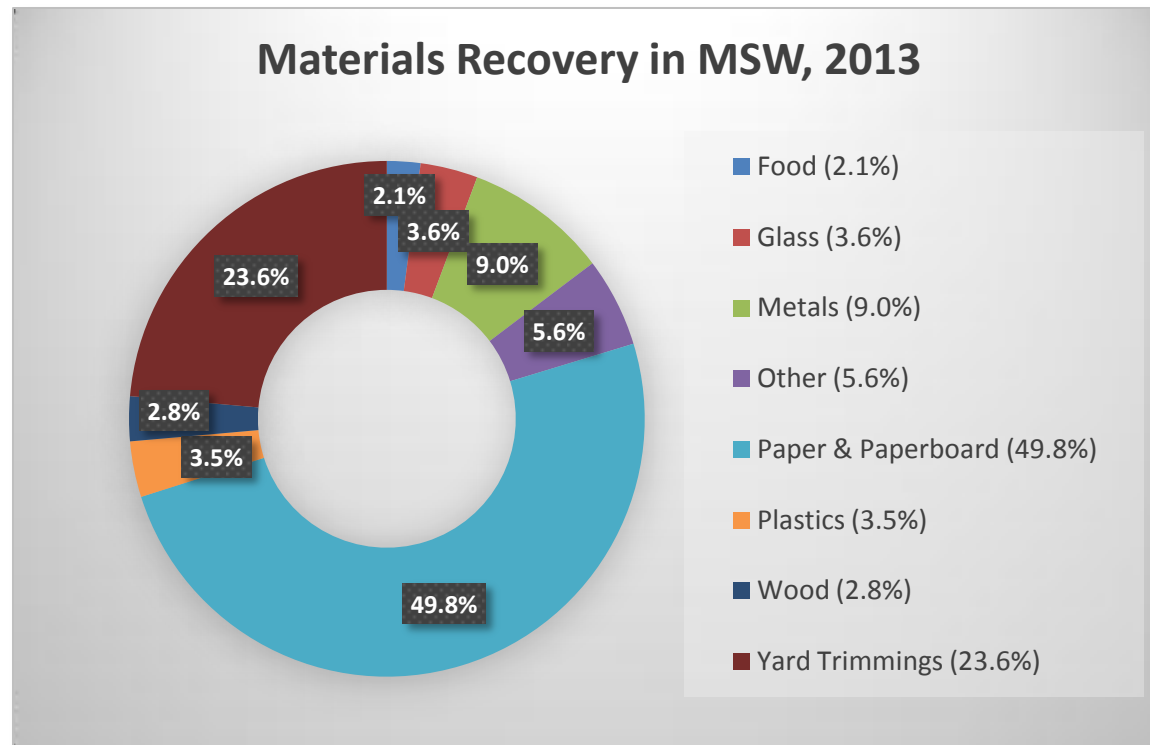
Project Background (cont.)

Materials Generation in MSW, 2013



Project Background (cont.)

- 34 percent of the 254 million tons were recovered.
- Less than five percent of food scraps generated were recovered.



1960 – 2013 *(source: EPA)*

Table ES-1. Generation, Materials Recovery, Composting, Combustion with Energy Recovery, and Discards of Municipal Solid Waste, 1960 – 2013

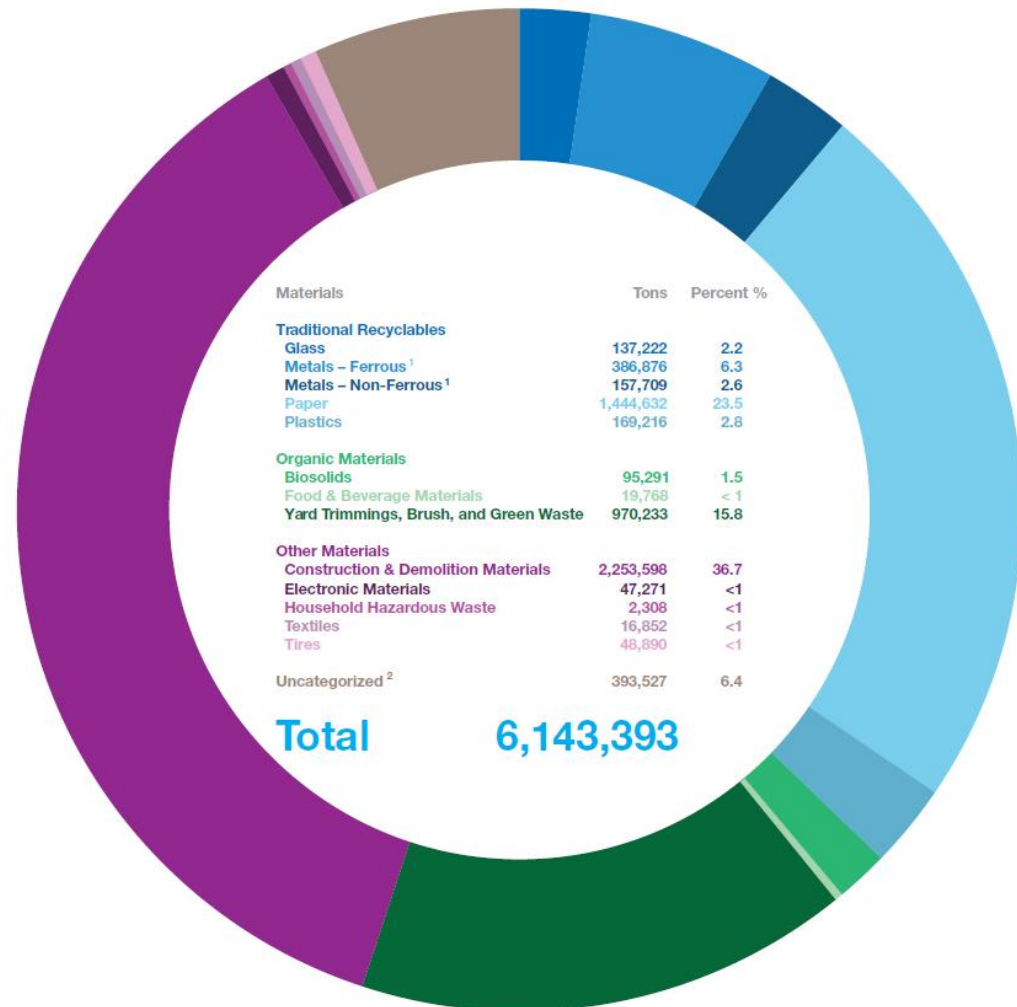
(In thousands of tons and percent of total generation)

	Thousands of Tons									
	1960	1970	1980	1990	2000	2005	2009	2011	2012	2013
Generation	88,120	121,060	151,640	208,270	243,450	253,730	244,600	250,540	251,040	254,110
Recovery for recycling	5,610	8,020	14,520	29,040	53,010	59,240	61,890	66,400	65,240	64,740
Recovery for composting*	Neg.	Neg.	Neg.	4,200	16,450	20,550	20,750	20,570	21,330	22,440
Total Materials Recovery	5,610	8,020	14,520	33,240	69,460	79,790	82,640	86,970	86,570	87,180
Discards after recovery	82,510	113,040	137,120	175,030	173,990	173,940	161,960	163,570	164,470	166,930
Combustion with energy recovery**	0	400	2,700	29,700	33,730	31,620	29,010	31,800	32,200	32,660
Discards to landfill, other disposal†	82,510	112,640	134,420	145,330	140,260	142,320	132,950	131,770	132,270	134,270
	Pounds per Person per Day									
	1960	1970	1980	1990	2000	2005	2009	2011	2012	2013
Generation	2.68	3.25	3.66	4.57	4.74	4.69	4.37	4.41	4.38	4.40
Recovery for composting*	Neg.	Neg.	Neg.	0.09	0.32	0.38	0.37	0.36	0.37	0.39
Total Materials Recovery	0.17	0.22	0.35	0.73	1.35	1.48	1.47	1.53	1.51	1.51
Discards after recovery	2.51	3.03	3.31	3.84	3.39	3.21	2.90	2.88	2.87	2.89
Combustion with energy recovery**	0.00	0.01	0.07	0.65	0.66	0.58	0.52	0.56	0.56	0.57
Discards to landfill, other disposal†	2.51	3.02	3.24	3.19	2.73	2.63	2.38	2.32	2.31	2.32
Population (thousands)	179,979	203,984	227,255	249,907	281,422	296,410	307,007	311,592	313,914	316,129

TRDI Data

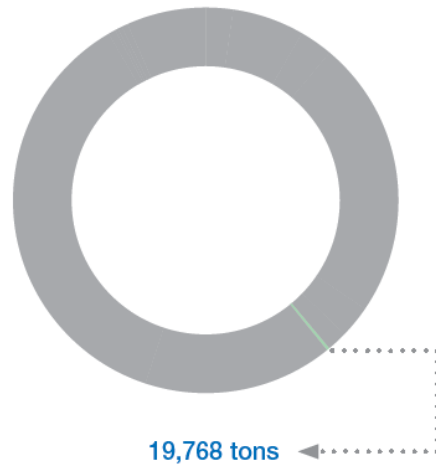
Texas Recycling Data Initiative (TRDI)

- Led by the State of Texas Alliance for Recycling (STAR)
- Collaborative effort to measure recycling in the state of Texas
- Voluntary approach to data gathering
- Confidential process
- Baseline MSW recycling rate for 2013 is 18.9 percent



TRDI Data

Food and Beverage Materials



Confidence: Strong

TRDI Survey Data: 19,768 tons

Facilities Responding: 6 compost/mulch production facilities

The Story

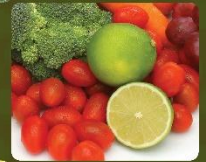
The primary method to divert discarded food and beverage materials from disposal is through composting. Select municipalities in Texas have developed curbside programs to divert food scraps generated from households. In addition, select food service establishments have developed programs to divert this material. In some cases, agricultural operations and food product manufacturers may divert pre-consumer food and beverage materials via composting. The Project Team asked that compost/mulch production facilities report this material separately in order to distinguish between MSW and non-MSW material. However, many compost/mulch production facilities were not able to separately report non-MSW materials; therefore, the total number of food and beverage materials reported above does include some non-MSW material.

The responsive facilities represent most of the key compost/mulch production facilities in Texas that compost food and beverage materials. In fact, the Project Team identified only two unresponsive facilities known to compost food and beverage material.

As previously discussed under “Biosolids,” conducting a comprehensive survey of compost/mulch production facilities in Texas is a significant challenge. There were 81 compost/mulch production facilities that did not respond to the TRDI survey. However, the Project Team expects that very few of these facilities, if any, compost food and beverage materials.

Supplemental Data: None

The Project Team relied on the TRDI survey to collect all data related to food and beverage materials and did not identify available supplemental sources of statewide data covering Texas.



Purpose of Project

Purpose of Project

- Food waste is one of the largest components of the waste stream
- Identify and analyze the challenges, opportunities, and solutions to cost effective commercial food waste collection
- How can commercial food waste diversion be implemented?
 - Voluntary
 - Collaborative

Purpose of Project (cont.)

Participation by City of Houston

- One of largest cities in the U.S.
- Population over 2.1 million
- Desire to more cost effectively divert food waste from commercial establishments

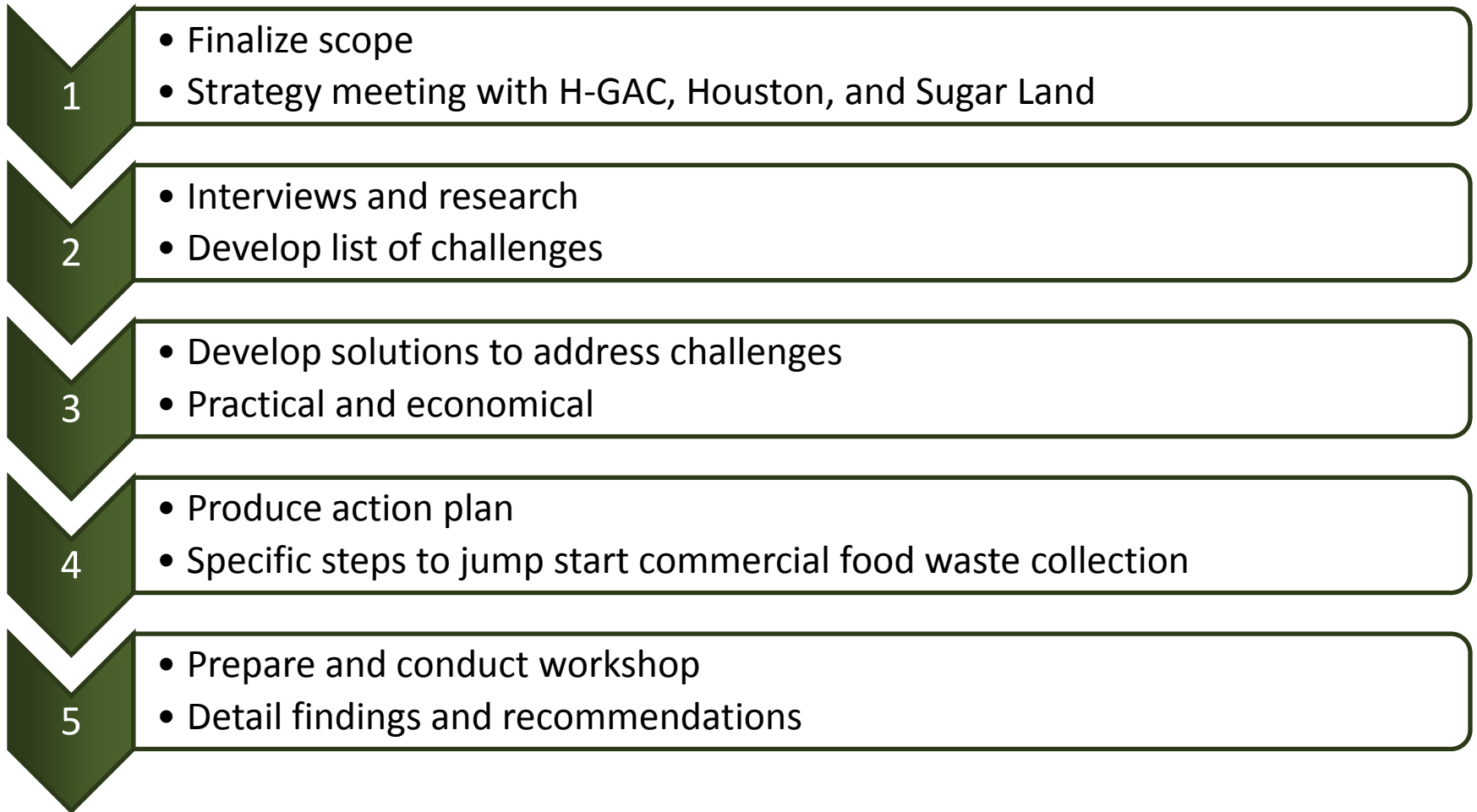


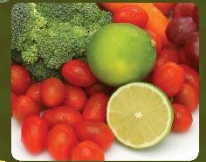
Participation by City of Sugar Land

- Rapidly growing suburb
- 25 miles southwest of Houston
- Population of 85,000
- Continued growth increases need for economical food waste diversion



Scope of Analysis



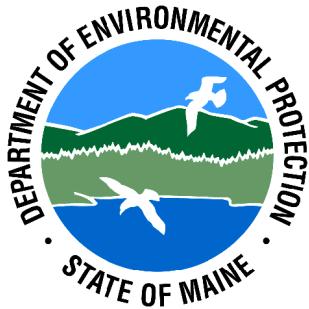


Research

Research – States

The Project Team conducted a thorough and exhaustive research of statewide initiatives regarding food waste collection in the United States.

State Programs



Research – Municipalities

The Project Team conducted a thorough and exhaustive research of current successful commercial food waste collection programs in select cities across the United States.

City Programs



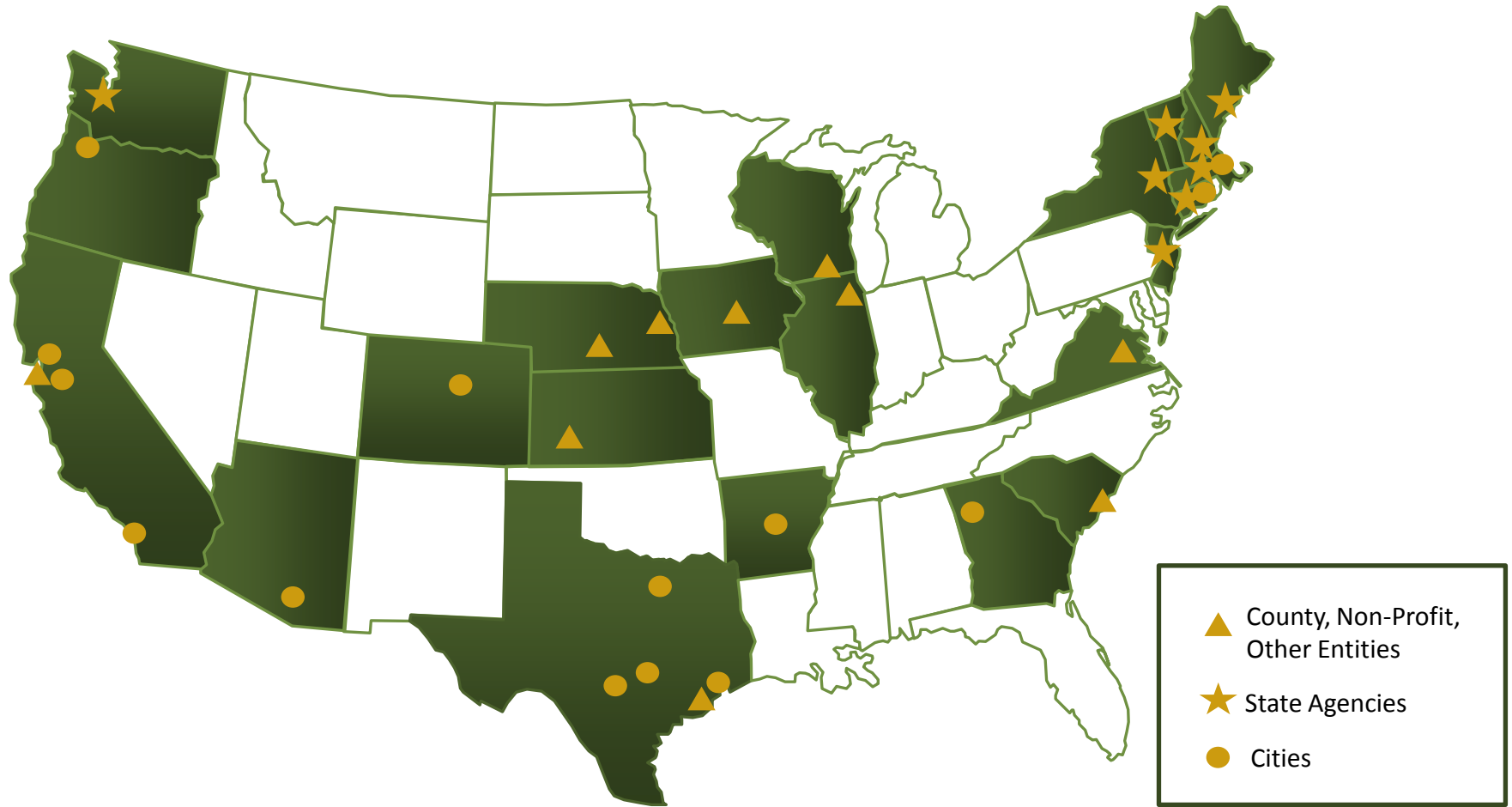
Research – Other Entities

The Project Team conducted a thorough and exhaustive research of current successful commercial food waste initiatives within the United States.

Other Entities



Food Waste Research Map – Entities Researched



Research (cont.)

Massachusetts

- <10 percent of food waste is currently being diverted
- Solid waste master plan goal: to divert at least 35 percent of source separated organics from landfills by 2020
- Tasks to meet master plan objectives include:
 - Increased Composting Capacity
 - Regulations
 - Route Density
 - End Markets



Research (cont.)

New Hampshire

- Current rules are a barrier for successful food waste diversion
- State offers two types of composting permits
 - **Permit-by-Notification:** <30 tons per day. Does not allow the processing of meat or dairy products.
 - **Standard Permit:** >30 tons per day. Allows the processing meat and dairy.



Research (cont.)

Vermont

- Most aggressive ban on organics
- Phased approach
 - Recyclables by July 1, 2015
 - Leaf, yard debris, and clean wood by July 1, 2016
 - Food scraps (in phases) by 2020



Year	Tons/Week
2014	>2
2015	>1
2016	>1/2
2017	>1/3
2020	>0

Research (cont.)

Vermont (cont.)

- Materials Management Map
 - Connects haulers, generators, and composters

UNIVERSAL RECYCLING
Materials Management Map

Street Map

Welcome to the
**Universal Recycling
Materials Management Map.**

This map was developed to connect residents, businesses, and institutions with solid waste services; and to connect haulers, composters, and food rescue agencies to sources of food and food scraps. The goal is to reduce waste and save natural resources.

Here you will find facilities that accept various materials for food rescue, recycling, composting, and disposal, such as food shelves, transfer stations and composters. As you zoom in closer, you will find businesses and institutions (such as restaurants, grocery stores, markets, hospitals, schools, food manufacturers, assisted living facilities, correctional facilities, and more) with the estimated tons of food scraps they might generate. Zooming in will also reveal local food shelves where quality food can be donated for people in need. You can map and find your local solid waste management entity by clicking on the box in the map layers section.

This map is being launched initially with a focus on organics management (edible food, food scraps and leaf/yard debris). As a result, transfer stations and recycling centers were only mapped if they accepted leaf and yard debris and/or food scraps. Food shelves are also included if they accept either prepared or perishable foods to feed Vermonters in need. In the future the map will include all solid waste facilities in the state.

For an overview of the map tools and functions, click the **Map Guide** button below.

Research (cont.)



City of Plano (TX)

- Grant funded program in 2000
- Peaked in 2006 with 120 stops
- Removed schools and businesses due to contamination – only 10 percent decrease
- City collects and transports to the City's compost site (NTMWD Landfill)
- Material marketed as Texas Pure Products



Research (cont.)

City of Atlanta (GA)

- Four Zero Waste Zones
 - Downtown Atlanta
 - Midtown Atlanta
 - Hartsfield-Jackson Atlanta International Airport
 - Buckhead
- Goal of diverting the maximum amount of recyclable items and organic matter from landfills
- Zero Waste Zone participants pledge to implement and maintain certain criteria



Research (cont.)

City of Portland (OR)

- Goal to increase recycling rate to 75 percent by 2015
- To assist, City created *Sustainability at Work* department.
 - Offers a listing of over 40 permitted commercial haulers
 - Assists Portland businesses advance green initiatives in the workplace



Research (cont.)

Fork it Over! (OR)

- Created by Portland Metro Department in 2004, now managed by Portland State University
- Promotes connections between food rescue agencies and food generating businesses.
- “Match + Find” feature
 - Allows entities to select various food types
 - Supplies a listing of food rescue agencies



Research (cont.)

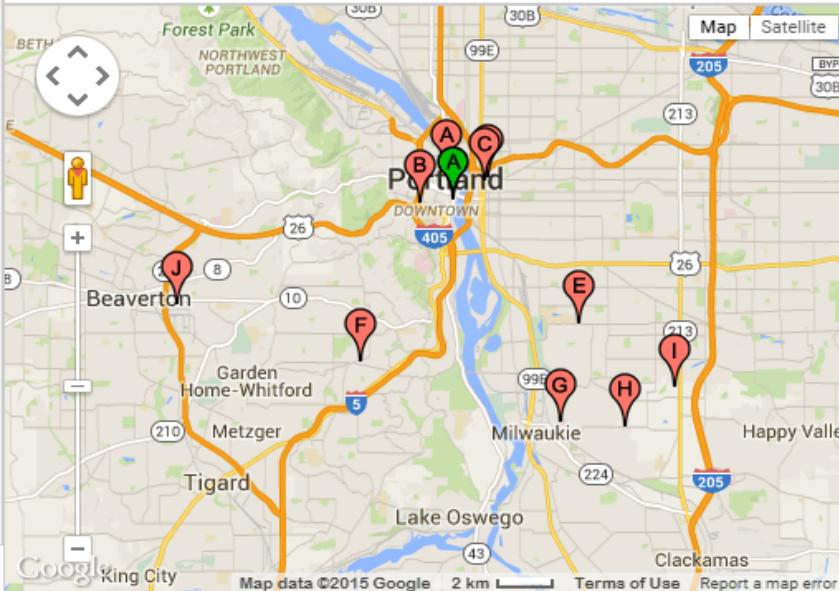
Match + Find

Always call ahead to confirm hours of operation, acceptable food types, and available services.

Match and Find | **Select and Contact**

- A** [Central City Concern](#)
232 NW 6th Ave
Portland, OR 97209
[Website](#)
- B** [New Avenues for Youth](#)
1220 SW Columbia St
Portland, OR 97201
[Website](#)
- C** [Urban Gleaners](#)
15 SE 6th Ave
Portland, OR 97214
[Website](#)
- D** [Janus Youth Programs](#)
707 NE Couch
Portland, OR 97232
[Website](#)
- E** [All Saints Episcopal Church - Hot Meals](#)
4033 SE Woodstock
Portland, OR 97206
[Website](#)
- F** [Neighborhood House, Inc. Emergency Food](#)

- Bulk food items
- Commercially baked goods
- Dessert & sweets
- Fresh produce
- Meats (USDA-inspected)
- Canned & packaged items
- Dairy products & eggs
- Entrees & prepared items
- Frozen goods



1 2

Research (cont.)

Onondaga County Resource Recovery Agency (NY)

- Non-profit waste management organization that manages waste for 33 of 35 municipalities in the county. Facility opened in 1994 to compost yard trimmings and initiated a food waste pilot program in 2008. The facility was redesigned and retrofitted in 2013 to better handle large amounts of food waste.
- 44 businesses and institutions participate in the food waste program. The facility is permitted for 9,600 tons/year of food waste and 48,000 cy/year of yard trimmings.



Research (cont.)

Charleston County (SC)

- Largest compost producer in the state, and one of the largest on East Coast
- Program was initiated as a pilot in 2010. In 2012, the county received a permit to process food waste; the facility processes approximately 59,000 tons per year of material



Charleston County's Bees Ferry Compost Facility

Research (cont.)

Hilton Americas-Houston

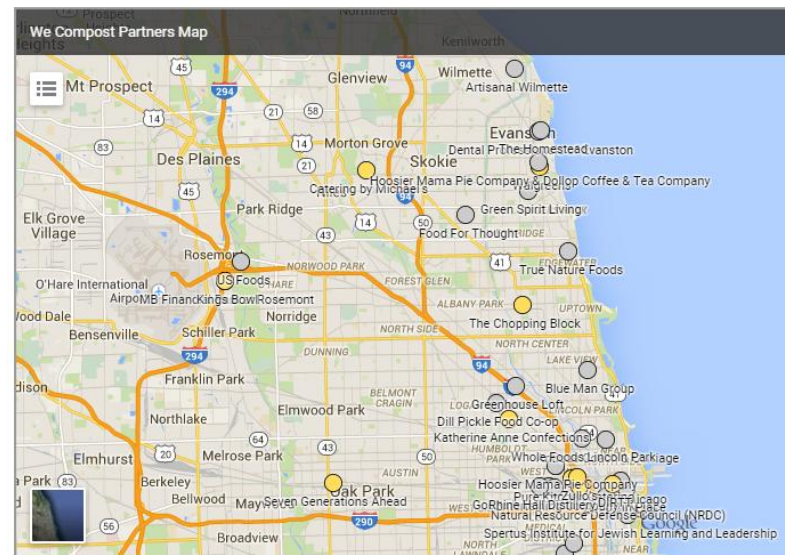
- Connected to George R. Brown Convention Center
- Green Seal – Silver Level
- Started food composting in 2008
- Just started 60-day beta test



Research (cont.)

Illinois Food Scrap Coalition

- Includes approximately 150 organizational and individual members who encourage food scrap composting across the state. Assists in developing contracts for universities, hospitals, grocery stores, schools, etc.
- Vast resources such as:
 - Spotlights
 - EATS (A How To Guide)
 - FAQs

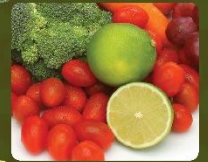


Research (cont.)

Ample Harvest (NJ)

- 501(c) charitable organization
- Started in 2009
- Internet resources to enable food pantries to accept excess harvest from local growers.





Interviews

Project Interviews

The project team conducted over 25 interviews with cities, generators, processors, and haulers located in the H-GAC area.

Generators	Haulers	Processors	Other
El Tiempo (Restaurant)	Waste Management	New Earth	City of Houston
Radical Eats (Restaurant)	Liquid Environmental Solutions	Living Earth	City of Sugar Land
Ruggles Green (Restaurant)	Nexus Disposal, LLC	Nature's Way	Pat Greer, Chef and Ecology Host
University of Houston, Sustainability Dept.	Little Joy Recycling	Waste Management	SMART Recycling of South Carolina, LLC
Whole Foods, Sustainability Dept.	Tap, Inc.		Texas Restaurant Association
Sysco	City of Tucson		Greater Houston Restaurant Association
Hilton Americas - Houston	City of Plano		Feeding America
			Houston Food Bank

Interview Questions

Generator Questions

- How much and what types of waste does your business generate?
- Do you currently separate materials for recycling and/or food waste diversion?
- Are you open to other collection options for your current services?
- Do you believe your business would be able to decrease its current trash services through a food waste diversion program?
- What would discourage you from establishing a food waste diversion program?



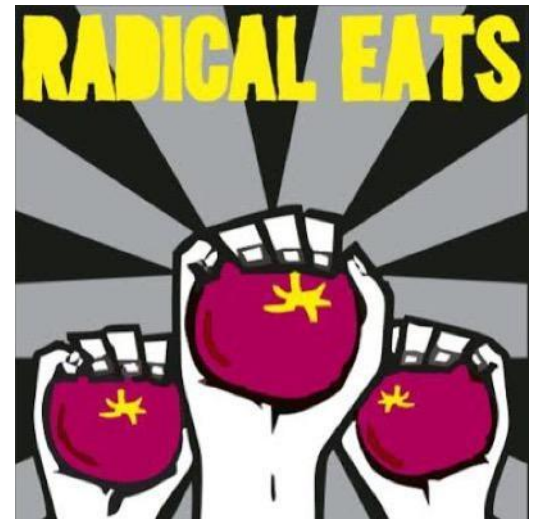
Ruggles Green

- Houston's 1st certified green restaurant
 - Awarded a 4-star certification from the green restaurant association
- Restaurant currently separates pre-consumer food waste in 6-10 gallon containers
- Created a local network with farmers who retrieve food waste once per week for composting
- Noted educational barriers, liabilities, and higher contamination rates associated with food composting



Radical Eats

- Provides locally sourced cuisine in the Montrose corridor of Houston
- Currently uses private trash and recycling services
- Restaurant does not currently generate much pre-consumer food waste, however would be interested in participating in a local program if one were available
- Diverts excess edible food to local women's shelters
- Owner is familiar with restaurants and associations in the area who may be interested in participating in a food waste program



*Restaurant is closed as of
May 24, 2015*

Texas Restaurant Association (TRA) & Greater Houston Restaurant Association (GHRA)

- Associations were initially formed to assist the State and City address health code issues
- Restaurant industry trends are focused on sustainability, locally sourced cuisine, and food packaging
- GHRA was instrumental in providing NewGen with a list of restaurant contacts in the Houston area
- The following issues were cited as major obstacles in establishing a food waste program:
 - Restaurants operate on narrow profit margins
 - Complying with health code regulations
 - Inherent opposition to more oversight and paperwork



Interview Questions

Collector Questions

- Do you have any experience collecting food waste?
- What is your interest in food collection?
- What concerns would you have about adding food waste collection as a service?
- Where would the food waste be diverted?
- What barriers do you anticipate with the implementation of a food waste collection program?



Liquid Environmental Solutions (LES)

- Recycles the following forms of liquid and environmental waste:
 - Grease traps, cooking oil, food waste, grit traps, wastewaters, liquefied food waste
- Typically services large food manufacturers, grocery stores, and college institutions
- Utilizes a food liquefying system that is installed onsite for LES' customers
- All types of food can be easily disposed of into this system as it reduces 10 lbs. of food into a 1 gallon container



Nexus Disposal, LLC

- Mid-sized collection company located in the City of Houston
- Operates front-load collection and roll-off container trucks
- Provides food waste collection services on a limited basis
- A lack of route density is the primary collection challenge for the company
- Interested in collecting more food waste if route density issue could be resolved



Little Joy Recycling

- Operates a small scale recycling collection operation
- Developed a niche recycling service designed to meet company specific needs
- Currently collects mixed glass, mixed paper, all plastics, cardboard, metal, aluminum, and all electronics.
- Company would consider expanding into the commercial food waste collection business if enough interest and commitment is generated from the community



Interview Questions

Processor Questions

- What tier of regulatory authorization do you operate under?
- Do you have any experience processing food residuals?
- Are you operating at site capacity?
- Where would the food waste be diverted?
- What barriers do you anticipate with the implementation of a food waste collection program?



New Earth

- Currently operates a registration-tier site in Conroe, TX
 - Accepts vegetative material, biosolids, and food residuals
 - Processes food residuals from large food manufacturers (up to three roll-off containers a week) and emulsified feedstocks from the Houston Food Bank
 - Facility can accept an additional 400 tons of food residuals per week
- A notification-tier and registration-tier site is underway near Katy, TX
 - Facility will accept food waste, various feedstocks, and biosolids
 - Facility will be able to accept up to 800 tons of food residuals per week



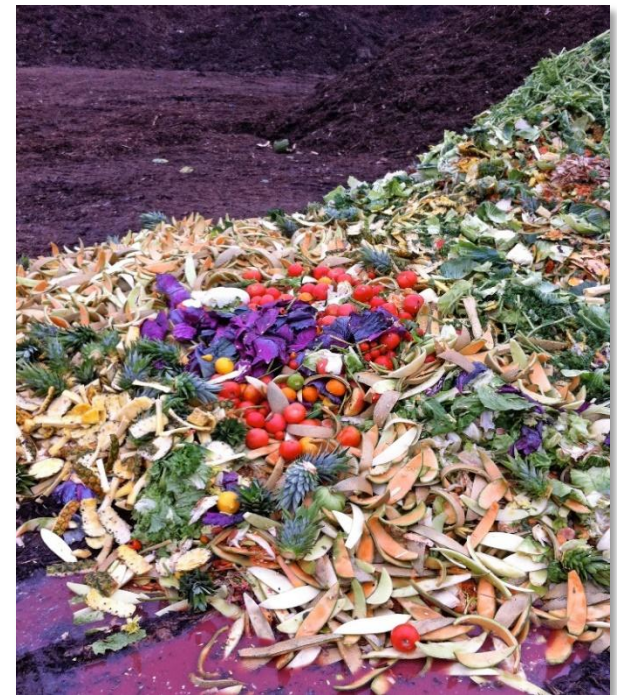
Nature's Way Resources

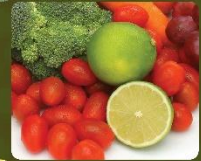
- Currently operates a facility in Conroe, TX under a notification-tier, with special authorization to accept food residuals
 - Accepts meat and animal products, dairy tank wash-down and beverages, and other feedstocks
- The active composting process is located on approximately 26 acres and employs static-pile processing
- Presently accepts some material from “Produce Row” and management would be interested in the potential of expanding services to also accept food residuals from the Exxon campus being developed in the Woodlands



Living Earth (LETCO)

- Operates 11 mulch and compost sites in the Houston area
 - All sites are currently exempt-tier facilities and process vegetative feedstocks using static pile techniques
 - LETCO will consider upgrading selected facilities to notification-tier on a case-by-case basis
- Cutten Road is the largest LETCO facility and processes pre-consumer vegetative food residuals
- Cutten Road and Iowa Colony facilities are the most conducive to expansion
- The Beltway 8 facility currently processes about 3 loads of food residuals per day, mostly from “Produce Row”
- LETCO does not currently accept liquid wastes

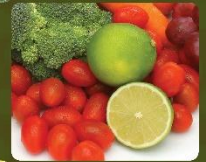




Processing Panel
11:30 AM – NOON



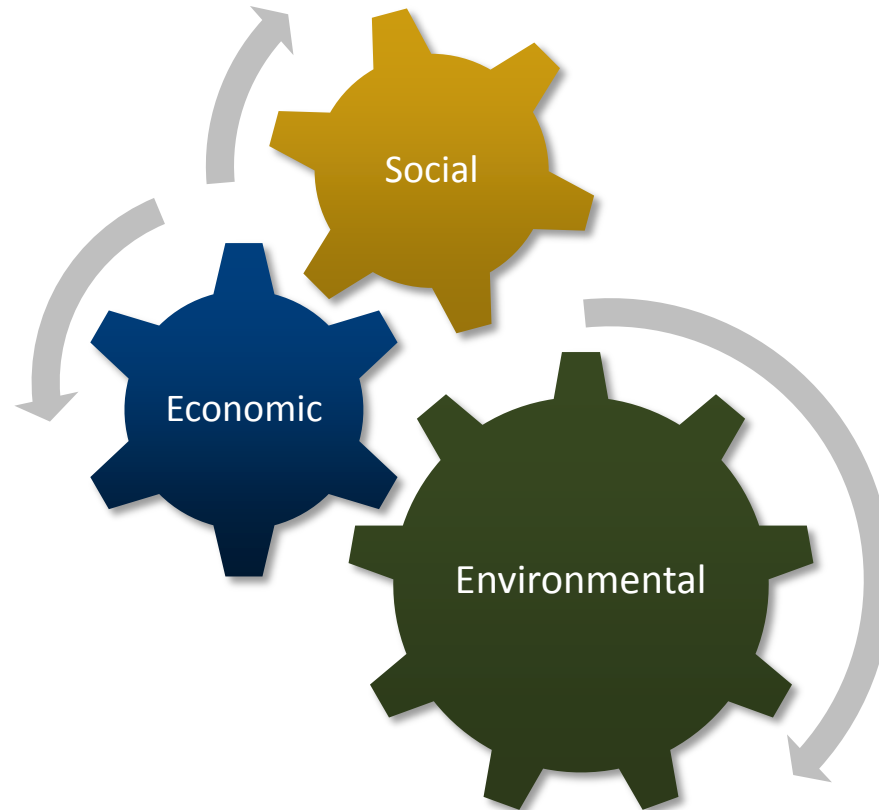
**LIVING
EARTH**



Findings

1. Benefits

Benefits of diverting food waste from landfills are innumerable.





Food Recovery Hierarchy

Most Preferred

Source Reduction

Reduce the volume of surplus food generated

Feed Hungry People

Donate extra food to food banks, soup kitchens and shelters

Feed Animals

Divert food scraps to animal feed

Industrial Uses

Provide waste oils for rendering and fuel conversion and food scraps for digestion to recover energy

Composting

Create a nutrient-rich soil amendment

Landfill/ Incineration

Last resort to disposal

Least Preferred

2. Excess Capacity

H-GAC area compost processors have significant excess capacity to accept additional food waste.

The estimated excess capacity and new capacity in the H-GAC region should be 85,000 to 95,000 tons per year of food waste.

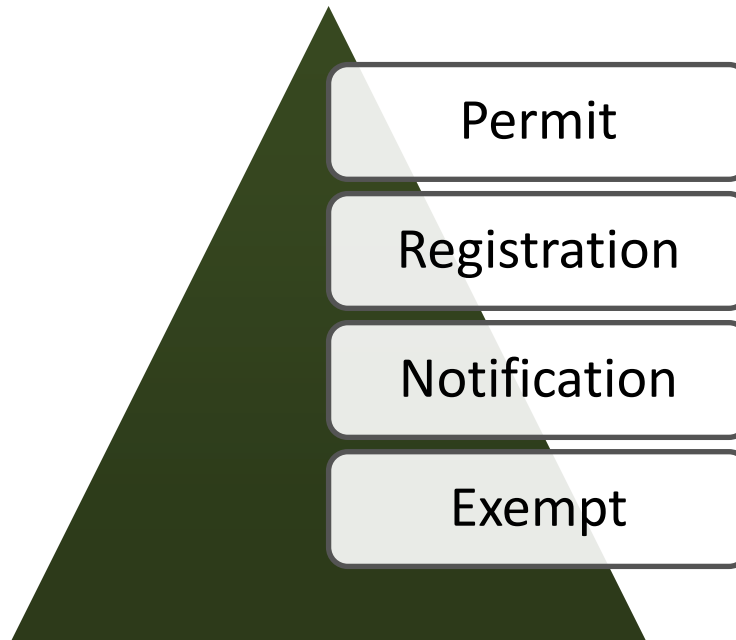
3. Current Activity

Some grocery stores and commercial food processors in the H-GAC region are currently active in food waste diversion.



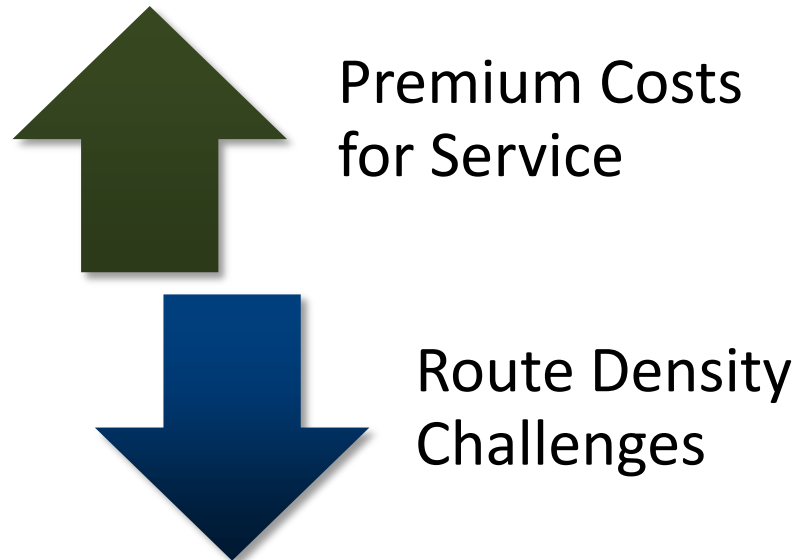
4. TCEQ Regulations

Increased awareness and education regarding TAC Title 30, Chapter 332, which outlines the requirements for composting, is important.



5. Lack of Collection Companies

One of the biggest barriers to a more active commercial food waste program is the lack of food waste collection companies in the H-GAC region.



6. Building Layouts

Building designs/layouts present challenges for food waste collection containers.



7. Pre-consumer Food Waste

Restaurants are not typically large generators of pre-consumer food waste.



8. Contamination

Most compost processors are hesitant to accept post-consumer food waste due to contamination issues.



9. Dedication to Sustainability

Many businesses who already participate in a food waste program do so because of their dedication to sustainable practices.

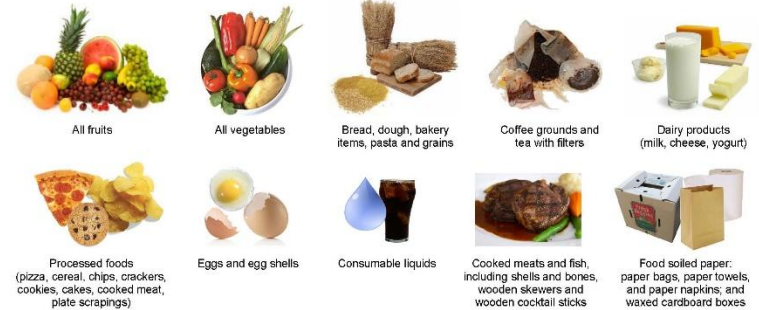


10. On-going Education

Successful commercial food waste collection programs require on-going education.



ACCEPTABLE FOOD WASTE MATERIALS



ITEMS NOT ACCEPTED



Accepted vs. Not Accepted Food Waste Flyer.pdf

Charleston County Environmental Management

Keep Good Food Out of Your Garbage Pail and Kitchen Sink
Don't Feed High-Priced Human Food to Hogs or Chickens

WASTE NO FOOD!

HOUSEHOLD WASTE ABOUT 700 MILLION DOLLARS

"For partial immediate relief, every individual and community should consider earnestly the matter of food conservation and the limitation of waste. As a nation we seem to have a disinclination to economize. In many homes there is a strong feeling that it is 'only decent' to provide more food than will be eaten and that it is demeaning to reckon closely. The experts of the Department of Agriculture report to me that the dietary studies made by them point to an annual food waste of about \$700,000,000. Of course, the waste in families of very limited means is slight, but in the families of moderate

and ample means the waste is considerable. Even if the estimate were reduced by half, the waste would still be enormous.

"The food waste in the household, the experts assert, results in large measure from bad preparation and bad cooking, from improper care and handling, and, in well-to-do families, from serving an undue number of courses and an over-abundant supply and failing to save and utilize the food not consumed. As an instance of improper handling, it is discovered that in the preparation of potatoes 20 per cent of the edible portion in many cases is discarded."—Secretary of Agriculture, March 1, 1917.

FOOD IS WASTED

When anything edible is allowed to go to the garbage pail or allowed to spoil for lack of proper handling

FOOD IS WASTED

When too much is served at a meal. Uneaten portions are left on the plate and later thrown into the garbage pail. Learn to know the needs of your family and serve each no more than you think he will want.

When too much is prepared for a meal. Unserved portions are likely to be thrown into the garbage pail or allowed to spoil. Many housekeepers do not know how to use left-over foods to make appetizing dishes.

FOOD IS WASTED

When burned or spoiled in cooking. Improperly prepared or poorly seasoned food will be left on the table and probably wasted. Buy food wisely and then prepare it carefully.

When handled carelessly. Buy clean food, keep it clean until used, and be neat in all details of cooking and serving. This lessens waste and is a valuable health measure as well.

FOOD IS WASTED

When we eat more than our bodies need for growth and repair and to supply energy for our work

Overeating tends to poor health and fat instead of brawn, makes us sluggish and indolent instead of energetic and resourceful. Eat enough and no more. Eat for physical and mental efficiency.



DEMONSTRATE THRIFT IN YOUR HOME
MAKE SAVING, RATHER THAN SPENDING, YOUR SOCIAL STANDARD



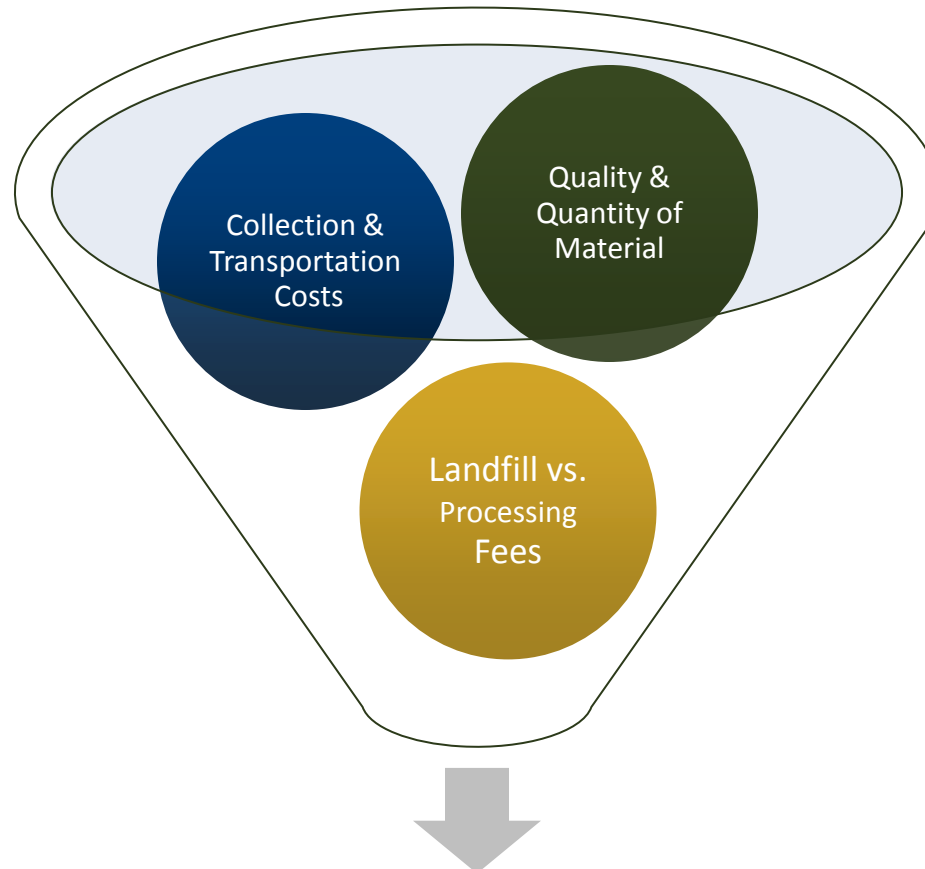
Begin to save to-day. For practical advice on how to feed your family efficiently and make the most of the food you buy or raise write to-day to your State Agricultural College, to your county agent, or to the

U. S. DEPARTMENT OF AGRICULTURE
WASHINGTON, D. C.

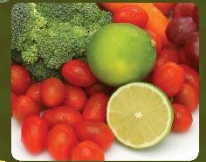
U.S. Department of Agriculture Poster – 1917

(source: National Agriculture Library)

11. Three Primary Factors



Successful Food Waste Diversion Program



Whole Foods
1:30 PM – 1:50 PM

**WHOLE
FOODS**
MARKET



Southwest Region: Texas, Oklahoma, Arkansas, Louisiana.



Our Core Values

What's truly important to us as an organization

1. We Sell the Highest Quality Natural and Organic Products Available
2. We Satisfy, Delight and Nourish Our Customers
3. We Support Team Member Excellence and Happiness
4. We Create Wealth Through Profits and Growth
5. We Serve and Support Our Local and Global Communities
- 6. We Practice and Advance Environmental Stewardship**
7. We Create Ongoing Win-Win Partnerships with Our Suppliers
8. We Promote the Health of Our Stakeholders Through Healthy Eating Education



The **Green Mission Team** was created to focus on our **Environmental Stewardship** Core Value.

Over the years the **Green Mission Team** has expanded into many areas, including:

1. **Energy efficiency**
2. Alternative Energy
3. Packaging
4. **Construction**
5. Community clean ups
6. **Transportation**
7. **Zero Waste**

The Green Mission team has grown to include **members from every level of the company.**



Energy Efficiency

Construction

Transportation

Zero Waste

In existing stores, with energy retrofits and behavioral changes, **we've reduced our kWh usage by an estimated 185 million kilo-watt hours**. Since most of our electricity is generated by burning fossil fuels, this means we've:



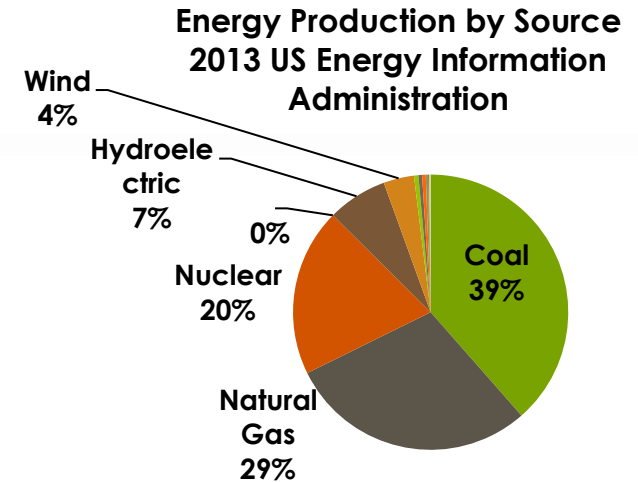
Reduced our CO2 emissions by 130,571 tons



That's like taking 27,202 cars off the road for a year!



That's equivalent to the energy used to run 15,098 homes for a year



This only in **existing store retrofits**, not including new stores. **New stores are typically 20-40% more efficient than stores built just 5 years ago.**

Energy Efficiency

Construction

Transportation

Zero Waste



SAVING ENERGY
BY EDUCATION AND DESIGN

WHOLE FOODS MARKET WOODLANDS

ONE OF THE LATEST ADDITIONS TO THE HOUSTON AREA MARKET



High efficiency, low flow plumbing fixtures are integrated throughout the store, contributing to a significant reduction in our overall indoor potable water usage.

WATER CONSERVATION

Indoor and Outdoor Water Efficiency

RECLAIMED MATERIALS

A **majority of the materials installed throughout our store were reclaimed** from old buildings, barns, and rural structures, including:

- **Brick** – The brick veneer **used at the bar** is cut from **reclaimed St. Louis Red bricks**.
- **Oak Wood** – The Oak wood that is used **throughout the store** is a combination of **reclaimed antique Red Oak and locally sourced Texas Post Oak**.
- **Route 66 Truck Deck Wood** – **The dark wood at the bar** is **reclaimed from the truck decks of tractor-trailers**. These trucks traveled Route 66 transporting goods across the country



LOW VOC

Low-Emitting Materials - 100% of all paint, adhesives, and sealants used throughout the store are low in VOC's (volatile organic compounds). To varying degrees, VOC's contribute to the depletion of the ozone layer and can create adverse health effects in humans



NATIVE LANDSCAPING

All new stores in the Southwest Region have native landscaping.



ELECTRIC VEHICLE CHARGING STATIONS

By ChargePoint

Our store has four
Electric Vehicle
Charging Stations for
use by our guests
and Team Members.





REFRIGERATION

- **Night curtains** on multi-decks provide roughly 50% energy savings.
- **LED lights** are used in most cases.
- **High efficiency fan motors** are used in every case and walk-in
- A loop piping design was used for the DX low and medium temperature refrigerant piping to **minimize the total refrigerant charge** in the system.
- The refrigerant used in the system, **R-407a**, has an Ozone Depletion Potential of zero (0) and is more energy efficient for low and medium temperature operation than other comparable refrigerants that could have been used.
- **Anti-sweat controls** on doored cases.

ENERGY EFFICIENCY

- **Electricity usage monitoring** is used to identify energy wasting behavior, potential equipment damage, and plan for more efficient systems in future stores.
- **Automatic lighting controls, occupancy sensors**
- Daylight harvesting.
- **Energy efficient LED** installed throughout much of the store further reduce the energy consumption of the electric lighting system.



ORGANIC

As the **first nationally certified organic grocer in the US**, we offer you the biggest and best choice we possibly can because it's an important part — perhaps the most important part — of our commitment to you and the planet.

Choosing organic supports farmers and producers who believe in good health, quality foods and earth-friendly sustainable agricultural practices. And that's good for everyone, from the farm worker to the planet to your family — and future generations too.



- We make sure whenever possible that the **trucks are full both ways** – by backhauling OCC Cardboard bales, stretch plastic bags, Seafood containers, pallets, #5 recyclables, Corks, etc.
- We also **buy from local vendors** when possible, to reduce transportation miles for our products.
- **Biodiesel** — We are gradually converting our truck fleet to biodiesel fuels
- Our fleet is also being fitted with **aerodynamic aprons**.
- By keeping speeds down, the trucks run more efficiently – all of our trucks are kept at **55 MPH**
- These trucks also use a fuel-saving (and emissions-cutting) system that allows the engine to be **turned off completely at loading and delivery**, rather than remain idling.



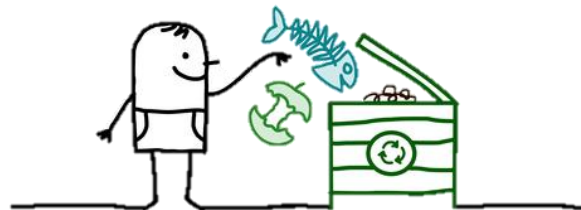
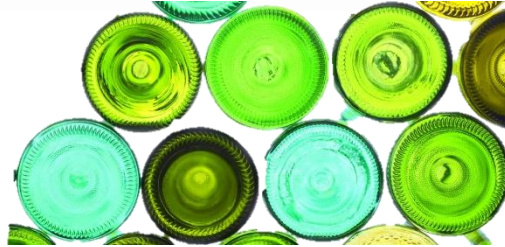
Energy Efficiency

Construction

Transportation

Zero Waste

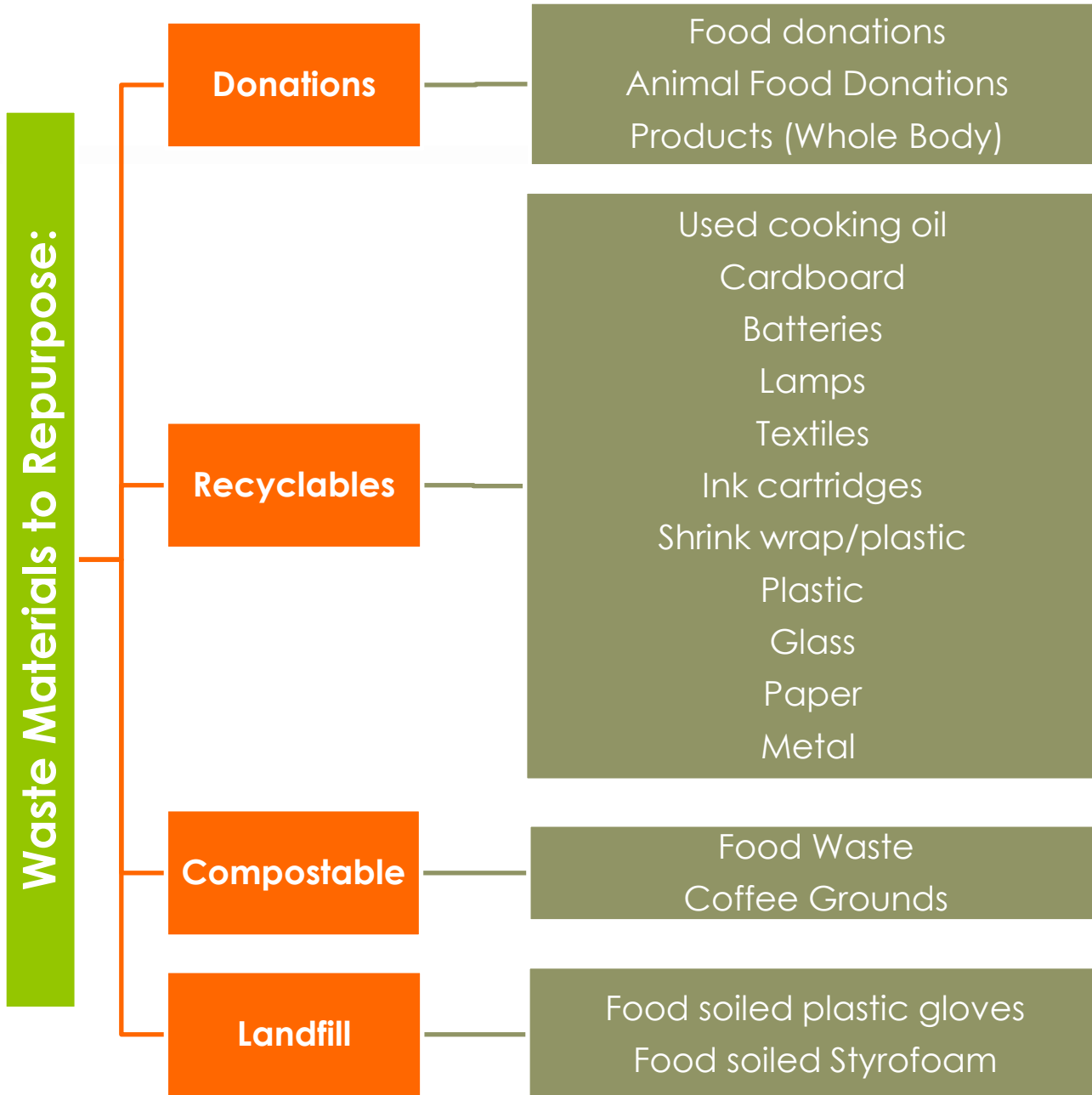
ZERO WASTE GOAL



STARTING OUR PROGRAM

- We began by **conducting waste audits**, determining what kind of wastes we are generating.
- Then we began **finding outlets to repurpose, reuse, and recycle** as many categories of waste as we could.
- **Team Members at all of our stores began looking to partner with local organizations** to repurpose our materials. We work with Food Banks, Zoos, and community organizations to repurpose materials that would otherwise be wasted.
- We are working to **educate** our Team Members and guests with store events, store Team Member trainings, and signage.
- We are currently working on **reporting**. Currently, we are looking into working with the US Zero Waste Business Council to certify our stores Zero Waste. Reporting is an ongoing challenge for us, but it is the next step in monitoring our progress and improving our diversion rate.

WHAT ARE WE GENERATING?



STRATEGY

- Have a diversion plan in place for all waste materials
- Make it easy for TM's to use—have a place for every thing.
- Get Team Members excited!

RECYCLING STATIONS:



Many Regions (North Atlantic, pictured here) also invite customers to bring in recyclables, including light bulbs, cell phones, batteries, etc.



Donate

Recycle

Compost

Looking for
Options



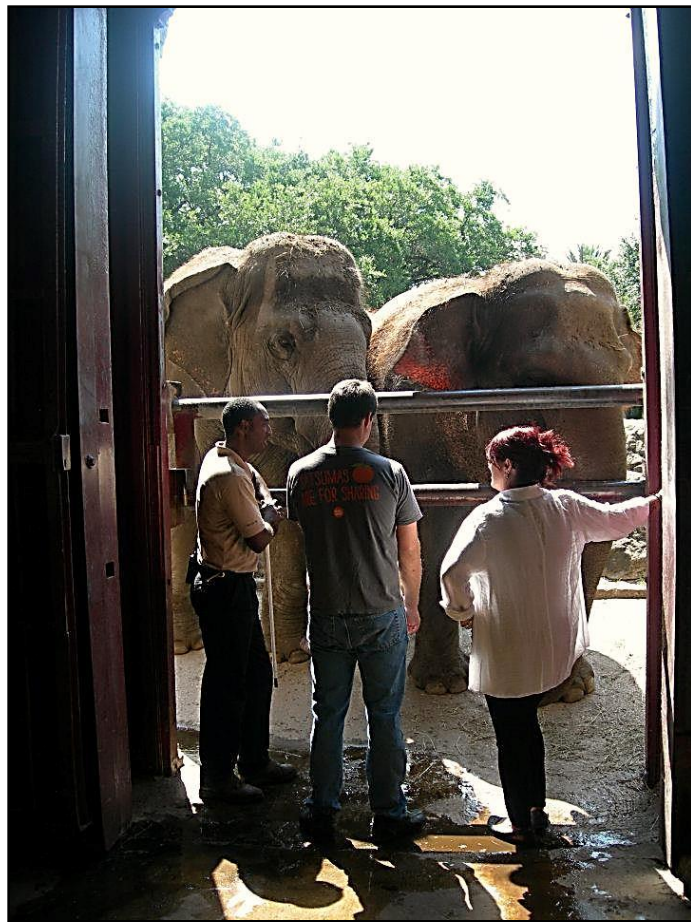
Donations

Product/food that we are removing from the shelves is donated to local food banks, shelters, and other non profit organizations.



Animal food donations create fun for the whole family... The primate family.

Whole Foods Market **Vineyard** donates bulk nuts and fruits to the **Born Free Primate Sanctuary in San Antonio**. They hide the nuts inside these cardboard tubes for a fun, problem solving game.



ARABELLA STATION LOVES ELEPHANTS

Whole Foods Market **Arabella Station in New Orleans** donates **fruit to their local zoo**. One elephant hides oranges and goes back to get them after her buddies have wandered off in search of their next adventure.



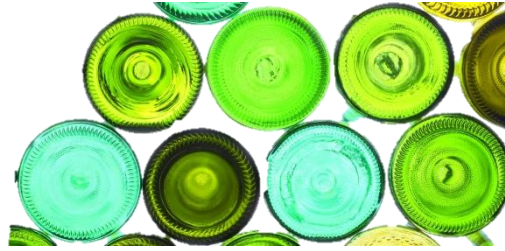
Whole Foods Market Baton Rouge **donates compost to local pig farmers.**

Donate

Recycle

Compost

Looking for
Options



All stores have a comingled recycling program where this service is available.

Plastics

Many stores in the Southwest Region separate out plastics and send them to the Southwest Distribution Center.



Tetra - Paks

Many stores in the Southwest Region partner with Break It Down, a local recycling company.



Many stores **recycle their textiles** (uniforms, aprons) with **American Textile Recycling Services**



ATRS
American Textile Recycling Services
Your Neighborhood Recycler

Home About Testimonials Services Blog Press Contact

Recycle your clothes, shoes, toys and household items.

We make recycling your clothing, shoes and toys convenient 24/7/365. We believe recycling should be easily accessible to all. That is why we have placed over 3900 recyclers in neighborhoods across the United States.

Your charitable donations are tax-deductible

[Click here](#) to download your tax form.

Tel: 866-900-9308
Central Texas
Dallas/Ft. Worth
Houston
Oklahoma

American Textile Recycling Services (ATRS) collects, sorts, donates and resells misfitting, used and out of style clothing, shoes, toys and household goods from all over the country. We create jobs in local communities and emerging nations and keep millions of tons of textiles out of landfills every year

Donate

Recycle

Compost

Looking for
Options

COMPOSTING GRINDER

Many stores, including the Woodlands store in Houston, use a composting grinder. We are looking to expand this program in Houston.



SW REGION ZERO WASTE PROGRESS

Donate

Recycle

Compost

Landfill

38%

62%



1. Need to **improve Team Member and Guest Education.**
2. Need to do waste audits on stores with low diversion rates.
3. Looking for options to dispose of problematic waste streams, including:
 - a. **Food soiled Styrofoam**
 - b. **Food soiled plastic gloves.**

- Food bank donations
- Pet/Animal Food Donations
- Compost giveaway
- Single Stream Recycling
- Compost Pick Ups
- Backhauling cardboard to SWD
- Tetra Paks
- Used Cooking Oil
- Lamp recycling
- Battery Recycling
- Styrofoam Re-Use



THANK YOU!

Southwest Region Green Mission Program

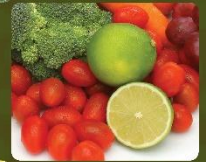
Energy Efficiency

Construction

Transportation

Zero Waste

END



Recommendations

Project Recommendations

Short-Term Recommendations *(first twelve months)*

1. H-GAC to host quarterly roundtable
 - Identify and map a process to address the short-, mid-, and long-term recommendations
2. Coordinate education and outreach
 - Develop educational materials and social media for different audiences
3. Clarify materials accepted by compost processors

Project Recommendations (cont.)

4. Discuss potential tiered rate structure for food waste with compost processors
 - Food wastes high in liquid content may warrant a discount due to their water content, as it would reduce the amount of water required in the composting process
5. Focus initial food waste diversion efforts on commercial food processors, wholesale food distributors, and grocery stores
 - These entities account for the largest generators of food waste
 - These facilities generate between 3 – 5 tons of food waste per week

Project Recommendations (cont.)

6. Pursue food waste on Produce Row

- NewGen believes there is material that can be diverted for consumption and composting from this facility

7. Pursue liquid food processors

- Liquid material reduces the amount of water required during the composting process

8. Follow up with collection companies regarding expansion into food waste

9. Identify compost processing facilities with crush pads

- The Houston Food Bank and Sysco are examples of entities that landfill certain foods because they do not have a process to extract the food from the containers in a cost effective manner

Project Recommendations (cont.)

10. Examine Hilton Americas-Houston “beta results”

- They are testing a machine that extracts all liquid from food waste so that food waste can be placed in a compactor and sent to a compost facility

11. Begin development of a GIS database of food waste generators, collectors and processors in the H-GAC planning region.

Project Recommendations (cont.)

12. Develop a database to track generators, collectors and processors of food waste – location, volumes, frequency, etc.
13. Coordinate with the Cities of Houston and Sugar Land's Departments of Health (regarding the requirements for food donations).

Project Recommendations (cont.)

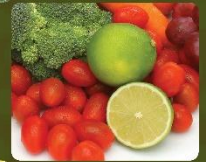
Mid-Term Recommendations *(13 months to 36 months)*

14. Explore opportunities with Exxon Corporate Campus
 - EXXON is planning to develop a “green” campus for 10,000 – 12,000 employees in the Woodlands
15. Coordinate food waste diversion programs with restaurants
16. Explore food waste diversion to farms

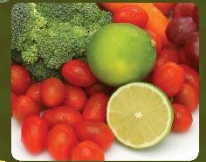
Project Recommendations (cont.)

Long-Term Recommendations (37 months and longer)

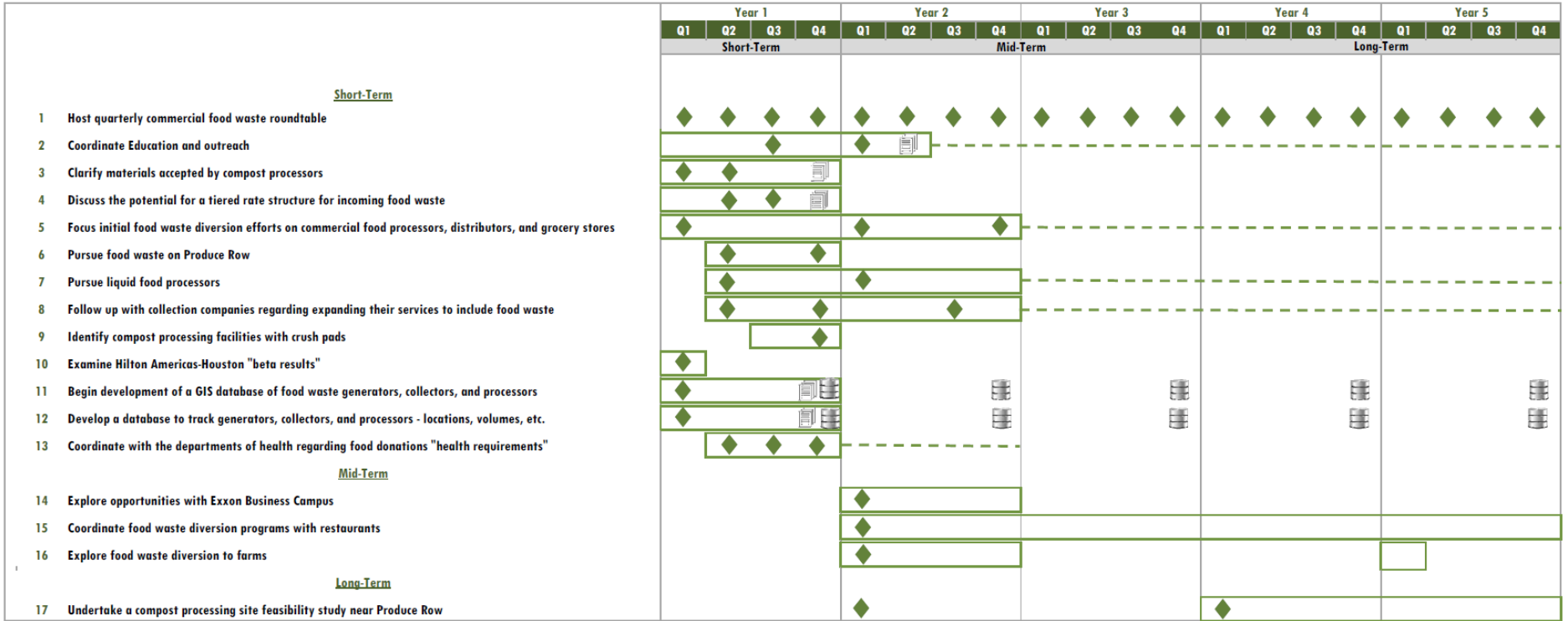
17. Undertake a feasibility study regarding Produce Row to determine if there is available area to develop a compost processing site.
 - This would be an advantageous siting opportunity, specifically as it relates to less expensive collection and hauling costs



Collection Panel
2:20 PM – 2:40 PM

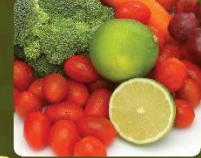


Action Plan



Legend:

- ◆ = Meeting
- 📄 = Primary Focus
- = Ongoing, but not a primary focus
- 📄 = Document generated regarding a conclusion/agreement/materials developed/other
- 🗄️ = Update database/records



Questions or Comments?

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ECONOMICS

STRATEGY

STAKEHOLDERS

SUSTAINABILITY

www.newgenstrategies.net