

Using Public-Private Partnerships to Advance Organics Recovery in Schools



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SERDC Food Recovery Summit

Charleston, SC

November 17, 2015



CHECK IN

- **Who's in the audience?**
- **What are you here to learn?**
- **Who's here with hopes of taking what they learn back to their institution?**

FOOD WASTE DISPOSAL OVERVIEW



- Food Waste Disposal began operations at the beginning of 2012 and has since diverted nearly 9 million pounds of organic waste.
- FWD sells compostable products and hauls organic waste, Charleston County processes the compost and sells the final product.
- Largest source of waste comes from institutional and educational facilities, such as the College of Charleston and the Charleston County School District.
- Successful programs are those in which the customer is fully committed to continuing education.
- The Perfect Storm...

Using Dining Services as a Catalyst for Campus Organics Recovery



**Jen Jones - Facilities Coordinator for
Sustainability, College of Charleston**

College of Charleston

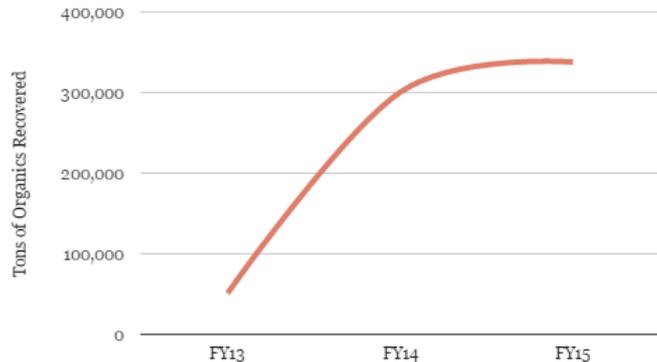
- 12,000 students
- Aramark contracted for Dining Services.
- 2 main dining halls
- Liberty Fresh Foods - eat-in with reusable serviceware
- City Bistro - eat-in & to-go with compostable serviceware
- Catering - switched to all compostable serviceware



About our Successes

Dining Halls

College of Charleston Total Organics Diverted



Zero Waste Events

2014

- A Charleston Affair - 94.7%
- All OOS events
- Welcome Back Picnic - 93.9%

2015

- A Charleston Affair - 92.8%
- All OOS events
- Welcome Back Picnic - 95.1%
- Diversity Conference
- Smaller scale departmental events



Zero Waste by 2025

How We Got Here



Infrastructure
Building Trust & Social Capital
Pilot
Buy-in
Expand
Refine
On-going Efforts

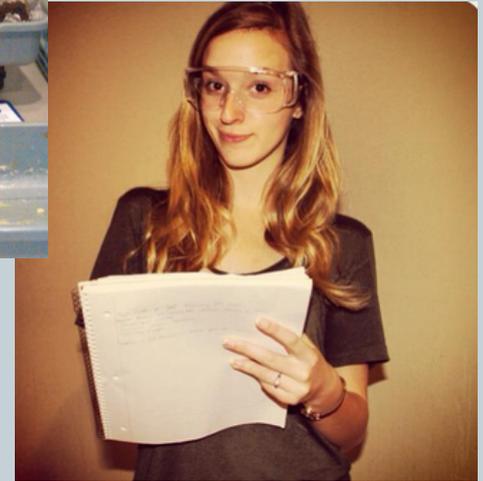
Infrastructure



- How can you incorporate change so that:
 - It fits with what is already happening
 - It makes things easier (if possible) - carts vs carrying things
 - Aramark already set up for this - weighing and tracking pre-consumer food waste
- Find and leverage the motivation - Push from Aramark corporate to “go green”
- 2011 - Charleston County compost facility & FWD established
- 2012 - Aramark began switch to compostable serviceware

Building Trust & Social Capital

- Social Capital - “banked” flexibility with your partners
- Why?
 - Change is hard
 - Change is value driven
 - SUSTAINABLE change
- Get dirty and start the favor train
- 2012 Aramark purchased a pulper & reached out to Office of Sustainability to help assess
- 2013 Intern with Aramark and Graduate Assistant at the Office



Pilot



- Start small and be successful- pre-consumer food scraps
- Small change from what already doing
- Demonstration that it's possible
- November 2012, first load of organics from City Bistro

Buy-in



- Cost savings realization - data from students
 - nearly \$4,000 annually looking at direct costs only
 - informed them about unneeded infrastructure
- Overcoming the “gross” factor - story with Mandi at Stern
- Relying on built trust and social capital
- Showing non-monetary value:
 - logistical improvement
 - marketing value
 - student support
 - Long-term commitment

Expansion



- Early successes cleared space for this
- Liberty Fresh Foods - Summer 2013
- Now at Catering, and 3 Auxiliary locations
- Zero Waste Events
 - A Charleston Affair - May 2014 & 2015
 - Welcome Back Picnic - August 2014 & 2015
 - Bluegrass and Brunch - September 2014 & 2015

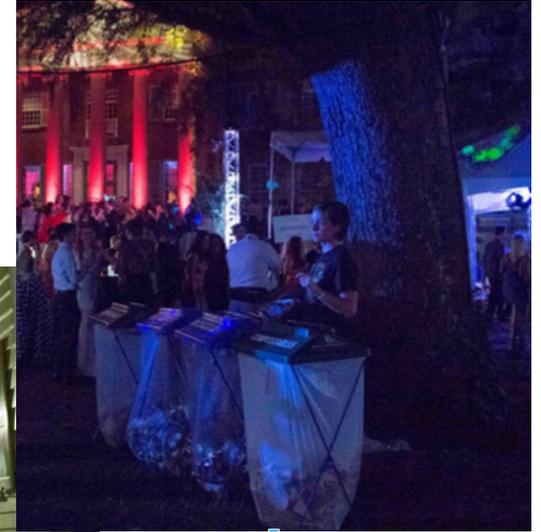
A Charleston Affair

- 2 night annual seniors/alumni event
- 5,000+ guest across 2 nights
- Alcohol (wine & beer) & dinner served
- Held in Cistern Yard - large outdoor space
- 2014 - 94.7%
- 2015 - 92.7%



A Charleston Affair

- All serviceware compostable
- Staffed recovery stations throughout event
- Facilities staff moves materials around event space
- HQ with team of volunteers sorting for “last line of defense”
- MAJOR collaboration with all parties involved
- DRAMATICALLY improved materials management



Refine

- Training
 - context via Zero Waste Goal - the WHY
 - information relevant to them
 - Use staff as ground troops
- Continue to review and improve processes
- Accountability and persistence - contracts



On-going Efforts



- IT'S STILL NOT PERFECT!!!
- Goal is NOT static - continually moves
- “Zero Waste” vs ZERO waste
- Waste DIVERSION vs waste AVERSION
- Staff buy-in & awareness
- Student buy-in & awareness
- Turnover is challenging

On-going Efforts



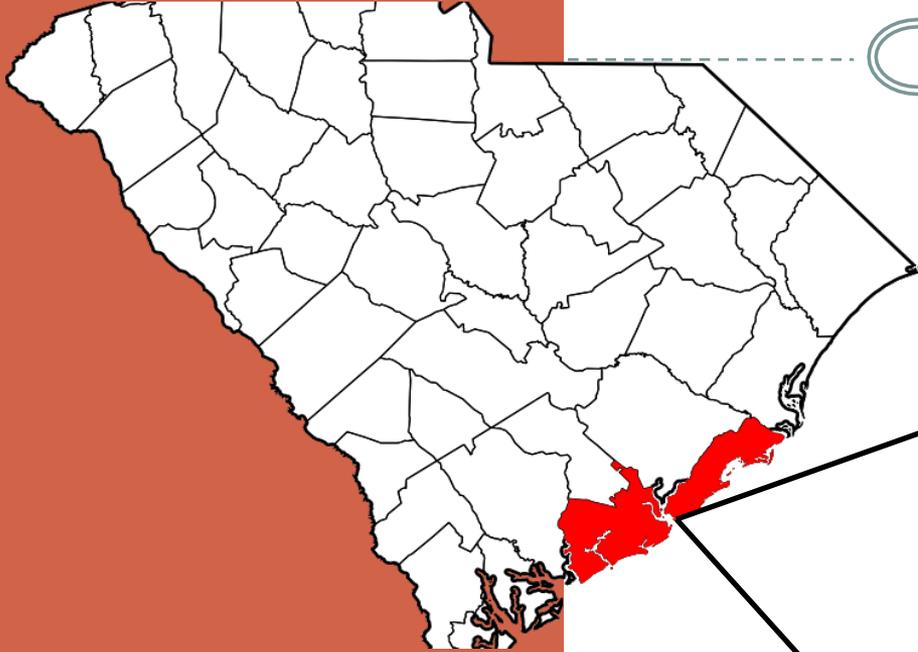
Working to Institutionalize:

- **Zero Waste Events campus-wide**
 - Training for event planners
 - Integration into Catering Requests
 - Event Guide
 - Zero Waste Corps - volunteer group to support ZW events
- **Campus-wide organics collections**
 - Small scale office participation in break rooms
 - station standardization to prepare for eventual organics addition

Learning to Sort It Out: Student Driven Composting in School Cafeterias



MAGGIE H. DANGERFIELD
SUSTAINABILITY COORDINATOR
CHARLESTON COUNTY SCHOOL DISTRICT



86
1000 mi²
49,800
6,500



Sustainable Schools Initiative



Core Pillars

- Sustainable, Healthy Schools
- Sustainable Curriculum
- Sustainable Construction

Focus Areas

- Awareness
- Waste Management
- Curriculum
- Construction
- Energy & Resource Conservation
- School Gardens

Sustainability Integration

- 100+ teachers and staff from all 76 schools
- Quarterly meetings and professional development days
- Annual recognition for outstanding efforts

Green Liaison Network

- Awareness
- Recycling
- Gardening
- Ecology
- Symposium
 - Green School Awards

Student Green Team Program



- Annual waste audits
- Single stream recycling in all schools
- **Commercial composting**
- Weekly waste stream tonnage tracking

Comprehensive Waste Management System

- Annual professional developments
- Quarterly rewards and recognition programs

Day Porter and Cafeteria Support Staff

Waste Management



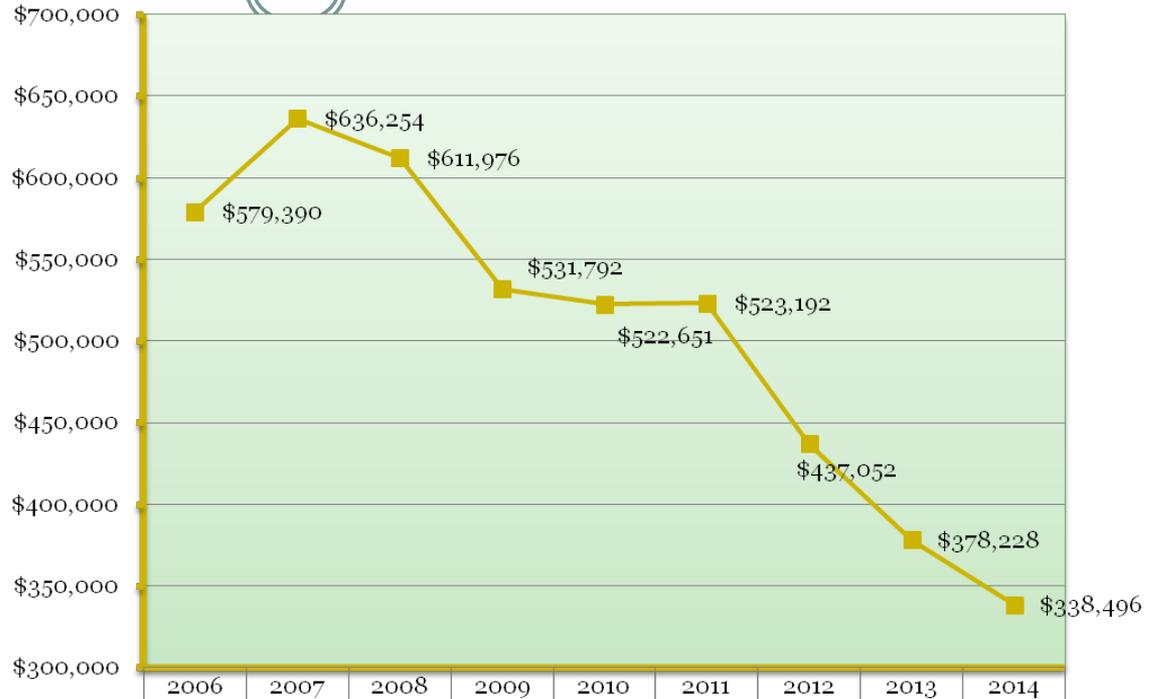
Key Players



The Breakdown

- Fee based on MSW dumpster:
 - Size
 - Frequency of service
- \$172/yd/yr
 - (1) 8-yd @ 1x/wk = \$1,376 annually
- \$240,894 in expenditure reductions for solid waste user fee bills
- \$415,800 in cost avoidance since 2011
- Experiencing diminishing returns now

USER FEE CCSD Annual MSW User Fee Bills



	2006	2007	2008	2009	2010	2011	2012	2013	2014
User Fee	\$579,3	\$636,2	\$611,9	\$531,7	\$522,6	\$523,1	\$437,0	\$378,2	\$338,4
Change		56,864	-24,278	-80,184	-9,141	541	-86,140	-58,824	-39,732

Waste Stream Diversification



Mutually Beneficial Partnerships



Food Waste Diversion Program



48
schools

- 9 MS
- 3 K8
- 36 ES

29,000+
students

- Urban
- Suburban
- Title 1

>2.4M lbs
diverted
to date

- SY12/13: 141,261
- SY13/14: 793,088
- SY14/15: 1,245,570
- SY15/16: 231,504

Food Waste Diversion Program

Student-Driven Sorting



3-E Benefits

- **Educational**
 - Weekly diversion data
 - State & Common Core standard opps
 - Physical & emotional wellness
 - Social & soft skill development
- **Environmental**
 - Food waste is diverted to closed loop stream
 - Decreases methane pollution
- **Economic**
 - Less expensive than MSW hauling and storage

Composting Pilot Program

11
Elementary
Schools

- Active liaison
- Enrollment
- Location

- Recycling Rate
- Tap & Stack Practice

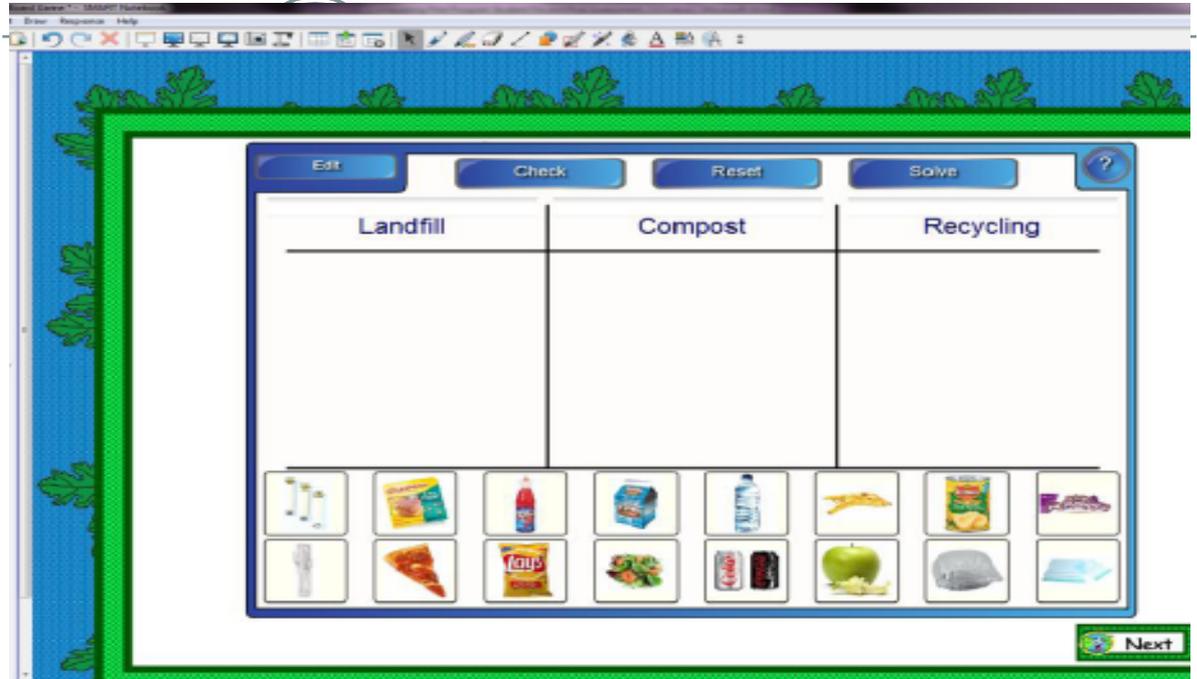


Gaining Buy-In



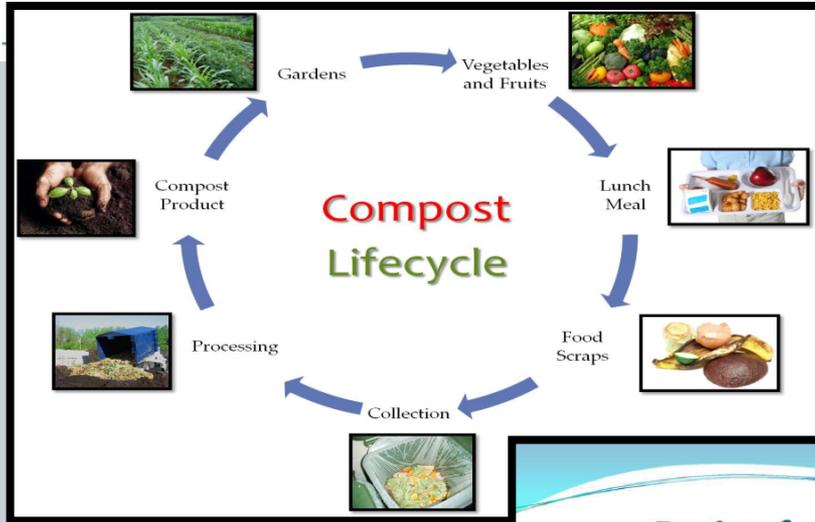
Digital Education Toolkit

- Welcome Note
- Materials and Procedures Guide
- Educational and Instructional Powerpoint
- Interactive Smartboard Game for Sorting Practice
- Parent Flyer
- Dumpster Fullness Assessment Log
- Pre and Post Implementation Assessment (K-2, 3-5)



“Sort It Out” Smartboard Game

Digital Education Toolkit



Additional Benefits of Composting

- Economic
- Cuts waste and disposal fees paid to trash pick-up companies and to the landfill for space used
 - Traditionally less expensive to dispose of food waste than of just landfill waste
 - Replaces the need to buy synthetic fertilizer for
- Environmental
- Preserves valuable landfill space
 - Helps prevent methane pollution from harmful gases produced as a byproduct of decomposing food waste in the landfill
 - Helps sustain other important microbial, bacterial, and fungi lifecycles
 - Helps plants fight disease
 - Helps prevent erosion

Recipe for Making Compost

3 Parts of Yard Waste



1 Part Food Waste



Water



Compost Critters



Compost



Program Set-Up



Sort It out
Landfill

in ✓

out X

compost	
recycle	
stack	

GREENING SCHOOLS

Sort It out
Recycle

in ✓

out X

compost	
landfill	
stack	

GREENING SCHOOLS

Sort It out
Compost

in ✓

out X

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stack	

GREENING SCHOOLS

Composting Station Set-Up

With a Bosch Station



Without a Bosch Station



Students should go from either left to right or right to left depending on the order of your bins.

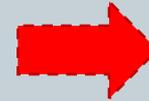
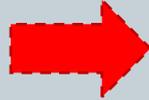
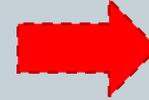
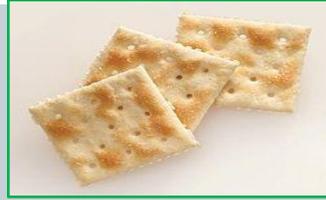
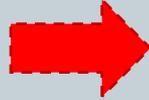
LANDFILL → RECYCLE → COMPOST is preferred.

How To Sort It Out!



- Place the following common lunch items in their appropriate waste streams:
 - **LANDFILL**, **RECYCLE**, **COMPOST**
- The recommended order of sorting is:
 - **LANDFILL** → **RECYCLE** → **COMPOST** → **TAP & STACK**
 - By following this order, only food waste should be left on a tray or in a lunchbox once students arrive at the **COMPOST** station

Example of Sorting It Out



FOOD LEFT ON TRAY

COMPOST

LANDFILL

Other Program Components

Pre-Sorting



Alternative Set-Ups



Metrics and Assessment Tools



- Ability to reduce dumpster service at each location to cover costs of program and/or generate savings
- Anonymous online surveys to teachers and staff participants
- Follow-up in-person interviews for specific feedback
- Personal visits and first-hand observations of process
- Discussion with day porters and custodial staff supervisors

The Ups & The Downs



Successes

- Water park conversation
- Middle Schools added and knowledge transferred
- Waste and trash service reduction
- 1200 tons of food waste diverted from landfill and used to nourish our gardens and yards
- Farm to School Program
- Increased awareness of wastefulness

Challenges

- Cost of compostable bags and weight of food waste
- Height of tote used to collect food waste
- Time to sort
- Monitoring of bins
- Administrative Buy-in & Teacher assistance
- Amount of food waste generated
- Food Services Department
 - No consistency between cafeterias in their use of serviceware

Curricular Ties



Farm to School



Food Waste Diversion



Farm to School Integration



- 62% of schools have gardens
 - 2 GAP certified
 - 1 micro-farm
- \$1 million grant from Boeing to tri-county area for gardens/outdoor learning
 - Clemson University Extension
 - Training & Support
 - College of Charleston
 - Research
 - Green Heart Project
 - Management



Farm to School Learning Opportunities

- Closed loop lifecycle process demo on & off site
- Green liaison & student green team stewardship projects
- Renewed school admin engagement & commitment to sustainability
- Ability for students to connect with their community through volunteerism & sharing of produce
 - Nearby farmers stands & school culinary programs
- Increased propensity of students to taste food they grew
- Development of interpersonal skills



What's Next?



- **Goals:**

- Focus on reducing wastefulness and food packaging
 - Explore food waste recovery policy changes for uneaten food
- Continued expansion of program to remaining K-8 schools and 2 HS pilots
 - **Challenges:**
 - Funding
 - Ability to make reductions at larger schools & at schools already in the program
 - Maintaining cost avoidance and cost savings realizations
 - Generating buy-in and monitoring participation and compliance

QUESTIONS?



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