

# An Innovative Program to Recycle Construction and Demolition Waste

Brevard County Solid Waste Management Department  
Florida Institute of Technology  
Habitat for Humanity of Brevard  
Florida Department of Environmental Protection

## Project Tasks

- Model ReStore Material Flow and Management
- Create Technical Advisory Group
- Address Project Obstacles
- Facilitate Store Expansion
- Operate Retail Space
- Develop Collection System
- Track Economic Model
- Promote Concept Transferability

## The Model

- Use the following project website address  
[coe.fit.edu/civil/heck\\_project.html](http://coe.fit.edu/civil/heck_project.html)
- click on the link:  
financial and material flow simulation

## Uses of the Model for New Store Planning

- Store size growth per year
- Gross Sales (High, Average, and Low)
- Weight of material sold (Report to the County recycling coordinator)
- Breaks down projected sales by code and provides typical space allocation

## Uses of the Model for Existing Store Management

- As a Benchmark to compare operations
- To compare or predict growth and gross sales
- To see what types of products provide the most revenue
- To see where to promote additional collection activities
- To look at allocation of space/resources in the ReStore

## Technical Advisory Group and Tag Meetings

- April 5, 2005 Initial TAG meeting  
Topic: Getting Project Started
- April 6, 2006 Ten Attendees  
ReStore simulation model, collection systems needs, and ReStore labor requirements
- February 23, 2007 Seven Presenters and Sixteen attendees  
Topics presented: Budget Development, marketing, business plans, feasibility plans, Restore startup, deconstruction, personnel management, operations, county recycling coordinators, and material flow.

## Project Obstacles

- Getting FDEP, Brevard County Solid Waste, Brevard County Habitat for Humanity and Florida Tech working as a group (contracts, purchasing equipment, and travel).
- Collecting Data for Simulation Model
- A training module for volunteers who would enter landfill sites was developed based on the state spotter training certification program. Release of Liability forms, site notification procedures and site visitation records were created.
- Manned Versus Unmanned Drop-off Collection Site
- Purchasing Collection Equipment that can be used by Habitat for Humanity (Truck & Forklift).
  - County purchasing requirements, create a leasing contract, method of purchasing (no bidders)

## Store Expansion

- The project proposal was to help with the initial opening of the ReStore.
- 2<sup>nd</sup> Qt: added 602 ft<sup>2</sup> of retail space and 1812 ft<sup>2</sup> shipping and receiving. Funding from project.
- 3<sup>rd</sup> Qt: ReStore expanded to include 110 ft<sup>2</sup> office space, doubled the retail space to 5137 ft<sup>2</sup>, and increased shipping and receiving to 1802 ft<sup>2</sup>. Project paid the rent during construction phase for the new area and other costs associated with expansion.

## Operate Retail Space

- ReStore continues to operate and expand.
- 2<sup>nd</sup> Qt: Full time truck driver, part time assistant store manager, ReStore broker position added.
- eBay sales started.
- 3<sup>rd</sup> Qt: Deconstruction activities started, two additional sales positions were filled. An advertising campaign started.

## Develop Collection System

- Conduct Pilot Test Recovery Projects at two landfills.
- Determine ReStore needs for improved collection and handling equipment of recovered material.

## Florida Recyclers Inc. Site



### Results from the Florida Recyclers Inc. Site Pilot Study

- Saleable concrete blocks are available, can be recovered and sold in the ReStore.
- The revenue generated from the collection and sale of the blocks does not justify the use of the collection truck and driver.

# The Good News



# County Pilot Recovery Program Banner



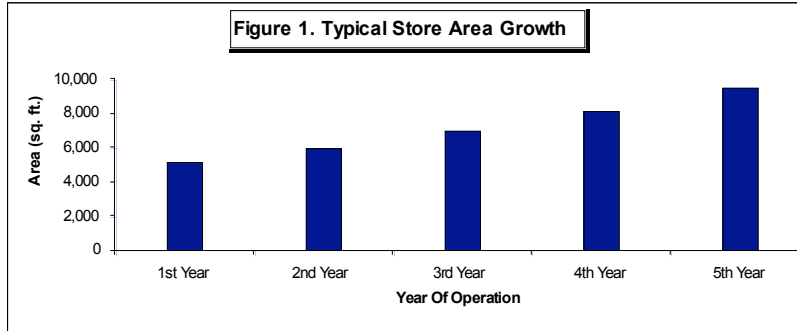
## Results from the County Landfill Site Pilot Study

- County landfill staff required that a drop off location away from the working face be used and that the site be manned.
- Again, it was found that a significant amount of material could be recovered, but it was not enough to justify a full time position to man the site.

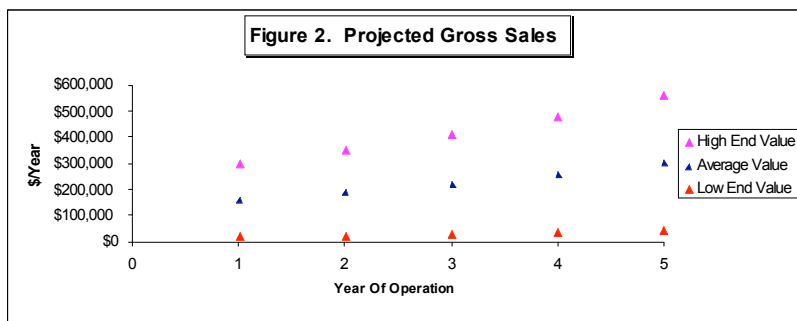
## Track Economic Model

- The simulation model was used to assess the ReStore operations since the expansion. The ReStore retail space after expansion was 5137 ft<sup>2</sup>.

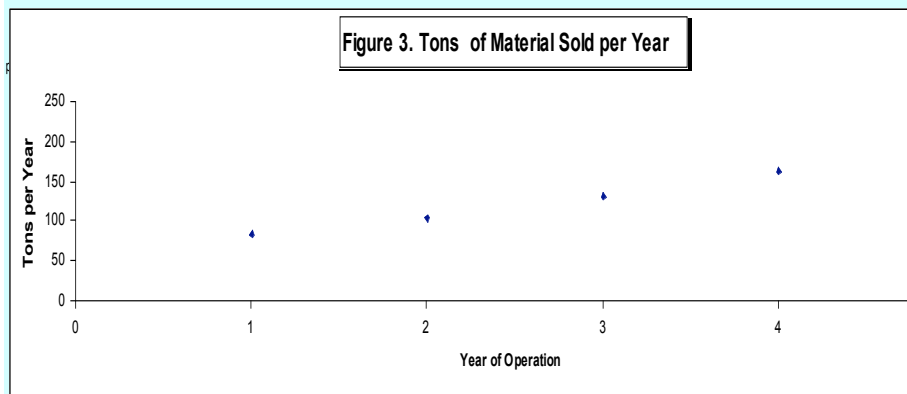
# Projected Future Growth



The model projected average annual sales of \$150,000 the actual sales were \$155,680. The annual sales during the final twelve months of the project were \$181,000. Sales are directly related to area, so if the area is not increased predicted sales remain constant.



This is what the County Recycling Coordinators need to know. Projected annual tonnage 85 tons and actual tonnage was 88 Tons.



## Sales by Code

*Table 1. Projected Gross Sales by Codes*

Item by code	1ST YEAR	2ND YEAR	3RD YEAR	4TH YEAR	5TH YEAR
Furniture	\$40,614	\$50,429	\$62,617	\$77,749	\$96,539
Hardware	\$21,402	\$26,574	\$32,996	\$40,970	\$50,872
Cabinet doors/Closetmaid	\$11,372	\$14,120	\$17,533	\$21,770	\$27,031
Appliances/Electronics	\$6,262	\$7,775	\$9,654	\$11,987	\$14,884
Flooring	\$13,180	\$16,366	\$20,321	\$25,232	\$31,330
Plumbing/Bath	\$5,515	\$6,848	\$8,503	\$10,558	\$13,109
Building material	\$3,336	\$4,142	\$5,144	\$6,387	\$7,930
Linens	\$7,809	\$9,697	\$12,040	\$14,950	\$18,563
Lights	\$6,455	\$8,015	\$9,953	\$12,358	\$15,344
Misc/thrift store/restore	\$6,434	\$7,989	\$9,920	\$12,317	\$15,294
Doors/Windows	\$5,833	\$7,242	\$8,992	\$11,165	\$13,864
Electrical Supply	\$4,297	\$5,335	\$6,625	\$8,226	\$10,214
Kitchen	\$8,646	\$10,735	\$13,329	\$16,551	\$20,550
Others	\$3,336	\$4,142	\$5,143	\$6,385	\$7,929
Paint/Stain	\$1,732	\$2,150	\$2,670	\$3,315	\$4,116
Books/Tapes/records	\$1,827	\$2,268	\$2,816	\$3,497	\$4,342
Pictures Frames	\$1,215	\$1,509	\$1,873	\$2,326	\$2,888
Lumber	\$895	\$1,112	\$1,380	\$1,714	\$2,128
<b>Total Revenue</b>	<b>\$150,160</b>	<b>\$186,449</b>	<b>\$231,508</b>	<b>\$287,456</b>	<b>\$356,926</b>

## Projected Space Allocation

**Table 2. Typical Area Distribution by Codes**

Item by code	%Area
Furniture	31.67
Misc/thrift store/restore	3.50
Hardware	7.67
Appliances/Electronics	3.39
Cabinet doors/Closetmaid	8.77
Others	9.37
Flooring	8.38
Housewares	2.86
Plumbing/Bath	3.50
Linens	4.22
Lights	3.56
Doors/Windows	2.66
Electrical	5.22
Books/Tapes/records	1.29
Paint/Stain	1.96
Pictures Frames	0.36
Lumber	1.60
Donation	0.01
<b>Total Area</b>	<b>100.00</b>

## Annual Tonnage

<i>Tonnage of material sold as per annual sales</i>	
Input the Annual Gross Sales of the year in Dollars	<b>\$181,000.00</b>
Projected Tonnage of material in Tons	<b>102.34</b>

## Promote Concept Transferability

- Created Project Website
- Held Tag meetings (16 attendees last meeting)
- This presentation

## Future of Project

- Multi County Projects
- Innovation means: not done in this county before.
- The Habitat for Humanity statewide coordinator, Jill Olin, would like to participate in state wide project if counties will participate.