

# Get the Green Edge

## Construction/Demolition Recycling for a Competitive Advantage

Presented by the UNC Office for Historically Underutilized Businesses (HUB)  
and  
the UNC Office of Waste Reduction and Recycling (OWRR)

# Why should I care about recycling?

- Increase your profit margin
- Stay competitive in changing market
- Generate positive PR for your company
- Comply with state and local laws and UNC policy

# What kind of money are you throwing away?

Commingled rolloff:  
Haul charge - \$100-\$200  
Tip fee - \$33/ton



# What kind of money are you throwing away?



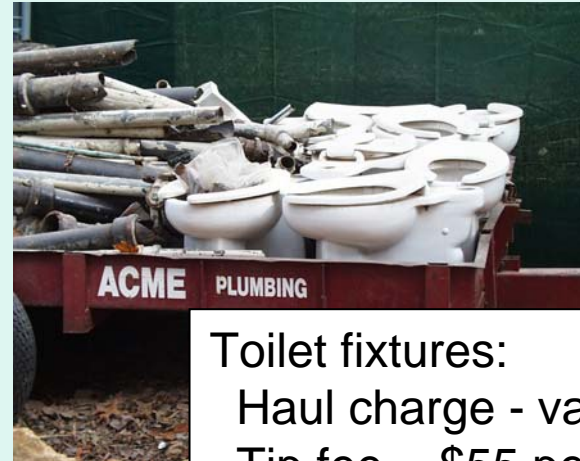
Ceiling tile:  
Haul charge - \$0  
Tip fee - \$0



Asphalt:  
Haul charge - varies  
Tip fee - \$55 per rolloff



Reused brick:  
Haul charge - \$0  
Tip fee - \$0  
Avoided cost of new brick - varies



Toilet fixtures:  
Haul charge - varies  
Tip fee - \$55 per rolloff

# The Green Edge is a mindset, not a formula

- Keep looking for more efficient ways to do business
- Requires advance planning and willingness to innovate
- Quantify the hidden costs of waste
- Look “upstream” – keep waste from even getting to the job site
- You aim for Zero Injuries; why not Zero Waste?

# What is LEED?

- Set of green building certification standards created by the US Green Building Council (US GBC)
- Most commonly used standards in the US
- Addresses seven areas with a variety of prerequisites and possible points in each area. Total possible points: 69

# LEED Credit Breakdown

## Where the points are in LEED

Category	Possible points (% of total)	
Sustainable sites	14	(20%)
Water efficiency	5	(7%)
Energy/atmosphere	17	(25%)
Materials/resources	13	(19%)
IEQ	15	(22%)
Innovation	4	(6%)
Accredited professional	1	(1%)
<b>Total</b>	<b>69</b>	<b>(100%)</b>

Source: USGBC

# LEED: Materials and Resources

## 13 Possible Points

- Prerequisite: Storage and Collection of Recyclables Required
- Credit 1: Building Reuse 3
- **Credit 2: Construction Waste Management 2**
  - 50% - 1 point; 75% - 1 point; Innovation Point
- Credit 3: Resource Reuse 2
- Credit 4: Recycled Content 2
- Credit 5: Local/Regional Materials 2
- Credit 6: Rapidly Renewable Materials 1
- Credit 7: Certified Wood 1



# The green building trend - LEED

- Over **18,000 people attended GreenBuild** in Chicago last week
- **1,100 LEED-certified commercial projects** as of September 2007, each averaging about 10,000-sq.m.
- **Over 6,000 other projects currently registered** with the USGBC to acquire LEED certification in the future.

# The green building trend - LEED

- More than **40,000 industry participants** have passed a national exam to become "LEED Accredited Professionals."
- Through the first nine months of 2007, the cumulative number of **LEED registered projects** had grown by **50%** and **LEED certified projects** had grown by more than **60%**.

# The green building trend – LEED locally

- **Duke** – all new buildings will be LEED certified
- **Chapel Hill/Carrboro Schools** – building LEED buildings
- **UNC-Chapel Hill**
  - Carrington Nursing School Addition – built
  - Botanical Garden Visitors Center – in construction
  - Dental Sciences Building – in design
  - School of Information and Library Sciences – in design

# The green building trend – legislation

- **Massachusetts** [Department of Environmental Protection](#) prohibits the disposal and incineration of five materials from construction and demolition projects: **asphalt pavement, wood, metal, brick and concrete.**
- **California** – 14 towns and 3 counties have C/D recycling ordinances
- **22 states, 55 cities, 33 schools and eight towns** encourage or require LEED-certified public buildings
- **C&D waste legislation was debated in the NC General Assembly this year**

Construction and demolition waste makes up around 30% of North Carolina's waste stream.

# N.C. General Statute 130A

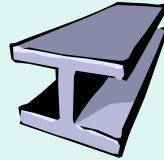
## Banned from landfills:

- **Whole Tires**
- **Used Oil**
- **Yard Waste**
- **Aluminum Cans**
- **White Goods**

# Orange County Regulated Recyclable Materials Ordinance

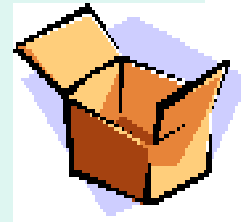
The materials listed below **must** be recycled.

- **Clean Scrap Metal**



- **Unpainted, Untreated Wood Waste** (plywood, oriented strand board (OSB), framing material, engineered beams, etc.)

- **Pallets and shipping crates**
- **Corrugated Cardboard**



**DO NOT PLACE SCRAP METAL, WOOD, PALLETS OR  
CORRUGATED CARDBOARD IN UNIVERSITY DUMPSTERS!**

# Orange County Regulated Recyclable Materials Ordinance

- These materials must be
  - **separated** for recycling on the jobsite (and hauled in segregated loads)
  - or transported in mixed loads to a **permitted processing facility**.  
Materials Reclamation (WCA) in Raleigh is currently the only approved facility.



# Orange County Regulated Recyclable Materials Ordinance

- Improperly separated or disposed **Regulated Recyclable Material** arriving at the Orange County Landfill is subject to a surcharge of **double the current landfill tip fee.**
- C/D waste from Orange County containing regulated materials **may not be landfilled in other counties.**

# Orange County Regulated Recyclable Materials Ordinance

In Orange County, all vehicles with a Gross Vehicle Weight greater than 9,000 lbs., **hauling waste loads of clean wood waste, metal, or cardboard,** must be covered and are required to be registered under a **Recyclable Material Collection License.**



# UNC C/D Waste Management Policies

- Contractors must obey Orange Cty RRMO and state laws
- 01505 Construction Waste Management - **Recycling goal of:**
  - **50% on demolition/renovation projects**
  - **75% on new construction**

# 01505 Construction Waste Management – section C.1

- **Materials for reuse in project:**
- **Materials for reuse on campus: Contractor delivers to Owner.**
- **Materials which must be recycled by law**
- **Materials to be recycled (project specific):**
- **Suggested salvageable materials**
- **Other recyclable materials to be considered include (but are not limited to):**

# UNC C/D Waste Management Policies – Solid Waste Management Plan (SWMP)

- Required within 5 days of NTP date
- Accompanied by sit-down meeting with Construction Waste Specialist
- Examine and quantify costs for each disposal option



# UNC C/D Waste Management Policies – Monthly Report

- Compiled by GC and submitted to UNC Construction Management along with payment application
- Documents fate of all non-hazardous waste, whether landfilled or recycled
- Contractor attaches weight tickets, manifests
- Contact me for help converting volume to weight

# MONTHLY REPORTING FORM -- attach all weight tickets and documentation!!

UNC Capital Projects - Solid Waste Management

Office of Waste Reduction and Recycling, UNC-CH  
 Phone: 962-4699 (Sarah Myers)    samyers@fac.unc.edu



PROJECT:
TODAY'S DATE:
SUMMARY FOR MONTH OF:

Contractor:
Contact name & title:
Office phone:
Cell phone:
Email:
Fax:

List Recycle, Salvage, MRF, or Landfill	Type of material	Quantity(tons)	Destination - name of landfill, recycling facility, or other recipient	Hauler name	Cost of handling & transp.	Revenue or tip fee	Total cost
	Scrap metal						\$0.00
	Cardboard						\$0.00
	Clean wood						\$0.00
							\$0.00
							\$0.00
							\$0.00
							\$0.00
							\$0.00
							\$0.00
							\$0.00
							\$0.00
							\$0.00
							\$0.00
							\$0.00
<b>TOTAL COST</b>							<b>\$0.00</b>



Contamination issues	Meetings held to address waste management
11/15/2007	Get the Green Edge – Sarah Myers

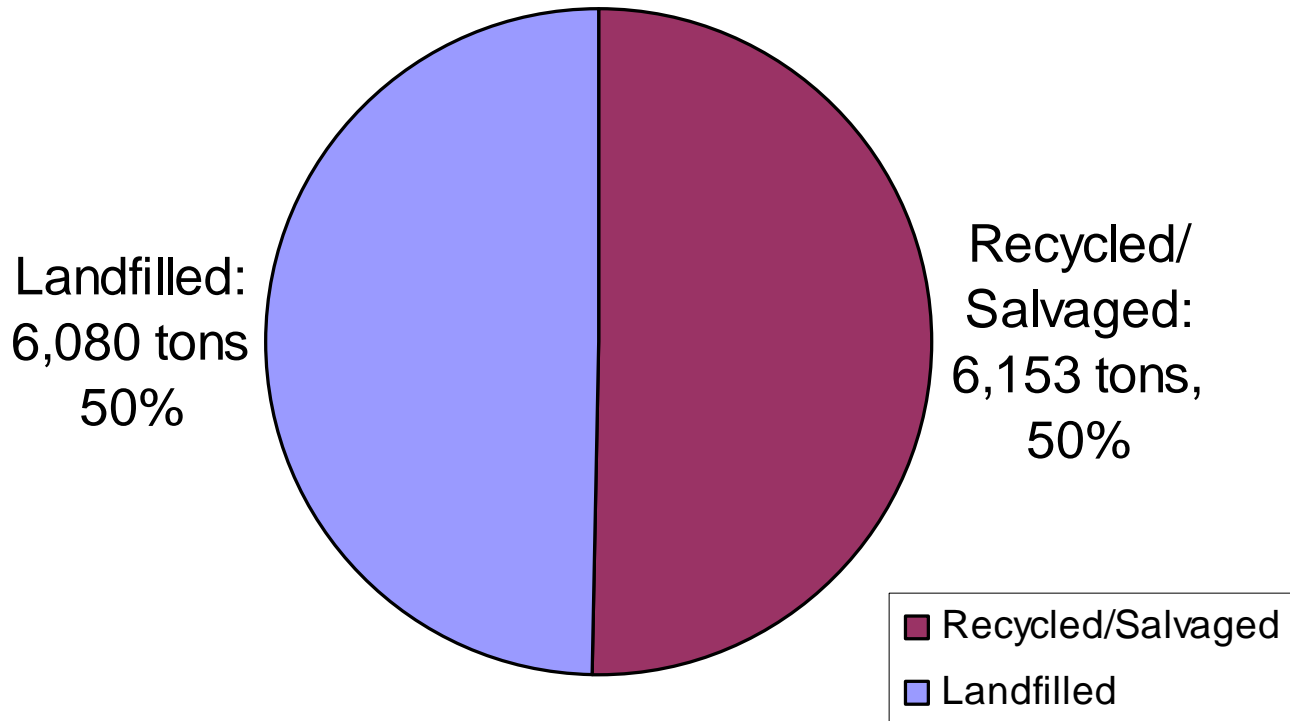


# Material Recovery Facility (MRF) vs. Source Separation

- A MRF provides convenience and legal compliance... **BUT**
- **WCA recycling rate for FY0607 - 32.96%**
- Half of that was “fines” used as alternate daily cover in landfills
- Contractor loses control over waste stream
- Commingling reduces diversion rates

# C/D Waste Management for Active Capital Projects

(total tons of waste to date, as of 8/30/07)



# Phillips Hall Roof (Baker Roofing)

- Purchased 26 squares out of 200 - nearly **90%** of the existing slate was reused.
- New slate - **\$200 per square\***
- Reused slate - **\$65 per square\*** (includes labor to salvage)
- Reuse saved **\$63,500** in material purchases
- **\$300 - \$2,000** saved in averted tip fees.



# Science Complex ph. II, - Venable Hall Demolition (Balfour Beatty)



Institution Recycling Network coordinated the removal of over **11 tons of furniture** in **two days**.

The furniture was transported to Haiti and redistributed to communities in need.

# The Green Edge workshop series – purpose

- Networking
- Information sharing
- Problem solving
- Celebrating successes

# Proposed format

- Lunch-and-learn
- Introductions
- 20 min presentation by contractor or recycler
- Short Q&A
- Rest of the time - networking

# Your input needed on...

- Frequency
- Format
- Time of day
- Possible topics –
  - Conquering the obstacles to source separation
  - Ceiling tile recycling
  - Zero Waste
- What else can we do?

# Links and Resources

- UNC OWRR C/D guidelines and info - <http://www.fac.unc.edu/OWRRGuidelines> (click on “[Construction and Demolition Waste Management](http://www.fac.unc.edu/OWRRGuidelines)”)
- NC recycling markets - <http://www.p2pays.org/DMRM/start.aspx>
- NC Waste Trader - <http://www.ncwastetrader.org/home.aspx>
- US Green Building Council - <http://www.usgbc.org/>
- Building Material Reuse Association - <http://ubma.org/>

**Sarah Myers** (o) 919-962-4699 [samyers@fac.unc.edu](mailto:samyers@fac.unc.edu)



<http://www.p2pays.org/DMRM/start.aspx>



[RBAC Home](#)

[Search Directory](#)

[Get Listed](#)

[N.C. WasteTrader](#)

[Links](#)

**Search Directory:** Use this as a tool to find an outlet for your recyclable materials. If you're not sure under which category to find your material, see our complete [LIST](#) of materials.

**By material.** Select the *general* type of material you want to recycle from the drop-down list below, then click "Go."

You have selected Construction & Demolition Materials as the general material type. Choose the *specific* type of material you want to recycle from the drop-down list below, then click "Go."

STEP 1

STEP 2

**By name.** If you know the name of the recycling company you seek, please select the first letter of the company's name:

[I](#), [M](#), [E](#), [U](#), [N](#), [F](#), [C](#), [Z](#), [S](#), [K](#), [L](#), [5](#), [D](#), [X](#), [A](#), [!](#), [B](#), [Y](#), [R](#), [3](#), [J](#), [V](#), [O](#), [G](#), [W](#), [P](#), [H](#)

# Clicking on a company name brings up more info about them and what materials they accept

[RBAC Home](#)

[Search Directory](#)

[Get Listed](#)

[N.C. WasteTrader](#)

[Links](#)

The following companies accept "Asphalt Pavement" from N.C.:

Company Name	City	County	State	Phone Number
<a href="#">Custom Crushing</a>	Mrytle Beach		SC	(704) 791-2882
<a href="#">Gold Hill Road Landscape Supply and LCID Landfill</a>	Asheboro	Randolph	NC	(336) 629-7175
<a href="#">Greenville Paving and Grinding</a>	Greenville	Pitt	NC	(252) 752-8842
<a href="#">GS Materials - Material Salvage and Recycling</a>	Burlington	Alamance	NC	(919) 499-9322
<a href="#">International Aggregate, Inc.</a>	Timberlake	Person	NC	(336) 364-1436
<a href="#">Recycled Materials, Inc.</a>	Dudley	Wayne	NC	(919) 735-0004
<a href="#">Salvage America, Inc.</a>	Greensboro	Guilford	NC	(336) 215-5228
<a href="#">Tidewater Fibre Corporation</a>	Durham	Durham	NC	(919) 957-8803
<a href="#">WCA - High Point</a>	High Point	Guilford	NC	(336) 886-3560
<a href="#">Westinghouse Materials</a>	Charlotte	Mecklenburg	NC	(704) 821-2426
<a href="#">Wilmington Materials, Inc.</a>	Wilmington	New Hanover	NC	(910) 763-4560

[View Printable List](#) - [Search Again](#)

The DMRM Database was last updated on:  
11/13/2007 1:04:16 PM

# http://www.ncwastetrader.org/

## N O R T H C A R O L I N A WasteTrader

[Materials Available](#)

[Materials Wanted](#)

[Need Help?](#)

[Tell a Friend](#)

### List of waste materials available:

Date listed  Descending

### SEARCH LISTINGS

Search keyword(s)

Material Name	Amount on Hand	Frequency Available	Price (\$)	City	State	Date Listed
<a href="#">2x4's, plywood, etc perfect for pallets</a>	several pallets	continous	depending on sizes	charlotte	nc	10/18/07
<a href="#">Vinyl siding</a>	approx. 400 sq ft	one time	Free	Winston-Salem	North Carolina	10/18/07
<a href="#">Sulfuric Acid</a>	2000 gallons	One time	0.00	North Wilkesboro	NC	10/16/07
<a href="#">Glycerine</a>	4000 gallons	One Time	0	Asheville	NC	10/15/07
<a href="#">Bale Wire</a>	Being disposed of	continous/seasonally Aug-Mar	Neg.	Nashville	NC	10/01/07
<a href="#">wood crates</a>	50	continous	\$20.00	Siler City or Asheboro	NC	09/25/07

# Why does UNC care?

- **In the United States alone, buildings account for:**
- 65% of electricity consumption,
- 36% of energy use,
- 30% of greenhouse gas emissions,
- 30% of raw materials use,
- 30% of waste output (136 million tons annually), and
- 12% of potable water consumption.

Statistics from USGBC.org

# Why does UNC care?

- **Research consistently shows that environmentally friendly buildings improve employee attendance and productivity and student performance.**