



The North Carolina
Recycling Business Assistance Center
"Recycling Industry Economic Developers"

C&D Recycling Webinar:

***A look at three target materials
and four levels of market development***

presented by:

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www.p2pays.org/rbac

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Special Thanks

- Michael Talbert – Mecklenburg County
C&D Recycling Coordinator
- Justin Mueller – Griffin
Brothers/Carolina Gypsum Reclamation
- Wendy Worley – RBAC: Wood Waste
- Sherry Yarkosky – RBAC: Asphalt
Shingles



C&D Items Traditionally Recovered for Recycling

- Metal
- Concrete/Brick/Block
- Corrugated Cardboard (OCC)
- Wood (more later)



Three New Target Commodities

- Gypsum / Drywall
- Tear-off Asphalt Shingles
- Carpet



Four Levels of Market Development

- Wood (mature)
- Gypsum / Drywall (developing)
- Tear-off Asphalt Shingles (emerging)
- Carpet (established, but room for growth)

Wood, gypsum and shingles: localized markets

Carpet: regional markets, complex composition



C&D Wood in NC

- NC Generates 980,000 tpy of C&D Wood Debris (2009?)
- 28% of C&D Waste is Wood Debris



% based on weight

* Source www.p2pays.org/ref/02/0162205.pdf



Types of C&D Wood

can be recycled

- Dimensional lumber (unpainted, untreated)
- Wooden pallets

sometimes can be recycled

- OSB board, plywood, other manufactured wood

cannot be recycled

- Painted and/or treated lumber



From C&D Debris to Recycled Wood Products



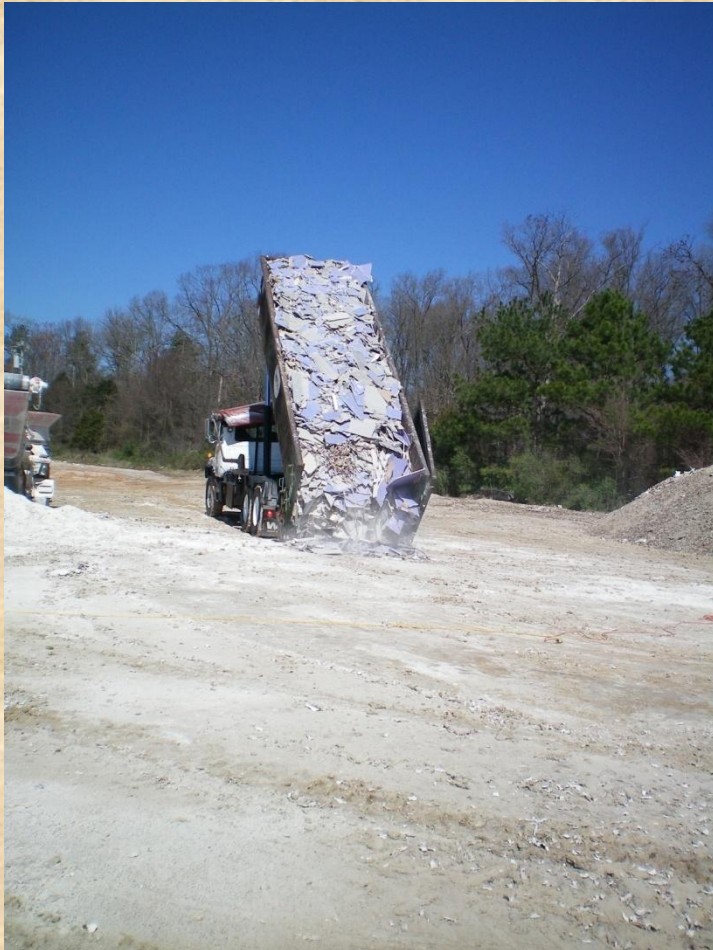


Drywall Recovery in NC

- 405,000 tpy generated in NC (2009?)
- According to NAHB, waste from residential construction is up to 30% gypsum wallboard
- Major processors in NC: Carolina Gypsum Reclamation (fertilizer, poultry bedding); McGill Environmental (compost)



Unloading and Finished Product





Carolina Gypsum Reclamation

(formerly Union Gypsum)

- Started in 1999: collects, processes and markets recycled gypsum wallboard in Marshville
- 1999 – 2007: recycled about 4,000 tpy of gypsum wallboard
- Today material is received from:
 - Griffin Brothers landfill operations in NC (North Meck, Harrisburg and Apex)
 - Directly at the Marshville facility (contractors, home builders , site clean-up companies)
 - From county programs (Mecklenburg and Haywood)



Carolina Gypsum Reclamation

(continued)

- CGR plans to build a new state-of-the-art processing facility at their Harrisburg NC C&D landfill that could handle 12,000 tpy
- Increase based in part on expanding **L**eadership **E**nergy and **E**nvironmental **D**esign certification and progressive local gov't programs...like Mecklenburg County and Haywood Counties
- Contact Steve Davis at (704) 624-2077 or cgr@griffinbrothers.com



Mecklenburg County Gypsum Recycling Program

- Gypsum segregated at Foxhole landfill
- Call for pick-up when 20 tons is accumulated
- Diverted an average of 120 TPM (July – Oct. 08)
- Diverted an average of 32 TPM (09)
- Possible reasons for reduction:
 - Downturn in economy (construction)
 - Shift from new construction to renovation
 - North Meck and Harrisburg sites (Griffin Brothers) now collecting also



Tear-Off Asphalt Shingles

- 555,000 tpy generated in NC
- New recycling commodity-huge potential
- Asbestos has been single biggest concern
- Asbestos used in shingle manufacturing eliminated in the 1970's and early 80's
- Roofs typically replaced every 12-25 years
- Sampling data show very low risk of asbestos
- Let's start recycling shingles in NC!



The Leaders: Pitt County/Greenville Paving





Pitt County/Greenville Paving





Asphalt Shingle Recovery in NC

- Boggs Paving in Union County is the second to receive a permit issued to construct and operate as an Asphalt shingle collector, processor and user-
Aug 2009
- Should be starting up soon



Increasing Asphalt Shingle Recycling

- Interest is gaining because of these new programs-a few regulatory efficiencies are being worked-out
- Guidance on regulatory procedures will be coming on our webpage soon
- Interested landfills, municipalities, contractors in Union County or Pitt County area should contact: Greenville Paving (252) 902-5706 or Boggs Paving (704) 289-8482



Benefits of Recycling Asphalt Shingles

- Municipalities reduce disposal costs-saves taxpayer \$\$
- Saves landfill airspace – extend landfill life-saves taxpayer \$\$
- It allows paving companies to make a cheaper, high-quality HMA. \$\$ saved by contractors who buy it and the taxpayers who pay for new roads.



Carpet Recovery in NC (approximately 7%)

- Based on EPA and other waste characterization studies:
 - 110,000 TPY disposed in NC
- Recycling and other diversion in NC:
 - Blue Ridge Recycling in Charlotte: 4,800 tpy
 - DC Foam Recycling in the Triangle: 3,000 tpy



Environmental Impact of Recycling 296 mil lbs of Carpet (148,000 tons)

amount recovered nationally in 2007

- 2.5 million barrels of oil not burned
- 230,000 passenger cars not driven for one year
- Equivalent absorption of 27 mil tree seedlings grown for ten years
- 5,407 railcars of coal not burned



All Carpet Is Not Created Equal

- Residential (broadloom) vs. commercial (carpet tile)
- Fiber types (% of production):
 - Nylon 6 (47%): stable market exists
 - Nylon 66 (37%): market development stage
 - Polypropylene (8%)
 - Polyethylene (8%)
 - Other (4%)



Identifying Carpet Fiber





Thank you!

RBAC Website:

<http://www.p2pays.org/rbac/index.html>

Markets Directory:

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

Local Governments:

<http://p2pays.org/localgov/>

Recycling Works Newsletter:

<http://www.p2pays.org/rbac/newsletters.html>