



The North Carolina **Recycling Business Assistance Center**

“Recycling Industry Economic Developers”



Market Assessment

Construction and Demolition Waste (C&D)

Define
Generation
Breakdown
Recovery
Target
Impact



North Carolina Department
of Environment and
Natural Resources



Construction and Demolition Waste



Define

Waste or debris resulting solely from construction, remodeling, repair, or demolition operations on pavement, buildings, or other structures.

C&D waste makes up just over 30% of our disposed waste stream.





Construction and Demolition Waste



Define

Wood

Concrete

Asphalt shingles

Gypsum wallboard

Metals

Brick and block

Cardboard

Plastics

Carpet

Asphalt pavement

Salvageable materials

Land clearing debris

Miscellaneous fines



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Construction and Demolition Waste



91%

Generation

- Wood
- Concrete
- Asphalt shingles
- Gypsum wallboard
- Metals
- Brick and block
- Cardboard
- Plastics
- Carpet
- Asphalt pavement
- Salvageable materials
- Land clearing debris
- Miscellaneous fines

9%



Construction and Demolition Waste



91%

Generation (%)*

Wood – 28%

Concrete – 19%

Asphalt shingles – 16%

Gypsum wallboard – 12%

Metals – 8%

Brick and block – 5%

Cardboard – 2%

Plastics – 1%



Construction and Demolition Waste



Generation (tons)

Wood – 980,000

Concrete – 670,000

Asphalt shingles – 555,000

Gypsum wallboard – 405,000

Metals – 295,000

Brick and block – 170,000

Cardboard – 78,000

Plastics – 21,000

3.18 million tons



Construction and Demolition Waste



Breakdown

Residential

Single family

Multi-family

Non-Residential (Commercial)

Retail

Office

Industrial

Institutional



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Construction and Demolition Waste



Breakdown

Residential
Commercial

Construction
Renovation
Demolition



Construction and Demolition Waste



Breakdown (%)

Residential

Construction – 12%
Renovation – 28%
Demolition – 25%

65%

Commercial

Construction – 6%
Renovation – 16%
Demolition – 13%

35%



Construction and Demolition Waste



Breakdown (tons)

Residential

Construction 424,000

Renovation 977,000

Demolition 886,000

2.3 million tons

Commercial

Construction 228,000

Renovation 546,000

Demolition 441,000

1.2 million tons





Construction and Demolition Waste



Recovery

The current infrastructure in NC for managing material generated from C&D activities includes:

- 54 permitted active C&D landfills
- 5 C&D transfer facilities
- 8 C&D treatment & processing facilities
- 67 LCID landfills
- 20 LCID treatment & processing facilities





Construction and Demolition Waste



Recovery

C&D debris recycling is based on cost-avoidance and not necessarily revenue generation.

The supply of C&D debris is considerably greater than the current demand from C&D recyclers in North Carolina.





Construction and Demolition Waste



Recovery

There is a growing trend of placing C&D recovery operations on the front-end, or on the working face of active C&D landfill operations.

This process can aid in the sustainable recovery of material from the C&D waste stream:

- Increases material diversion
- Extends the disposal capacity for landfill operations
- Creates an added value to the owner



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Recovery

FY 2008-2009

377,810 tons = recycling rate of 10%

Includes material recovered from permitted solid waste facilities
- C&D landfills, transfer stations, and T&P operations, as well
as LCID T&P sites.

Does not include material taken directly to market from jobsite
– metal, clean concrete, cardboard etc.



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Construction and Demolition Waste



Target

Where do we focus?

What materials?

What sector?

What opportunities?



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Construction and Demolition Waste



Target

Compare residential and commercial construction waste



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Construction and Demolition Waste

Target

Compare residential and commercial **construction** waste

Material	Residential construction (%)	Commercial construction (%)
Wood	44	19
Drywall	16	7
Concrete	12	33
Brick	5	7
Roofing	6	10
Metal	2	9
Plastic	1	0.5
Cardboard	5	8
Tons	424,000 tons	228,000 tons
Total % of C&D disposed	12 %	6 %



Construction and Demolition Waste



Target

Compare residential and commercial renovation waste



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Construction and Demolition Waste

Target

Compare residential and commercial **renovation** waste

Material	Residential renovation (%)	Commercial renovation (%)
Wood	30	18
Drywall	5	16
Concrete	9	22
Brick	4	5
Roofing	29	11
Metal	10	13
Plastic	1	0.2
Cardboard	2	1.5
Tons	977,000 tons	546,000 tons
Total % of C&D disposed	28 %	16 %



Construction and Demolition Waste



Target

Compare residential and commercial demolition waste



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Construction and Demolition Waste

Target

Compare residential and commercial **demolition** waste

Material	Residential demolition (%)	Commercial demolition (%)
Wood	32	25
Drywall	11	20
Concrete	22	32
Brick	4	7
Roofing	17	3
Metal	5	12
Plastic	0.5	0
Cardboard	0.5	1.5
Tons	886,000 tons	441,000 tons
Total % of C&D disposed	25 %	13 %



Construction and Demolition Waste



Impact

Recovery of 30% of C&D material that is currently landfilled can lead to additional diversion of **1.05 million tons** of material.

At a disposal rate of **\$30/ton**, this equals a cost avoidance potential of **\$31.5 million**.





R-E-C-Y-C-L-E





Thank You!

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