

Introduction

The Institution Recycling Network

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www.WasteMiser.com

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What is the IRN...

A membership recycling organization serving:

- ✓ Hospitals
- ✓ Colleges & Universities
- ✓ Preparatory Schools
- ✓ State Agencies
- ✓ Other Institutions

The IRN...

What We Do For Our Members:

- ◆ 60+ Commodity Marketing Programs
- ◆ Group Purchase Opportunities
- ◆ Transportation and Hauling
- ◆ Consolidated Reporting, Recordkeeping, and Accounting
- ◆ Vendor Qualification
- ◆ Information and Information-Sharing

Why C&D?

A Very Large Waste Stream

40% of U.S. Raw Materials, 25% of U.S. Solid Waste

More recyclables in one job than most organizations generate in a year

A Very Recyclable Waste Stream

20+ Different Materials

85% - 95% Recycling Rates

Less Expensive Than Disposal

Construction Waste Mgmt. Overview

1. Recoverable materials & markets
2. Costs of recycling versus disposal
3. Barriers and solutions
4. Recycling and LEED

Recoverable Materials: Pre-Demolition

- ◆ Furniture & Furnishings
- ◆ Architectural Salvage
- ◆ Casework
- ◆ Carpet
- ◆ Ceiling Tiles
- ◆ Partition Systems
- ◆ Lighting (bulbs, ballasts, fixtures)
- ◆ Doors and Windows
- ◆ Wiring and Cable
- ◆ HVAC Equip't
- ◆ Bathroom Fixtures

Recoverable Materials: Demolition & Renovation

- ◆ Landclearing debris
- ◆ Asphalt paving
- ◆ Concrete, brick, block
- ◆ Wood (incl. treated & painted, plywood, OSB)
- ◆ Metals (ferrous & nonferrous)
- ◆ Glass
- ◆ Asphalt shingles
- ◆ Commercial roofing
- ◆ Slate, other roofs
- ◆ Mixed debris

Recoverable Materials: New Construction

- ◆ Concrete, brick, block
- ◆ Wood (dimensional, ply, OSB, etc.)
- ◆ Metals (HVAC, plumbing, elec.)
- ◆ Gypsum wallboard
- ◆ Cardboard, other packaging
- ◆ Mixed debris

Recycling Works ... Again

◆ Concrete & Masonry
St. Paul's School
Before



◆ Aggregate for Roads
and Sidewalks
After



And Again...

◆ Clean Wood
Boston College
Before



◆ Mulch & Boiler Fuel
After
*(If not OK as
surplus for reuse)*



And Again...

◆ Gypsum Wallboard
Cambridge City
Hall Annex
Before



◆ Gypsum Wallboard
After



And Again...

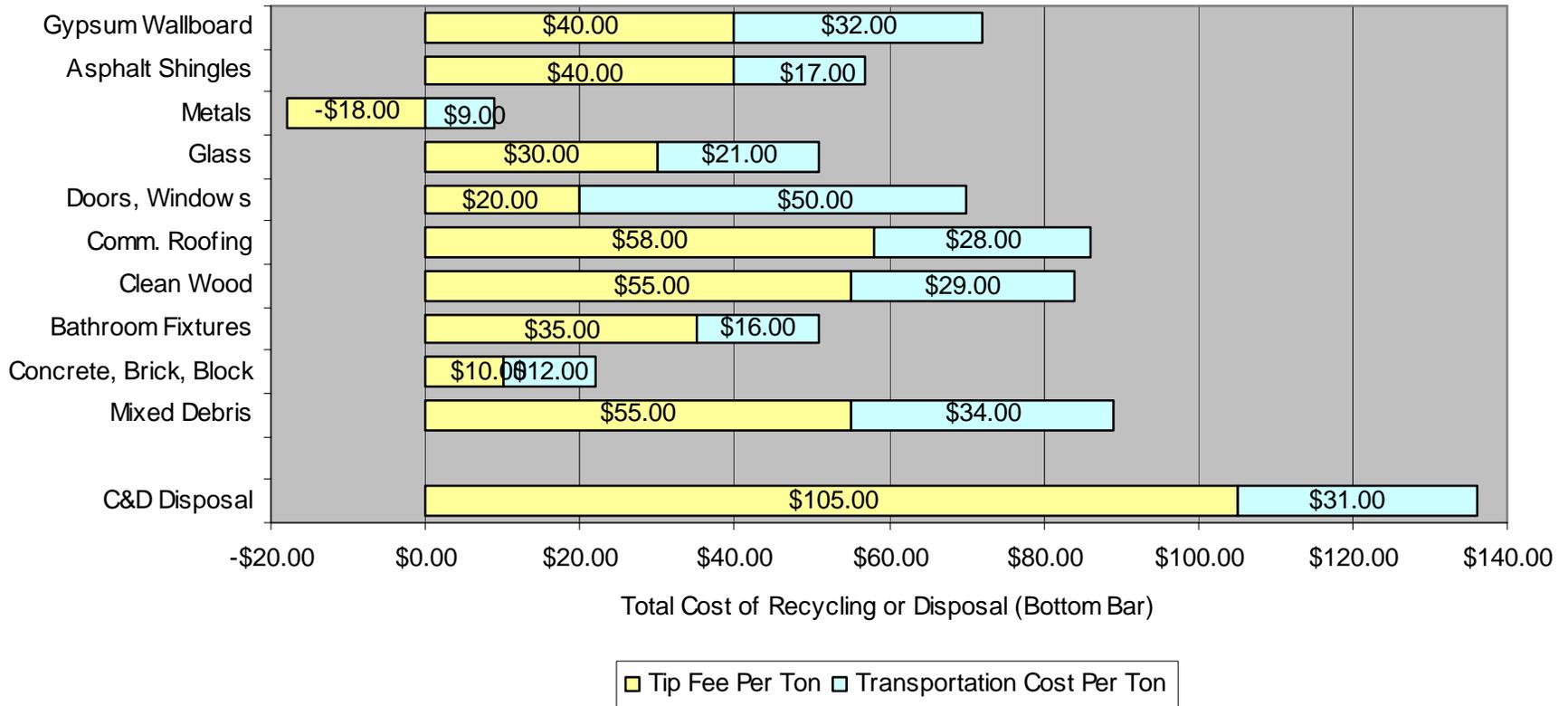
◆ Old Ceiling Tiles
(Dartmouth College)
Become New Ceiling
Tiles



◆ Old Window Glass
(Northeastern
University)
Becomes New
Window Glass or
Aggregate for Paving



Costs: Recycling vs. Disposal



Compared to disposal (bottom bar), recycling costs much less for *all* construction and demolition materials.

Barriers and *Solutions*

“Recycling costs too much”

Plain false. In almost all cases, recycling is less expensive than disposal, often much less. (Many contractors already recycle job site materials, because of cost savings.)

Contractors do not like to be “forced” to recycle, or to have recycling added on after bid award.

Barriers and *Solutions*

"Recycling delays the job"

Not because of labor. Workers train easily and learn quickly.

Not because of service. Hauling recyclables is the same as hauling waste.

Not because of logistics. Recycling is coordinated specifically to the job site, to fit in the project schedule.

Barriers and *Solutions*

“No room on site to recycle”

Not with the proper scheduling and containers. Recycling services can be coordinated with construction schedule, and properly sized containers can be matched to job segments.

Barriers and *Solutions*

“We’ll get poor service”

Old myth. There are more haulers and end markets for recyclables than ever before. Service is consistent and reliable.

Barriers and *Solutions*

“We have no RFP or contract language for C&D recycling”

RFP language is widely available from multiple sources, including CSI, CMRA, IRN, and others

www.WasteMiser.com

Barriers and *Solutions*

"Construction planners and contractors are not waste managers"

You're right. The many issues of proper C&D management are best handled by someone who makes this a specialty.

Recycling and LEED

◆ 50% Recycling = 1 Point

◆ 75% Recycling = 1 Point

◆ Innovation Possibilities

✓ 90%+ Recycling Rate

✓ Return materials to the job

- Examples: Aggregate, wood, "waste-to-art"

Recycling and LEED

What's Important ?

- ◆ Early Planning
- ◆ Waste Management Plan
- ◆ Excellent Documentation
 - ✓ Weights, markets, process
- ◆ Be Thorough – Don't Miss a Waste
 - ✓ Example: Furnishings, Landclearing

IRN as “Waste Manager”

- ◆ RFP and contract development
- ◆ Pre-bid and pre-job planning, on-site coordination and troubleshooting
- ◆ Job site training and signage
- ◆ Dedicated logistics (markets, containers, transportation)
- ◆ Complete accountability and reporting for all materials
- ◆ Waste Management Plan and LEED documentation

Example: Gut & Renovation Boston Scientific, Marlborough, MA

Recycling Results

- ◆ 702 tons of materials reused, recycled
- ◆ 92% recycling rate

Cost Avoidance

- ◆ 69% savings, recycling vs. disposal
(Recycling cost = \$21,000, or
\$29.90/ton)

IRN Partners in C&D Recycling

21 Colleges

8 Medical Facilities

5 Prep Schools

15 General
Contractors

18 Architects

16 Haulers

>25 Material End
Markets



Surplus Property

◆ What We Can Handle

- ◆ *Medical furnishings: Beds, patient room furnishings, patient care items*
- ◆ *Office, administrative & reception furnishings, equipment, supplies*
- ◆ *Medical equipment & supplies*
- ◆ *Fixed assets (doors, windows, etc.)*

◆ Quantities

- ◆ *Partial truckloads to multiple trailers*

Surplus Property

◆ What We Can Do

- ◆ *Turnkey projects: Planning, labor, oversight, recordkeeping & reporting*
- ◆ *“Deconstruction” for fixed assets*
- ◆ *Transportation only*

Surplus Property

- ◆ 2005 Surplus Management
 - ◆ *60 projects; 1,500 tons; 208 containers*
- ◆ Most goes to U.S. and international disaster relief & economic development
- ◆ Network with regional municipalities, schools, nonprofits
 - ◆ *Working with states to expand regional surplus networks*

Surplus Property

IRN – MHA Program to Capture and
Distribute Surplus for Katrina, Rita,
and Wilma

*Any Type, Any Quantity of Surplus is
Desperately Needed.*

None Will Be Discarded !