

Bulky Wastes: Increasing Reuse & Recycling in Rural Areas

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What is NEWMOA?

- Non-profit, non-partisan interstate association
- Solid waste, hazardous waste, waste site cleanup, & pollution prevention programs
- CT, ME, MA, NH, NJ, NY, RI, & VT
- Formally recognized by EPA in 1986
- More information at: www.newmoa.org



Promoting Bulky Waste Reuse & Recycling in Rural Areas

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What are Bulky Wastes?

- Carpet
- Furniture
 - ❖ Wood
 - ❖ Upholstered
 - ❖ Metal
 - ❖ Plastic*
- Mattresses
- Large Rigid Plastics like:
 - ❖ Kiddie pools
 - ❖ Plastic furniture*
 - ❖ Play structures

Project Partners

- **Maine**
 - ❖ Androscoggin Valley Council of Governments
 - ❖ Department of Environmental Protection
- **Massachusetts**
 - ❖ Franklin County Waste Management District
 - ❖ Department of Environmental Protection
- **Vermont**
 - ❖ Central Vermont Solid Waste Management District
 - ❖ Northeast Kingdom Waste Management District
 - ❖ Department of Environmental Conservation

Project Outline

- Stakeholder Group in each partner location
- Guidance documents:
 - ❖ Furniture
 - ❖ Mattresses
 - ❖ Carpet
 - ❖ Large Rigid Plastics
- Workshop in each partner location
- “What to do” fact sheets in each location
- Outreach to others
- Project website: www.newmoa.org/solidwaste/projects/bulky

Current Practice

- Most disposed of
- Transfer stations charge drop-off fees
- Many curbside programs also charge fees



| | |
|---|-----------|
| **Please request placement of these items, do not throw into container.** | |
| Twin / Single Mattresses or Boxsprings | \$30 each |
| Full / Queen / King Mattresses or Boxsprings | \$20 each |
| Couch | \$20 each |
| Loveseat | \$15 each |
| Upholstered Chair | \$10 each |
| End tables, wooden chairs, kitchen/dining room tables, bookcases, bureaus | \$5 each |
| Area rug | \$10 each |
| Wall-to-wall carpet | \$25 each |
| Sink, toilet | \$10 each |

Benefits of Reusing & Recycling Bulky Waste

- Saves money on landfill disposal costs
 - ❖ Transportation costs too
- Conserves energy and raw materials
 - ❖ Saves landfill space too
- Returns products and materials back into the economy and create jobs
- Helps people who need these items but cannot afford to buy them new

Some Reuse is Happening

- Yard sales
- Online sales (e.g. Craigslist, e-bay)
- Sale to second-hand shop (or consignment)
- Give to friends/family or via FreeCycle
- Donation to charity that operates a second-hand shop and/or supplies low-income clients

Carpet

A Major Factor in Bulky Bins

Carpet is heavy – so it's expensive to dispose of



Carpet Basics

- Carpet composed of: face fiber, backing material, and adhesive
- Nylon face fiber has value & is recyclable
- Until recently most carpet was made from Nylon 6 or Nylon 6,6
 - ❖ With some made from Olefin (polypropylene) – which also has value when recycled
- Now over 50% of carpet is made from PET – the recovered fibers are low quality and have no market – a big problem

Carpet Recycling Basics

- Commercial facilities process incoming
 - ❖ Must be dry and free of mold/contamination
- Sort incoming carpet by fiber type
 - ❖ PET has no value & carpet is disposed



Carpet Recycling Basics

Nylon & Olefin fiber sheared from backing

- ❖ Backing often disposed
- ❖ Processors with high tech equip can process backing into polypropylene & calcium carbonate (have markets)



Carpet Recycling Basics

- Fibers cleaned and sold
 - ❖ Made into variety of products including new carpet
- With more PET, processors are selling less & paying more for disposal
 - ❖ Now charging to accept mixed loads (don't really want)
- Carpet recyclers still exist:
 - ❖ MA & NJ
 - ❖ Commercial carpet tiles
 - Generated in large quantities – develop relationships with installers & construction companies
 - PVC backing has value
 - ❖ Process & recycle other products too

Community Carpet Recycling

Communities can collect & send for recycling

- ❖ Must be kept protected from weather
 - Rent a trailer - partner with communities/businesses
- ❖ Expense to transport (processors in MA & NJ)
 - Partner with other communities/businesses to share costs
- ❖ Processors charge fee to accept mixed loads
 - Charge drop-off fee to help offset
- ❖ Or pre-sort and only send nylon & Olefin
 - Need scanner to ID fiber type (expensive)
 - Requires labor (volunteers?) & cost to dispose of carpet without value
 - Charge drop-off fee to help offset

Bottom Line

- ~50 percent of carpet can be recycled
- Economics not favorable *at this time*
 - ❖ Changes coming! Manufacturers to start labeling the backing with the face fiber type – will enable easy separating at collection and/or recycler
- Evaluate:
 - ❖ Current transportation & disposal costs
 - If carpet removed, waste disposal transport & costs lower
 - ❖ Current fees collected for carpet disposal
 - ❖ Collection feasibility – location, container, partners
 - ❖ Cost to transport to recycler & tipping fee
 - ❖ Time & energy to change status quo

EPR Potential for Carpet

Extended Producer Responsibility (EPR)

- States have laws for similar consumer products – for example:
 - ❖ Paint: CA, CO, CT, ME, MN, OR, RI & VT
 - ❖ Mattresses: CA, CT & RI
 - ❖ Fee assessed when purchasing new item that funds end-of-life collection, transport, and recycling
 - ❖ Must be convenient & no fee to use
- Potential application for carpet
- Information at Product Stewardship Institute: www.productstewardship.us

Feedback Questions

- Current practice in your district?
 - ❖ Allow drop-off at the transfer station?
 - ❖ Special fees for carpet?
 - ❖ What happens to them?
- Know of any local reuse options?
- Know of anyone sending carpet for recycling?
- Thoughts on feasibility of partnering with others to set up a carpet recycling system?

Furniture & Mattresses

Similar But Different!

Furniture & Mattresses

Reuse

Reuse

- True reuse is when the item is kept “whole” & is sold or donated for use again
- This option is only appropriate for **good quality** items in **good condition**

Reuse

Communities can partner with local non-profit to promote donation and/or hold a collection event for residents to donate items

- ❖ Habitat for Humanity ReStores: Portland closest?
(no carpets, upholstered furniture, or mattresses)
- ❖ Salvation Army: Lewiston (no store?)
- ❖ Goodwill: Lewiston & Auburn (no mattresses)
- ❖ Saint Vincent de Paul: Lewiston (small items only)
- ❖ Furniture Banks – www.furniturebanks.org
 - Serve low income families & individuals moving from shelters, fire, refugee resettlement, domestic violence, etc
 - Mattresses needed - families need more than one bed
 - Furniture Friends in Portland www.furniturefriendsportland.org

Reuse

What about bugs in upholstered furniture and mattresses?

- ❖ Treatment: heat, cold, CO₂, or pesticides



- ❖ Exclude upholstered furniture and mattresses from program – or strict screening of donations
 - Furniture Friends does not accept furniture or mattresses from “inner city” Portland

The Wish Project Sanitation Process

Large Scale Sterilization:

- 4 hours of active heating
- 2 tons per cycle
 - 60 Full sized mattress sets or
 - 28 Couches or
 - 70 chairs



Reuse

Communities can also facilitate local reuse by sponsoring a:

- ❖ Permanent Swap Shop
- ❖ One-day swap event
- ❖ Fix-it clinic



Swap Shop/Event

Need a covered or sheltered location

- ❖ If don't have an indoor space:
 - Hold in summer only
 - Rent a tent for one-day event



Swap Area @ Transfer Stations



"Double Your Trash Back if Not Pleased With Our Service!"

Swap Shop/Event

- Need staff and/or volunteers
 - ❖ Partner with local group/business
- Need to move items that remain
 - ❖ Partner with local charity
 - ❖ Make arrangements with a private hauling service like 1-800-Got-Junk (they reuse/recycle!), or dispose
 - ❖ Charge drop-off fee to off-set expenses, but:
 - Lower fee than bulky waste disposal fee
 - Emphasize that donations are tax deductible
- Events take a lot of effort to set up the first time or two & might not seem successful
 - ❖ But, if community can count on it as a regular option, momentum will build (and the event will be much less work!)

Furniture (not mattresses!)

Refurbish/RePurpose

Furniture: Refurbishing

- Refurbishing, remanufacturing, rebuilding, or renovating furniture means that some or all components of the item are removed & replaced
- Examples: furniture re-upholstering, leather repair, woodworking, carpentry



Furniture: Refurbishing

- There are many examples of “fix-it clinics” or “repair cafes” across the country
<http://repaircafe.org/en/>
- Community host locations: local library, food bank, senior center, school
- Need volunteers with repair expertise – start with:
 - boy/girl scout troops, veterans organizations, small businesses, and social media!

Furniture: Repurposing

- Social Media is a great source for inspiration & helpful tips



Photos Source: Pinterest

Furniture & Mattresses Recycling

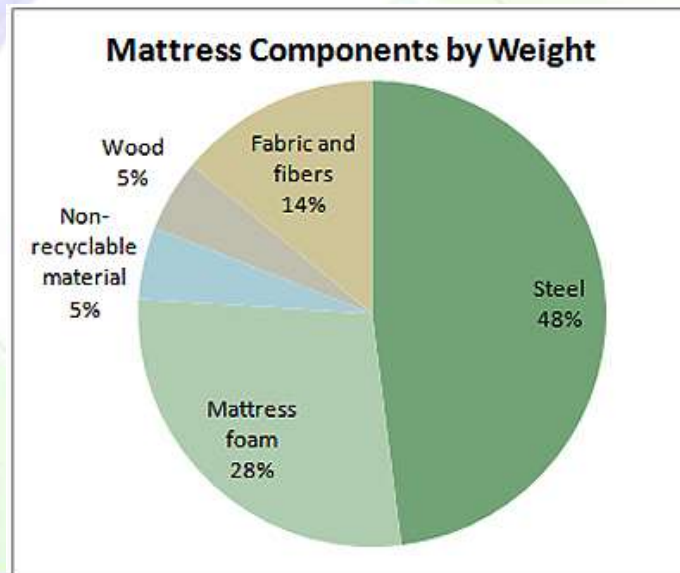
Furniture Collection in Bulky Bins



Recycling

- Recycling is when the item is separated into its individual components that are then processed & used to create new products
- Examples: wood, metal, cotton, & wool

Recycling



Recycling Upholstered/Mattress

Communities can:

- ❖ Promote deconstruction into individual components to reduce the overall “bulk” & allow for easier recycling
- ❖ Collect & investigate sending to a C&D recycler rather than traditional disposal
 - Most C&D recyclers will take furniture – easy to crush with bucket loader and run through system
 - ReEnergy in Lewiston is a possibility
 - Most C&D recyclers do NOT want mattresses!

Recycling

Communities can promote dismantling



Deconstruction

Handling materials at transfer stations:

- Foam or other stuffing – probably dispose
- Cover fabric materials (cotton, wool, leather) – clothing collection systems handle all textiles **if clean** (can be stained/ripped – but must be clean!)
- Clean wood – many transfer stations have free drop-off
- Metal – many transfer stations have free drop-off

Recycling Other Furniture

- Wood furniture
 - ❖ Stained, painted, or treated with chemicals cannot be recycled as clean wood
 - ❖ Manufactured wood (fiberboard, particle board, & plywood) cannot be recycled as clean wood
 - ❖ Investigate collecting & sending to a C&D recycler
- Metal furniture
 - ❖ Most communities already collect & recycle metals

More on Mattresses



The Problem with Mattresses

- 15-20 million mattresses & box-springs are disposed of each year in the U.S.
- Each occupies about 40 cubic feet of landfill space



Mattress Problems

- Mattresses are hard to compact, & can easily catch in equipment used in landfill & incinerator operations
- As a result, some disposal facilities require the segregation of mattresses from other solid waste and/or charge an additional fee – this increases costs for communities

Recycle vs Donation

Recycle if:

- Mattresses that are king sized
- If they are damaged: dry rotted, grossly stained, have bugs, or have broken box springs
- If they have been left outside in the rain
 - ❖ If they do get wet, let them dry naturally before sending to recycler

Mattress Recycling



Mattress Recyclers

Do recycle the stuffing!



Mattress: Recycling

Communities can collect & send to recycler

- ❖ Must be kept protected from weather
- ❖ Expense to transport (recyclers in CT, MA, & RI)
- ❖ Recyclers charge fee to accept



EPR for Mattresses

- Extended Producer Responsibility (EPR)
 - ❖ Requires manufacturers to establish a program to collect, transport, & recycle their products
 - ❖ Consumers pay a small fee at the point of purchase to finance end-of-life recycling/disposal costs
 - ❖ State must require EPR
 - ❖ Mattress manufacturers are on board – set up the Mattress Recycling Council (MRC)
www.mattressrecyclingcouncil.org
- States with EPR for mattresses
 - ❖ Connecticut, Rhode Island, & California

Mattress EPR in CT: Results

Success of Connecticut's EPR Program

- ❖ Started in May 2015
- ❖ Administered by the Mattress Recycling Council (MRC), with input from the CT DEEP
- ❖ An average of **10,000 mattresses per month** are now recycled in CT
- ❖ More than 90 municipalities participate in program
- ❖ Communities report savings thousands of dollars in avoided disposal costs
- ❖ Supports 40-50 private sector jobs

Mattress: Recycling

Is occurring in Massachusetts without EPR:

- Non-profit:
 - ❖ UTEC in Lowell: mission to help troubled youth with employment – still charge drop-off fee
- For-profit:
 - ❖ Raw Material Corporation in Gardner & Conigliaro Industries in Framingham
 - ❖ Recycle lots of different materials
 - ❖ Mainly service large generators – hotels & colleges
- Communities can get MassDEP assistance - new
 - ❖ Pays hauling & recycling fee if community collects

Bottom Line

- Potential for greater reuse & recycling
 - ❖ Promote reuse/repurpose ideas & existing options
 - ❖ Support swapping: shop and/or one-day event
 - ❖ Hold collection event for donation – need partner
 - ❖ Organize a fix-it clinic
 - ❖ Collect & send for recycling – evaluate:
 - Current transportation & disposal costs
 - If removed from waste, disposal transport & costs lower
 - Current fees charged for mattress & furniture disposal
 - Collection feasibility – location, container
 - Cost to transport to recycler & tipping fee
- Determine if there is...
 - ❖ Time & energy to change the status quo

Feedback Questions

- Current practice in your district?
 - ❖ Allow drop-off at the transfer station?
 - ❖ Special fees for furniture? Mattresses?
 - ❖ What happens to them?
- Local reuse options for furniture? Mattresses?
- Thoughts on feasibility of partnering to set up:
 - ❖ Donation collection, annual swap, or fix-it events?
- How about:
 - ❖ Setting up a swap shop?
 - ❖ Dismantling furniture and/or mattresses?
 - ❖ Collecting furniture and sending to C&D recycler?
 - ❖ Collecting mattresses and sending to recycler?

Bulky Rigid Plastics

Rigid Plastics: Reuse

- Appropriate for good quality
- Communities can hold a swap event
- Need to move items that remain
 - ❖ Partner with local MRF for recycling



Hybrid Reuse/Recycling

Northampton's Reuse Committee's Fall 2015 Bulky Rigid Plastic Collection

Saturday, November 7, 9am-Noon
Smith Vocational High School



Bring your large, clean, rigid, plastic
discards for sharing & recycling!

All collected items will
be available to the public free of charge



Northampton Reuse Committee's Spring Recycling Rally

Saturday, April 30, 2016 • 9 AM to Noon
Smith Vocational High School, 80 Locust Street, Northampton

- ➔ **Bulky Rigid Plastic**
Nothing flexible or curvy;
no PVC
- ➔ **Pellet Fuel Bags**
Must be dry-free and dry
- ➔ **White Styrofoam**
Large white chunks only.
Must be rigid, dry & clean
- ➔ **Bicycles**
via *Bikes Not Bombs*
Suggested \$10 per bike donation
to offset shipping expenses
- ➔ **Document Shredding**
Level of 2
curbide recycling sized boxes

For more info visit www.northamptonre.com/hybrid-reuse
or call 413-687-1028



Rigid Plastics: Recycling

Or communities can sponsor ongoing collection at transfer station

- ❖ Need partnership to take it!



Photos from a multi-town collection site in MA

Rigid Plastics: Recycling

Partnership with MRF

- ❖ Most will take if asked: ecomaine & Casella willing to work with communities
 - MRRA can market too (if baled)
- ❖ Typically only plastic – remove metal and fabric (e.g. car seats!)
- ❖ Require a large quantity
 - Can't process through MRF – will bale separately
 - Don't have storage space for small amounts
- ❖ *Current* plastic recycling market weak so might not make \$ - but probably cost neutral?
 - Evaluate recycling transport/tipping fees against current waste transport & disposal costs

Bottom Line

- Fewer collection concerns
 - ❖ Weather less of a factor – plastic can get wet!
- Reuse
 - ❖ Hold community swap event
- Recycle – evaluate:
 - ❖ If your MRF will work with you – most will if asked!
 - If there is a cost – likely offset by reduced waste transport & disposal
 - ❖ One day event or ongoing collection
 - If ongoing collection – will need location & container
- Determine if there is...
 - ❖ Time & energy to change status quo

Feedback Questions

- Current practice in your district?
 - ❖ Allow drop-off at the transfer station?
 - ❖ Special fees?
 - ❖ What happens to them?
- Know of anyone sending large rigid plastics for recycling?
- Thoughts on feasibility of:
 - ❖ Holding a swap event?
 - ❖ Collection & transport to MRF for recycling?

Zero Waste Connection A Professional Social Network

Mission & Goals

- Promote sustainable consumption and pollution prevention as the preferred methods of achieving zero waste
- Provide forums for zero waste professionals to share information on program development and implementation
- Foster innovation in zero waste programs through the exchange of ideas in real time
- Increase the adoption of zero waste practices among practitioners
- www.zerowasteconnection.org

Questions?

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