

# 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
- [www.newmoa.org](http://www.newmoa.org)



## Promoting Bulky Waste Reuse & Recycling in Rural Areas

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## What are Bulky Wastes?

- Carpet
- Furniture
  - ❖ Wood
  - ❖ Upholstered
  - ❖ Metal
- Mattresses & Box Springs
- Large Rigid Plastics
  - ❖ Kiddie pools
  - ❖ Plastic furniture
  - ❖ Play structures

## Bulky Waste 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
- Workshops
- “What to do” fact sheets in each location
- Project Website: [www.newmoa.org/solidwaste/projects/bulky](http://www.newmoa.org/solidwaste/projects/bulky)

## Current Practice

- Most is disposed
- 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                              | \$30 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 & transportation
- Conserves energy & raw materials
- Saves landfill space
- Returns products & materials back into the economy & create jobs
- Helps people who need these items but cannot afford to buy them new

## Some Reuse is Happening

- Given to friends/family or via Free-Cycle
  - Orange Free-Cycle Group
  - Greenfield Free-Cycle Group
- Neighborhood yard sales
- Online sales (e.g., Craigslist, e-bay)
  - Groton Free Stuff Yahoo Group
  - Greenfield Online Yard Sale Group on FB
  - Western MA Craig's List
  - Worcester County Craig's List

## Some Reuse is Happening

- Second-hand shops or consignment
- Charities that operate second-hand shops or supply goods to low-income clients
  - Central MA Housing Alliance – Worcester
  - Survival Center – Turners Falls
  - Goodwill – Worcester
  - Habitat for Humanity – Leominster, Worcester
  - Salvation Army Stores – Gardner, Greenfield, Fitchburg, Framingham, Northbridge, Spencer, Worcester
  - Savers – Marlborough, Worcester



# Carpet

## Major Material in Bulky Bins

Carpet is heavy – so it is expensive to dispose of



## Carpet Basics

- Carpet composed of: face fiber, backing material, & 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 & have no market value

## Carpet Recycling Basics

- Commercial facilities process
- Must be dry & 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 (markets)



## Carpet Recycling Basics

- Fibers cleaned & 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
- ❖ Carpet recyclers
  - ❖ MA & NJ – focused on commercial carpet tiles
    - Generated in large quantities through relationships with installers & construction companies
    - PVC backing has value
  - ❖ Process & recycle other products



## 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% 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 &/or recycler
- Evaluate
  - ❖ Transportation & disposal costs
  - ❖ Fees collected for carpet disposal
  - ❖ Collection feasibility – location, container, partners
  - ❖ Cost to transport to recycler & tipping fee

## Feedback Questions

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

## Furniture & Mattresses

## Collection in Bulky Bins



## Community Reuse

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

- ❖ Habitat for Humanity
- ❖ Salvation Army
- ❖ Goodwill
- ❖ Saint Vincent de Paul
- ❖ Furniture Banks – [www.furniturebanks.org](http://www.furniturebanks.org)
  - Serve low income families & individuals moving from shelters, fire, refugee resettlement, & domestic violence
  - Mattresses needed - families need more than one bed

## Reuse Challenges

What about bugs in upholstered furniture & mattresses?

- ❖ Treatment: heat, cold, CO<sub>2</sub>, or pesticides
- ❖ Exclude upholstered furniture & mattresses from program, or strict screening of donations



## 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
  - 70 chairs



## Reuse Events

Communities can also facilitate local reuse by sponsoring a:

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



## Swap Shop/Event

Need staff and/or volunteers

- ❖ Partner with local group/business





## 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 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
    - Lower fee than bulky waste disposal fee
    - Emphasize that donations are tax deductible
- Events take 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 (& the event will be much less work!)

## Furniture Repurposing

- 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 Examples

- 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 – boy/girl scout troops, veterans organizations, small businesses

## Furniture Repurposing

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



Photos Source: Pinterest

## Problems with Mattress Waste

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

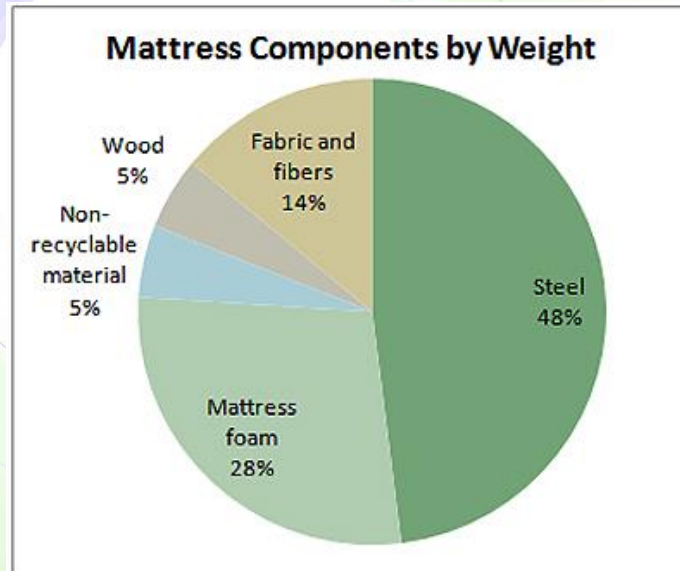


## Mattress Issues

- 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 &/or charge an additional fee – this increases costs for communities



## Recycling



## 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 Upholstered/Mattress

Promote dismantling to separate mattresses into individual components

- ❖ Reduces the overall “bulk” & allows for easier recycling



## 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

## 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 Recovery Corporation – Gardner
  - ❖ Conigliaro Industries – Framingham
- Communities can get MassDEP assistance
  - ❖ Mattress collection trailer – Greenfield
  - ❖ Pays hauling & recycling fee if community collects

## Mattress Recycling



## Mattress Recyclers

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





## Recycling Upholstered/Mattress

- ❖ Collect & investigate sending to a C&D recycler rather than traditional disposal
  - ❖ AKS Management – Fitchburg
  - ❖ Devens Recycling Center – Devens
  - ❖ Hary & Sons – Westborough, Fitchburg
  - ❖ Tri-County Recycling – Ware
  - ❖ Waste Management – Leominster
- ❖ Most C&D debris recyclers will take furniture – easy to crush with bucket loader & run through system, however many do NOT want mattresses

## Recycling Other Furniture

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

## Bottom Line

- Potential for greater reuse & recycling
  - ❖ Promote reuse/repurpose ideas & existing options
  - ❖ Support swapping: shop &/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
  - ❖ Current fees charged for mattress & furniture disposal
  - ❖ Collection feasibility – location, container
  - ❖ Cost to transport to recycler & tipping fee

## 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 &/or mattresses?
  - ❖ Collecting furniture & sending to C&D recycler?
  - ❖ Collecting mattresses & sending to recycler?



# Bulky Rigid Plastics

## Rigid Plastics: Reuse

There is high potential for reuse & recycling of these items because they are durable and can get wet



## 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

- 1 → **Bulky Rigid Plastic**  
Nothing flexible or crinkly,  
no PVC
- 2 → **Pellet Fuel Bags**  
Must be dirt-free and dry
- 3 → **White Styrofoam**  
Large white chunks only.  
Must be rigid, dry & clean
- 4 → **Bicycles**  
via Bikes Not Bombs  
Suggested \$10 per bike donation  
to offset shipping expenses
- 5 → **Document Shredding**  
Limit of 2  
curbside recycling-sized boxes



For more info visit [www.northamptonma.gov/reduce-waste](http://www.northamptonma.gov/reduce-waste)  
or call 413-557-1059



## Rigid Plastics: Recycling

Communities can sponsor ongoing collection  
at transfer station



## Rigid Plastics: Recycling

Partner with MRF - most will take if asked

- ❖ Springfield Materials Recycling Facility

Other considerations

- ❖ Typically only take plastic – remove metal & 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
- Evaluate recycling options
  - ❖ 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

## 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?
- Feasibility of
  - ❖ Holding a swap event?
  - ❖ Collection & transport to MRF for recycling?

## Questions?

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