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

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
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
~50 percent of carpet can be recycled

Economics not favorable *at this time*

- Changes coming! Manufactures 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

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
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](http://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](http://www.furniturefriendsportland.org)

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

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
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.

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
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
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!
Communities can promote dismantling

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
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 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
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
**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 manufactures are on board – set up the Mattress Recycling Council (MRC) [www.mattressrecyclingcouncil.org](http://www.mattressrecyclingcouncil.org)

**States with EPR for mattresses**
- Connecticut, Rhode Island, & California

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**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
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

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**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

1. Bulky Rigid Plastic
   - Nothing broken or certify, no PVC

2. Pellet Fuel Bags
   - Must be dry and clean

3. White Styrofoam
   - Large white chunks only, Must be dry & clean

4. Bicycles
   - via Bikes Not Bombs
   - Suggested $10 per bike donation to offset shipping expenses

5. Document Shredding
   - Level of 2, curbside recycling level banned

For more info visit www.northamptonmas.gov/reduce-wrap or call 413-587-1239
Or communities can sponsor ongoing collection at transfer station

- Need partnership to take it!

Photos from a multi-town collection site in MA

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?
**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](http://www.zerowasteconnection.org)

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**Questions?**

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