Bulky Wastes: Increasing Reuse & Recycling in Rural Areas

Jennifer Griffith
Northeast Waste Management Officials’ Association (NEWMOA)

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?

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

Saves money on landfill disposal costs
- Transportation costs too
- Think big – if material is removed from bulky disposal bin – less to disposal – haul less
Conserves energy & raw materials
- Saves landfill space too
Returns products & materials back into the economy & creates 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, eBay)
- Sale to second-hand shop (or consignment)
- Give to friends/family or via FreeCycle
  - Front Porch Forum – used in NEK?
  - FreeCycle: Essex, Orleans & Washington counties, & Saint J - others?
- Donation to charity that operates a second-hand shop and/or supplies low-income clients

Bulky Rigid Plastics
Rigid Plastics: Reuse

- Appropriate for good quality
- Communities can:
  - Promote donation to charity – especially items for kids
  - Hold a swap event
- Swap events: need to move items that remain
  - Partner with local recycling option

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
2. Pellet Fuel Bags
3. White Styrofoam
4. Bicycles
5. Document Shredding
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: Chittenden & Casella willing to work with communities
  - Might charge a drop-off fee
- 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
Few collection concerns
  - Weather not 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

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?
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**.

Partner with local non-profit to promote donation and/or hold a collection event:

- Habitat for Humanity ReSale Shop in Saint Johnsbury (mainly building materials – but will take items that will sell)
- HOPE in Lyndonville (limited space – but facilitates swapping & might do more in future)
- ReSource in Burlington & Barre (& Hyde Park) (good furniture & area rugs at all, mattresses only in Burlington)
- Salvation Army (store in Saint Jay?)
- Goodwill: S. Burlington & Williston (no mattresses)
- Vermont Refuge Resettlement
  - Mattresses needed - families need more than one bed
- Furniture Banks – [www.furniturebanks.org](http://www.furniturebanks.org)
  - None in Vermont – closest in Portland, ME & Lowell, MA
What about bugs in upholstered furniture and mattresses?

- Treatment: heat, cold, CO₂, or pesticides
  - ReSource in Burlington has a “hot box”

- Exclude upholstered furniture and mattresses from program – or strict screening of donations

Communities can also facilitate local reuse by sponsoring a:

- Permanent Swap Shop
- One-day swap event
- Fix-it clinic
Need a covered or sheltered location

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

“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 (to take good quality items)
  - Make arrangements for disposal - private hauling service like 1-800-Got-Junk (they reuse/recycle!)
  - 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!
Social Media is a great source for inspiration & helpful tips

Photos Source: Pinterest

Furniture & Mattresses
Recycling
Furniture Collection in Bulky Bins

Recycling

Mattress Components by Weight

- Steel: 48%
- Mattress foam: 28%
- Fabric and fibers: 14%
- Non-recyclable material: 5%
- Wood: 5%
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
  - Myers here in Vermont does not recycle furniture - disposes
  - Some C&D recycler do take furniture – easy to crush with bucket loader and run through system
  - But – C&D recyclers do NOT want mattresses!

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
  - Myers cannot process – clean wood only
  - Other C&D recyclers can – different products
- Metal furniture
  - Most communities already collect & recycle metals
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

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**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!
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 set up the Mattress Recycling Council (MRC) [www.mattressrecyclingcouncil.org](http://www.mattressrecyclingcouncil.org)

- States with EPR for mattresses
  - Connecticut, Rhode Island, & California
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 $$ 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
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?
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
Nylon & Olefin fiber sheared from backing
- Backing often disposed
- Processors with high tech equip can process backing into polypropylene & calcium carbonate (have markets)

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
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
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?
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?

Jennifer Griffith
jgriffith@newmoa.org
(617) 367-8558, ext. 303

NEWMOA
89 South Street, Suite 600
Boston, MA 02111