Improving Safety & Reducing Waste at Rural Transfer Stations

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Northeast Kingdom Waste Management District
Lyndonville, VT

What is NEWMOA?
Northeast Waste Management Officials’ Association
• 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

Leading the Northeast to a Sustainable, Waste-Free Future
Improving Safety & Reducing Waste at Rural Transfer Stations

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Project Partners

Vermont
- Northeast Kingdom Waste Management District
- Department of Environmental Conservation

New Hampshire
- North Country Council
- Department of Environmental Services
Consumer Handouts:
- Reducing Your Waste
- The Benefits of Reuse...
- WHY Recycle...
- Recycle Right!
- Don’t Trash That!

Accompanying Posters
Local Workshops
Project Website: www.newmoa.org/solidwaste/projects/transferstations/

Short Introduction
- Jennifer Griffith, NEWMOA

Quick “before” survey

Improving Safety at Transfer Stations
- Non-regulatory!
- Paul Tomasi, NEKWMD; Jeff Bourdeau, VT DEC; Dan Whipple VOSHA; Jim Carrien, VLCT

Break – refreshments

Reducing Waste Disposal
- Rachel Smith & Jennifer Griffith, NEWMOA

Quick “after” survey
Improving Safety

Objectives:
- Raise awareness of common issues
  - Lots of photos…
- Spark discussion
- Develop practical suggestions for improvement
- Resulting in safer transfer stations for both workers & residents!
Topics:

- Equipment safety
- Personal Protective Equipment (PPE)
- Weather & extreme temperatures
- Traffic safety
- Slip/Trip/Fall hazards
- Hazardous & Universal Waste
- Blood borne pathogens, sharps, first aid
- Ergonomics
- Fire & electrical safety
- Miscellaneous

Compactor

- Most dangerous equipment operated at the transfer station
  - The only motorized equipment you have?

- Need fail-proof control to prevent injury
  - Check drop-off area before you power on
  - Power requires active continuous pushing
  - Enough separation from power on to compactor opening that cannot reach hand in
Compactor Safety

See a potential issue?

Compactor Safety

See any potential hazards?
A good set-up?

Proper clothing for conditions:
- Headwear (hard hat, sun hat, etc.)
- Footwear (steel toes, warm winter boots, ice creepers)
- Safety glasses
- Gloves
  - Thick leather protects from cuts & sharps
- High-visibility clothing (reflective vest)
  - Safer for you and also helpful to customers
Heat Exhaustion
- Normal body temperature - sweating
- Inadequate fluid intake leads to:
  - Fatigue
  - Weakness
  - Collapse
- Can occur in an inside environment

Heat Stoke
- Serious medical emergency – call ambulance
- High body temperature
- Hot red, dry skin
Weather: Heat

Prevention:
- Appropriate, lightweight protective clothing
  - Still wear your gloves!
- Sunscreen
- Access to shade
- Hydrate!
- Take breaks to cool off

Weather: Cold

Hypothermia
- Shivering – first sign of danger
- Incoherent – stumbles, mumbles, grumbles

Prevention:
- Appropriate, warm, & protective clothing
  - Have spare set at work (or in car)
- Protection from wind & precipitation
- Access to warm areas
- Limit exposure
- Hydrate!
- Take breaks to warm up
Traffic

- One-way is preferred if possible
- Avoid need to back-up
- Clear signs, lane marking or orange cones
- Lighting for evening hours (& winter afternoons)
- Curbing or other barriers near drop-off containers, grade changes, fuel tanks, equipment, etc.
- **High visibility clothing for staff** is safer & also helpful to customers

Traffic Safety

Some haphazard parking
(different directions of vehicles & need to walk across traffic - also backing-up likely)
**Traffic Safety**

Good one-way traffic flow

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**Slips/Trips/Falls**

- Keep walkways, stairs, & ladders clear of debris and spills
- Physical or visual barriers near hazards such as grade changes, machinery, or traffic areas
- Watch for oil leaks, spills, etc.
- Use curbing or other wheel stops to keep vehicles away from edges
- Proper grading & drainage can help prevent water & ice accumulation
Clutter = slip/trip/fall hazard
(and other hazards!)

Clutter is common!
Any corner or flat surface can become clutter (and improper universal waste storage!)

Ponded water = ice!
Slips/Trips/Falls

Metal & Bulky Collection

- Clear signage
- Good barriers to keep vehicles & people from falling
  - Reduce clutter
- Cover bulky/C&D bin
  - Limits getting wet – disposal cost is by weight: wet wallboard, or a wet couch, mattress, or rug is much heavier!

Metal & Bulky Collection

Example of exactly what not to do
Help? What is going on here?

Some confusion: bulky in the metal bin
When bins get full – and a big gap hazard

Looks pretty good, until you look to the left side

Someone can just fall (or drive) off the edge!
Bulky collection: nice roof & barrier on the sides

Metal bin looks good – any issues?
And
Mind the Gap!

No scavenging in the metal bin/pile!
A good set-up: the backside

A good set-up: drop-off area
Another Drop-off Barrier System:

Hazardous & Universal Waste

**Hazardous wastes:**
- Get training to recognize & help avoid exposure
- Use PPE: gloves, aprons, safety glasses or goggles
  - Do you have these? Use them?
  - How about if you are exposed? Water & first aid?
- Set up an exclusion zone for temporary storage – don’t use it for anything else!
  - Call NEKWMD as soon as possible

**Universal waste collection:**
- Provide good ventilation for UW storage area
- Store waste in proper, labeled containers
- Keep a spill kit on hand for clean up of UW breakage – don’t vacuum!
Propane Tanks

Store outside or in well-ventilated out building
Never store inside! Never remove valves!

Used Oil Collection

See anything wrong here?
Fluorescent Bulbs

What’s wrong here?

Fluorescent Bulbs

And here?
Fluorescent Bulbs

Good Storage Area:

Universal Waste

Clean Storage Area:
Obtain & adhere to permit guidelines if open burning

Maintain proper fire extinguishers

Make sure your fire department is familiar with your facility & has easy access

Use care with space heaters

Extension cords should be temporary & adequate for load

Frayed or damaged cords addressed ASAP – by a qualified person

Proper grounding

Avoid storage near heat sources
Fire Safety

Fire extinguishers (in relatively uncluttered offices!)

Biohazards

- Use care handling bagged waste
  - Sharps & other body fluids: transmission of hepatitis, HIV
  - **PPE such as sturdy leather gloves** can protect
- Offer guidance on proper disposal of used needles
  - Collection container at transfer station?
  - Make their own container at home
    - Heavy plastic container, label “SHARPS”, close securely
    - Put in their trash
- Wash
  - Do you have water or other first aid on-site?
Speaking of biohazards...

If open more than 4 hours at a time:
- If don’t have a bathroom with running water, need to have a way to wash hands
- Also need drinking water supply
- If solution is to go off-site, need to keep a staff person on-site

What is it?
- designing and arranging things people use so that the people and things interact most efficiently and safely

Watch body positions and lift carefully
- Especially E-waste, bulky items

Store heavy items on shelves near waist height to minimize the need to bend

Avoid repetitive motions and static postures

Training is helpful

Encourage exercise & fitness
Personal safety - handling cash
- Cash collected for bulky waste drop-off?
  PAYT bags? Other?

Collecting food scraps
- Vector control

Video surveillance
Use of sawdust controls vectors

Reducing Waste Disposal
The 3 R’s = Reduce, Reuse, Recycle

Waste Management Hierarchy

- Non-Preferred
- Recycle & Disposal
- Energy Recovery
- Recycling / Composting
- Source Reduction & Reuse
- Least Preferred

Photo Source: EPA

Offer Strategies to Communicate on

- **Recycling** for people who don’t recycle (or don’t recycle much)
- **Reusing & Reducing** for supporters of recycling (and everyone else too!)
Definitions

- **Reduce** – Cutting back on the amount of items we purchase, use, & dispose of

- **Reuse** – Finding a new way to use the item; it is kept whole & may be sold or donated for use again

- **Recycle** – Using all or part of the item, separated into its individual components so that it can be used to create new products

Community Based Social Marketing

An approach to achieving sustainable behavior in communities through:

1. Selecting which behavior to promote
2. Identifying the barriers & benefits
3. Developing strategies to overcome the barriers
4. Piloting the program
5. Evaluating the program once its implemented

Source: www.cbsm.com
Focus on positive messaging

- More recycling = less trash = saves $
- Saves money on landfill disposal & transport to the landfill
  - Lowers town expenses; helps keep taxes from increasing
- Conserves natural resources, energy, & raw materials
- Returns products & materials back into the economy & creates jobs
General Communication Tips

Make sure that recycling program is as convenient & easy to understand as possible:
- Label drop-off areas clearly
- Publicize program:
  - Distribute outreach materials regularly
  - Make sure the information is sent to new residents
  - Get the word out about changes in service/s

General Communication Tips

- Actions are easy to understand
  - Drop-off areas are clearly labeled
  - Examples of labeled & segregated collection signage

Lancaster Transfer Station
Littleton Transfer Station
Regular communications with public
- Distribute educational materials once a year
  - Increases understanding about what is & is not accepted
  - Reduces contamination
- Send material to new residents when they move in
- Make sure to publicize program changes before & after they happen

Tailor your messaging to these two separate audiences/constituents
- People that already recycle
- People that do not recycle
Communication Tips: Recyclers

- Thank them for doing a good job
- Even the best recyclers can make mistakes
- Focus on what to recycle & where
  - Provide clear instructions
  - “Dos & Don’ts” can help
    - Message: when things that can’t be recycled are added or recyclables are put in the wrong place, a worker needs to remove them, which requires labor & can be dangerous
- When recycling is done right, the town generates materials that producers want to buy
  - Generates revenue & keeps recycling viable

New Handout

www.newmoa.org/solidwaste/projects/transferstations/publications.cfm
Discussion Questions

- Do people throw away things that could easily be recycled at your facility?
  - What types of recyclables do you see thrown away?
  - Have you talked to them about recycling?
  - If so, what’s their response?

- Are there people who only bring trash & no recycling?
  - Have you asked them why they don’t recycle?
  - What other arguments do they make?
  - What works?

Communication Tips: Non-Recyclers

Non-recyclers

- Tend to not believe the benefits of recycling outweigh the effort to do it
- Don’t always listen to “authority” working at the transfer station
  - Hearing from a different voice can be influential
- Tend not to respond to facts about the benefits of recycling
  - Need to focus on the direct impact to them and their community
Communication Tips: Non-Recyclers

Ask for town support for the message that recycling is a priority:

- Ask elected officials to visibly demonstrate support for recycling, including:
  - Asking religious leaders, community groups, & local businesses to help get the message out
  - Provide funding for outreach materials & actions
    - Promote recycling on municipal trucks & other town vehicles – serves as a reminder that recycling is available

- Highlight “top notch” recyclers in the local newspaper, website, or newsletter (individual &/or community group)

Communication Tips: Non-Recyclers

**Emphasize Cost Savings** - Anything that is put in the trash that could be recycled wastes $$

- Directly from their wallet due to PAYT
- Indirectly through town expenses:
  - Recycling lowers town’s disposal costs & can help keep taxes from increasing
    - Disposal costs are accrued by weight so more trash (& heavier trash) costs more
    - Transporting to disposal is costly – the greater the volume of trash, the more often it needs to be transported
## Communications Message

### It’s Not That Hard to Do

- Find a corner of kitchen area, covered porch or garage for recyclables collection
- Use a cardboard box or plastic tub to collect metal, glass, & plastic containers
  - Rinse before to keep area clean
- Use smaller boxes/tubs or paper bags for paper
- Easy to put in car
- Clear instructions & friendly people in recycling center
  - May get good stuff free from the swap area

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### Communications Message

They’re probably already doing some recycling – give positive feedback

- Most transfer stations have containers for scrap metal recycling
- Free to drop-off

*Photo: Dalton Transfer Station*
Contributes to the Community

- Good to not be wasteful & to conserve resources
- Help the town save money
- Return products & materials back into the economy & create jobs

Some Recycling is Mandatory

- Aluminum cans, pie plates, and foil
- Steel cans
- Glass bottles & jars from food & beverages
- Corrugated cardboard
- Paper – including white & colored paper, newspaper, magazine, catalogues, paper mail & envelopes, boxboard, & paper bags
- Hard plastics – specifically PET (#1) & HDPE (#2) plastic bottles & jugs

Items on this list are BANNED from solid waste disposal
**New Handout**

www.newmoa.org/solidwaste/projects/transferstations/publications.cfm

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**Other Recycling Resources**

**RE3.org Campaign:** [http://www.re3.org](http://www.re3.org)

- Some eye-catching posters on benefits of recycling
- Source: NC Division of Environmental Assistance
Other Recycling Resources

MA Dept. of Environmental Protection
  • Recycle IQ Kit: (Applies to Single-Stream Programs)
    www.mass.gov/eea/agencies/massdep/recycle/grants/recycling-iq-kit.html

Environmental Protection Agency
  • Municipal Government Toolkit:

SC Dept. of Health & Environmental Control
  • Recycle Guys: http://www.recycleguys.org

Reduce
Reuse
Recycle
Discussion Questions

- Do people throw away things that are in good shape & could be reused?
  - What types of good stuff do you see thrown away?
- What reuse options are there?
  - Do you have a reuse area at your facility?
  - Do you know of charitable options?
  - Do you have a way to share options with residents?

Challenge: Space Limitations

Reuse at the transfer station
- Need a covered or sheltered location
- Need to manage items that are not picked up
- Often limited to smaller items
Challenge: Staff Limitations

- There is only one transfer station attendant & they are helping someone else
- The resident quickly dumps the items in the trash compactor, before the attendant can get to them
- The resident doesn’t even realize their mistake – therefore, they are apt to do it again

Challenge: Convenience

- The resident has already packed up the materials & driven to the transfer station
- Even if they are made aware of other options (donation centers) – they may be unwilling to make another stop
Benefits:
- Saves money on landfill disposal & transport to the landfill
- Conserves natural resources, energy, & raw materials
- Returns products & materials back into the economy & helps create jobs
- Helps people in the community who need these items but cannot afford to buy them new

Donate through charitable organizations:
- HOPE in Lyndonville
- Salvation Army in Saint Johnsbury
- ReSource in Barre

Sell at consignment shops or online
- Front Porch Fourm
- Orleans County FreeCycle
- Saint Johnsbury FreeCycle
- Washington County FreeCycle
- Vermont Craigslist
Need to educate residents before they bring reusable items to the transfer station

- What types of items are appropriate for reuse
- Avoid damage during transport (&/or storage)
- Identify easiest reuse options

Post information at transfer station &/or have a handout available

Provide Information on Reuse Opportunities

- Post signs & notices with information on local reuse options & donation centers
- Partner with local groups or businesses
- Distribute the information to people early & often
Communications Strategy

Handout

• Include in regular town mailings, such as tax bills, utility bills, & other communications
• Distribute at HHW collections & other community events
• Post on local community bulletin boards
• Post on town’s website, Facebook page, & other social media platforms
• Send the information out to people regularly

Includes local options on back

Other Reuse Ideas

Repurposing & Repair of Items

• Partner with local boy/girl scout troops, veterans organizations, or small businesses to host a “fix-it clinic” or “repair cafe”
• Encourage people to explore Do-It-Yourself (DIY) tutorials online

Photo Source: Pinterest
Other Reuse Ideas

Promote Swapping at the Transfer Station
- Need a covered or sheltered location
- Or host a one-day event in the summer

Community One-day Swap Event
- Need to manage items that are not picked-up
  - Coordinate with community organizations to take high quality items for donation
  - Recycle items, if feasible & dispose of the rest
Do you see the same people throwing out a large amount of trash each week?

What are they throwing away a lot of?

- Take-out containers
- Food waste
- One-time disposables, such as napkins/paper towels/paper plates/plastic ware
- Small trinkets & other cheap plastic items
- Furniture & other large items

Have you ever talked to them about it?
Reducing Purchasing = Reducing Waste

Focus on direct benefits:
- Saves $$$
  - By buying less & buying carefully
- Reduces clutter - home & yard
- Reduces waste that needs managing
  - Direct savings due to PAYT
  - Lowers town’s waste transport & disposal costs

“Consider before buying” concept:
- Think about whether they really need the item
- Can they borrow it from someone or buy it second-hand?
- Is it well-made & fixable so it can be given to someone else when they are done with it?
- Can it be recycled? If not, it will be trash
- Is it made with recycled content?
  - Helps close the loop & boost market demand for materials the transfer station collects for recycling
Benefits

Conserves natural resources, energy, & raw materials
Best way to prevent pollution & waste & save $$ is to not purchase to begin with or purchase reusable items instead of disposables
Recycling is better than disposal, but still uses resources to move items; reduction avoids those impacts

Shop at yard sales & secondhand stores
Avoid using single-use disposable items

Drink cups & food take-out containers
  • Bring reusable containers to manage leftovers
  • Use containers that can be recycled at the recycling center
Use washable cloth versions of paper napkins, towels, & tissues
Pack lunch in reusable bags & containers
Use washable plates/cups/silverware at parties & buy them second-hand
The Problem with Food Waste

- Food scraps make up 1/3 of total waste generated by a typical family in VT
- Heavy & expensive to dispose of

Photo Source: VT DEC
Communications Message

Reduce food waste
- Eat leftovers before they go bad
- Plan meals prior to shopping (saves $$ too)
- Check out these resources:
  - https://cswd.net/reduce-and-reuse/reducing-food-waste/
  - www.epa.gov/recycle/reducing-wasted-food-home

Donate appropriately

Communications Message

Easy to compost at home
- Contains valuable nutrients for gardens/farms
- Avoids transporting & reduces “yuck” factor
- Check out these resources:
  - http://nekwmd.org/organics.html
Many transfer stations are collecting for composting
- Mandatory in Vermont
- Use sawdust after depositing – controls vector problems
- Work with local farm to manage containers

Summary
**Summary**

**Reduce Waste**
- Reducing Purchasing = Reducing Waste
  - Saves $$$ & reduces clutter
- Encourage people to “think before they buy”
  - Buy less
  - Borrow or buy secondhand (helps keep reuse viable)
  - Purchase quality items that are durable & repairable
  - Buy recycled (helps keep recycling viable)
- Encourage small daily changes
  - Purchase reusable items rather than disposables
  - See handouts for other ideas

**Reuse**
- Proactive outreach needed
  - Signs & handouts
- Promote existing donation options
  - Helps people in the community who need these items but cannot afford to buy them new
- Promote reuse/refurbish/repurpose ideas
- Support swapping to greatest extent feasible
- If really motivated, help organize:
  - One-day reuse swap event
  - Fix-it clinic
Recycle

- Needs to be easy to understand
  - Clear signage & instructions at facility
  - Regular communication on program
- Messages:
  - Recycling saves $$$
    - Directly due to PAYT
    - Reduced waste transport & disposal costs to town
  - Recycling isn’t hard to do
- Encourage people to buy recycled
  - Helps keep recycling program viable

Dispose

- Ultimately, some things need to go in the trash
- Provide information on proper disposal of items that should not go in the trash
- Items banned from disposal in Vermont:
  - Lead acid batteries
  - Waste oil
  - White goods
  - Tires
  - Paint
  - Nickel-cadmium batteries
  - Mercury products
  - Electronic devices
  - Mandatory recyclables
  - Leaf & yard waste
  - Food waste (2020)
New Handout

www.newmoa.org/solidwaste/projects/transferstations/publications.cfm

Questions?

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