# Improving Safety & Reducing Waste at Rural Transfer Stations

Jennifer Griffith & Rachel Smith
August 1, 2017
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

Funded by USDA Rural Utilities Services Solid Waste Management Grant

This material is based on work supported by the Rural Utilities Service, United States Department of Agriculture.
Any opinions, findings, and conclusions or recommendations are solely the responsibility of the authors and do not necessarily represent the official views of the Rural Utilities Services.

#### **Project Partners**

- Vermont
  - ❖ Northeast Kingdom Waste Management District
  - Department of Environmental Conservation
- New Hampshire
  - North Country Council
  - Department of Environmental Services









#### **Project Outline**

- 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/

#### Today's Workshop

- 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**

### Today's Workshop

#### **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!

#### **Today's Workshop**

#### **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

#### **Equipment Safety**

#### 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**

A good set-up?



#### PPE

#### 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



#### Weather: Heat

- 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





## 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









# 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 <u>much</u> heavier!

# **Metal & Bulky Collection**

Example of exactly what not to do





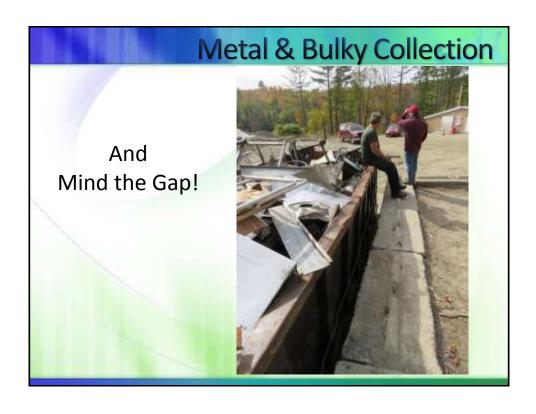


















# Metal & Bulky Collection

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!













# Fire & Electrical

- 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





#### **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?

#### Other Biohazards

#### 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 offsite, need to keep a staff person on-site



#### **Ergonomics**

- 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

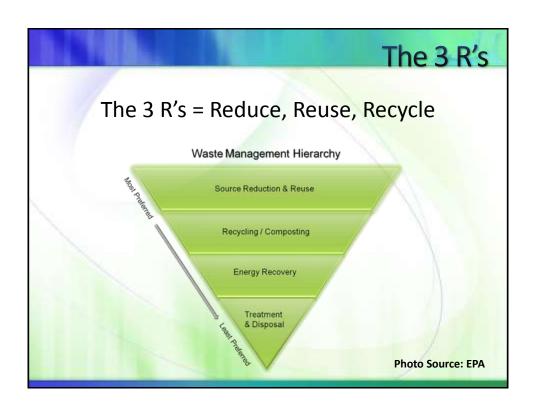
# Miscellaneous

- Personal safety handling cash
  - Cash collected for bulky waste drop-off? PAYT bags? Other?
- Collecting food scraps
  - Vector control





# Reducing Waste Disposal



# **Today's Objectives**

#### 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



# **General Communication Tips**

#### 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** 

# **General Communication Tips**

#### 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

### **General Communication Tips**

# 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



#### **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

#### 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

## **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

### **Communications Message**

#### 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





## **Other Recycling Resources**

- MA Dept. of Environmental Protection
  - Recycle IQ Kit: (Applies to Single-Steam Programs)
     www.mass.gov/eea/agencies/massdep/recycle/grants/recycling-iq-kit.html
- Environmental Protection Agency
  - Municipal Government Toolkit: <a href="https://archive.epa.gov/region4/rcra/mgtoolkit/web/html/">https://archive.epa.gov/region4/rcra/mgtoolkit/web/html/</a> improving.html#remind
- SC Dept. of Health & Environmental Control
  - Recycle Guys: http://www.recycleguys.org



### **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



Vehicle Drop-off Areas at Barnet Transfer Station in Vermont

#### 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

## **Communications Strategy**

- Need to educate residents <u>before</u> 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

## **Communications Strategy**

# Provide Information on Reuse Opportunities

- Post signs & notices with information on <u>local</u> reuse options & donation centers
- Partner with local groups or businesses
- Distribute the information to people early & often



FCSWMD - Massachusetts

## **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





Photos: Various Swap Shops at Transfer Stations in Massachusetts

### Other Reuse Ideas

#### **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



Recycling Rally in Northampton, Massachusetts



## **Discussion Questions**

- 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

### **Communications Message**

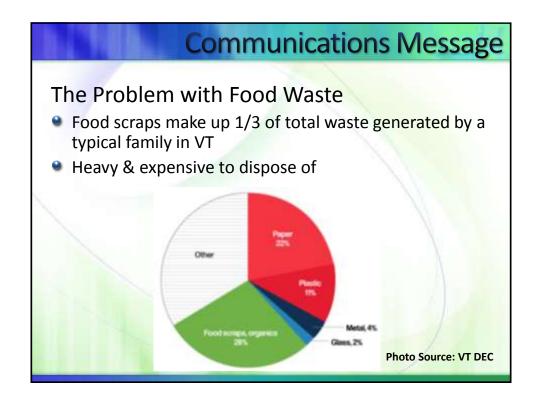
#### "Consider before buying" concept:

- 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





- 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



**Photo Source: VT DEC** 

- 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
    - http://dec.vermont.gov/wastemanagement/solid/materials-mgmt/organic-materials
    - https://nerc.org/documents/Organics/Reduce%20Waste d%20Food%20-%20Tip%20Sheet%20for%20Residents Final.pdf

- Many transfer stations are collecting for composting
  - Mandatory in Vermont
  - Use sawdust after depositing controls vector problems
  - Work with local farm to manage containers



Photo: Sheffield-Wheelock Transfer Station in Vermont



### 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

### **Summary**

#### 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

### Summary

#### 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

#### **Summary**

#### **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)



