

# Minneapolis Mattress Recycling



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# Why collect for recycling?

- Mattresses do not compact
  - Each take up 23-28 cubic feet of landfill space
- Incineration of mattresses is inefficient
  - Requires extensive monitoring to ensure equipment is not clogged or damaged
  - After incineration 40% of a mattress by weight is landfilled.
- Between 80 and 90% of a mattress can be recycled!

# Why the program began

- Mattresses were causing issues at HERC
- Hennepin County reached out to PPL to discuss feasibility of processing mattresses
- Minneapolis was targeted to pilot a mattress recycling program by the County due to existing large/bulky item collection in City

# City Large/Bulky Item Collection

## Every Garbage Week

- Up to 2 non-recyclable items may be placed at the curb for collection
  - Furniture and wood items

## Every Recycling Week

- A total of 2 recyclable and/or non-recyclable items may be placed at the curb for collection
  - Appliances
  - Electronics
  - Mattresses
  - Large Metal Items



Residents are told to label items *"For Solid Waste"*

Crew will note the large/bulky items when collecting garbage. Another crew will be back the following business day to pick up the item(s).

# City Voucher Program at South Transfer Station

Each Utility Bill payer receives the following annually:

- 8 clean up vouchers
  - Up to 1,000 pounds of excess garbage and construction demolition debris
  - two large/bulky items
- 2 tire vouchers
  - Up to 8 tires each



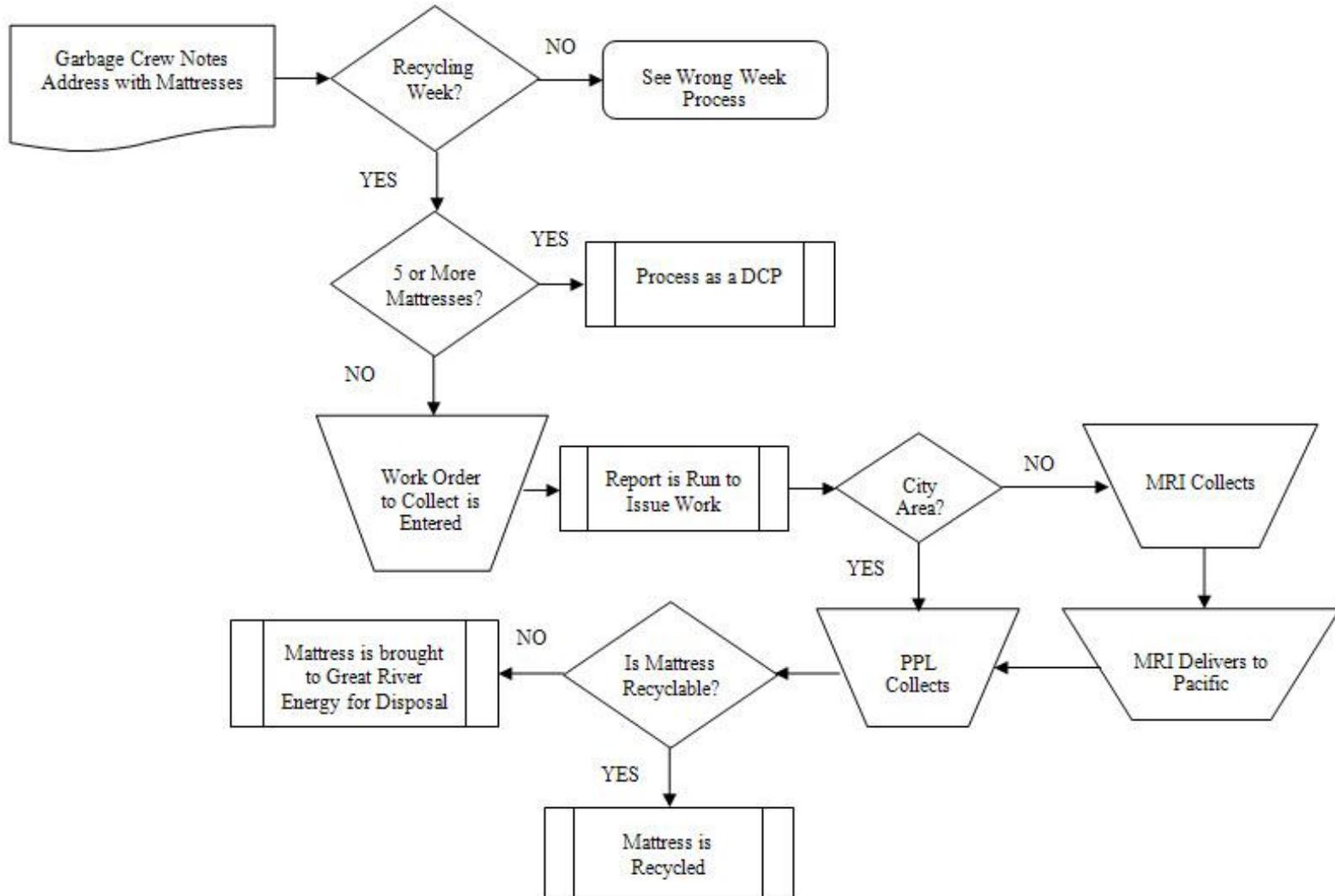
# Costs of Mattress Collection Program

PPL Fees	Cost per mattress
Curbside/alley-side collection	\$8
Collection from South Transfer & Pacific	\$6
Cost per recyclable mattress	\$10
Cost per non-recyclable mattress	\$25

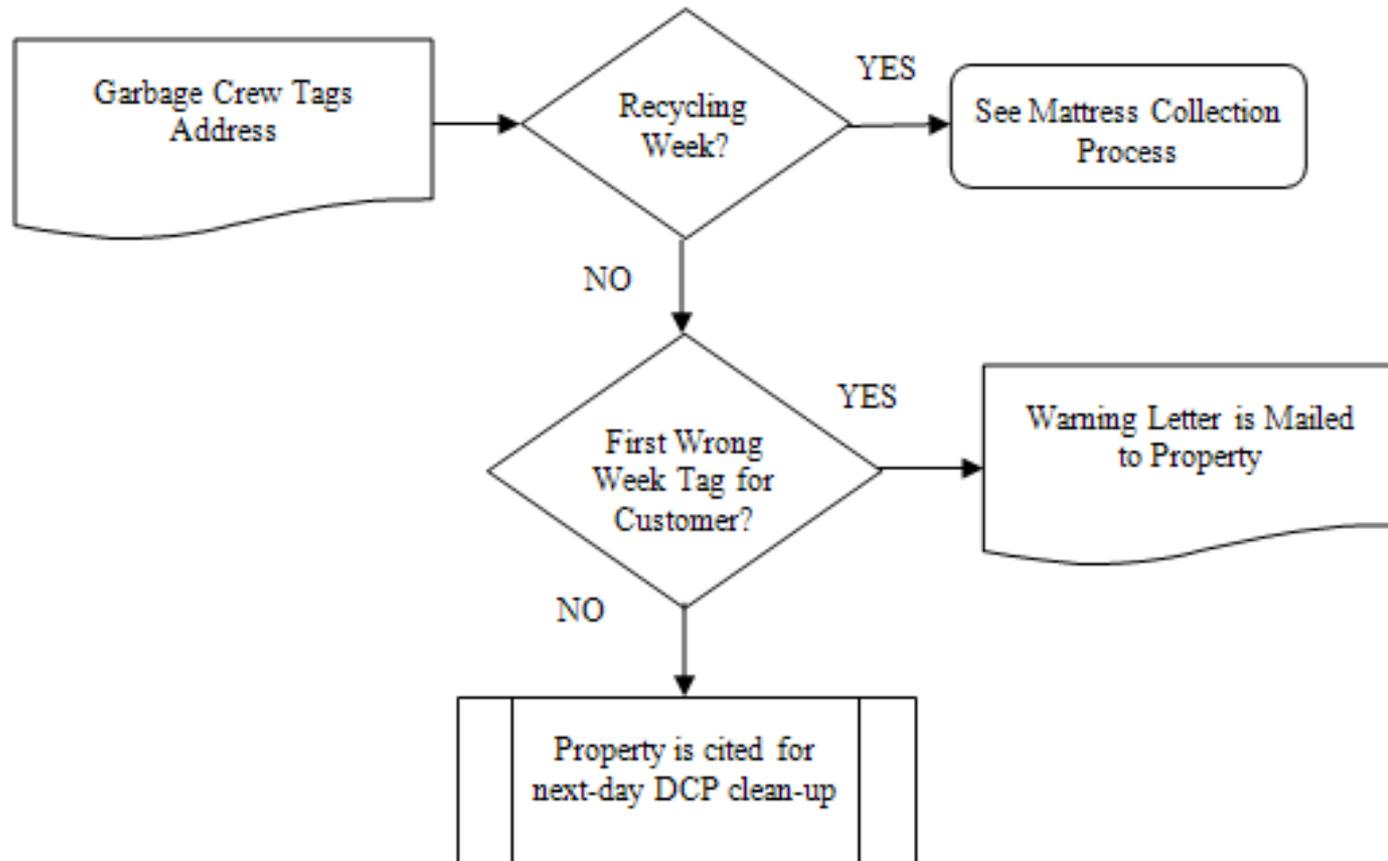
## **Non-recyclable mattresses:**

1. water-logged
2. Bed bugs
3. Individually wrapped coil mattresses (Sealy®)
  - Too labor intensive to dismantle

# Mattress Collection Process



# Non-Recycling Week Mattress Process



# Mattress Receiving/Staging Process



Sorted by  
type & size

Shannon  
Counting

Wood staged for  
removal from  
building

Cut to  
determine  
non-recyclable



# Mattress/Box Spring Staging



# Equipment: Forklift with Bale Clamp



Improved efficiency of mattress/box spring material handling with purchase of bale clamp for the forklift. Bale clamp allows PPL to securely pickup a stack of mattresses, rotate it, and move it quickly through the facility.

# Mattress/Box Spring Dismantling Process



# Equipment: Box Spring Dismantler



Box Spring Dismantler pushes springs off the wood frame. This is a safer and more efficient process than beating the frames and springs apart with a hammer. We are processing about 70 box springs per day on this machine.

# Residual: Material Baler Staging



# Equipment: Material & Steel Balers



# Recyclable Commodities

## Foam Bales



## Quilt Bales



## Steel Bales

# Waste to Energy



Wood

Shoddy

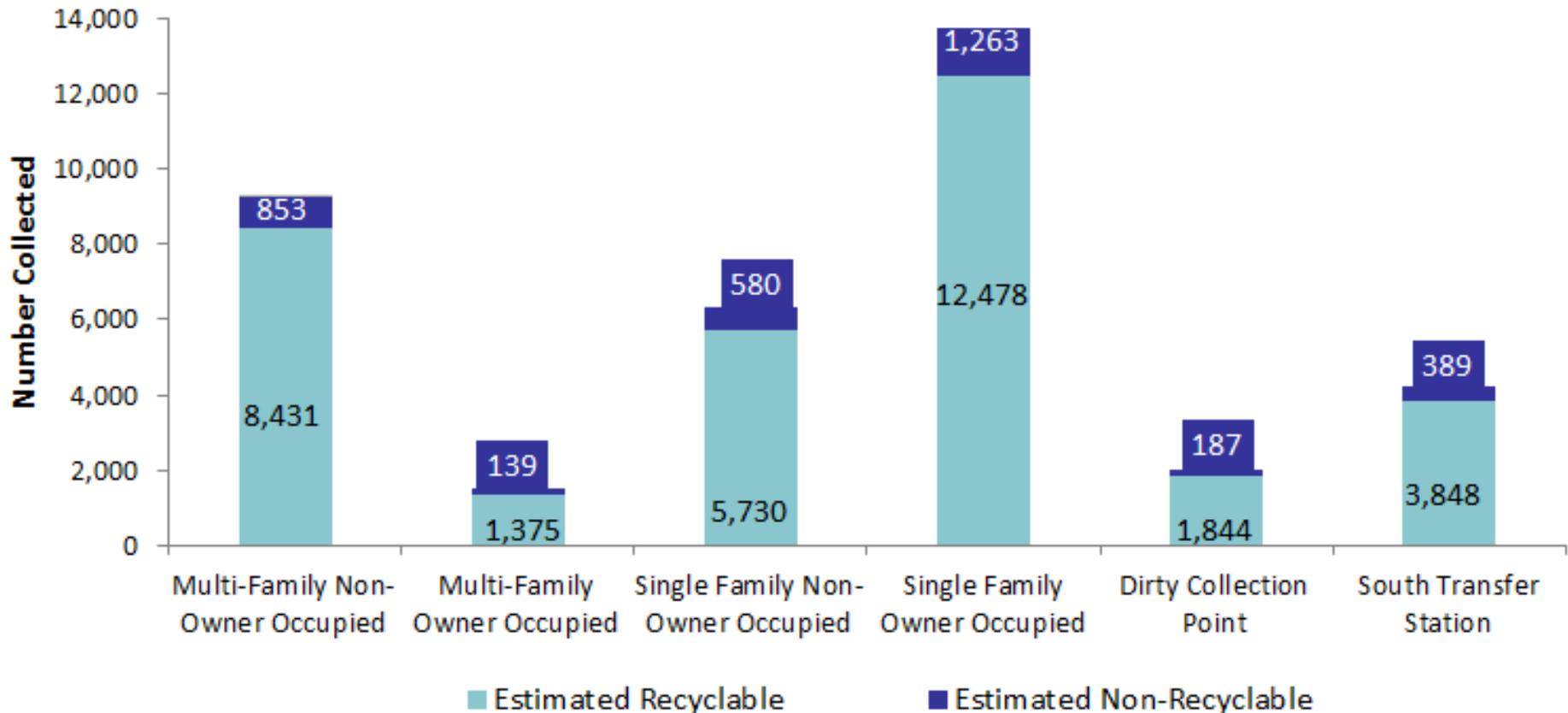
- Ground up spun material

Other



# Mattress Collection Volumes

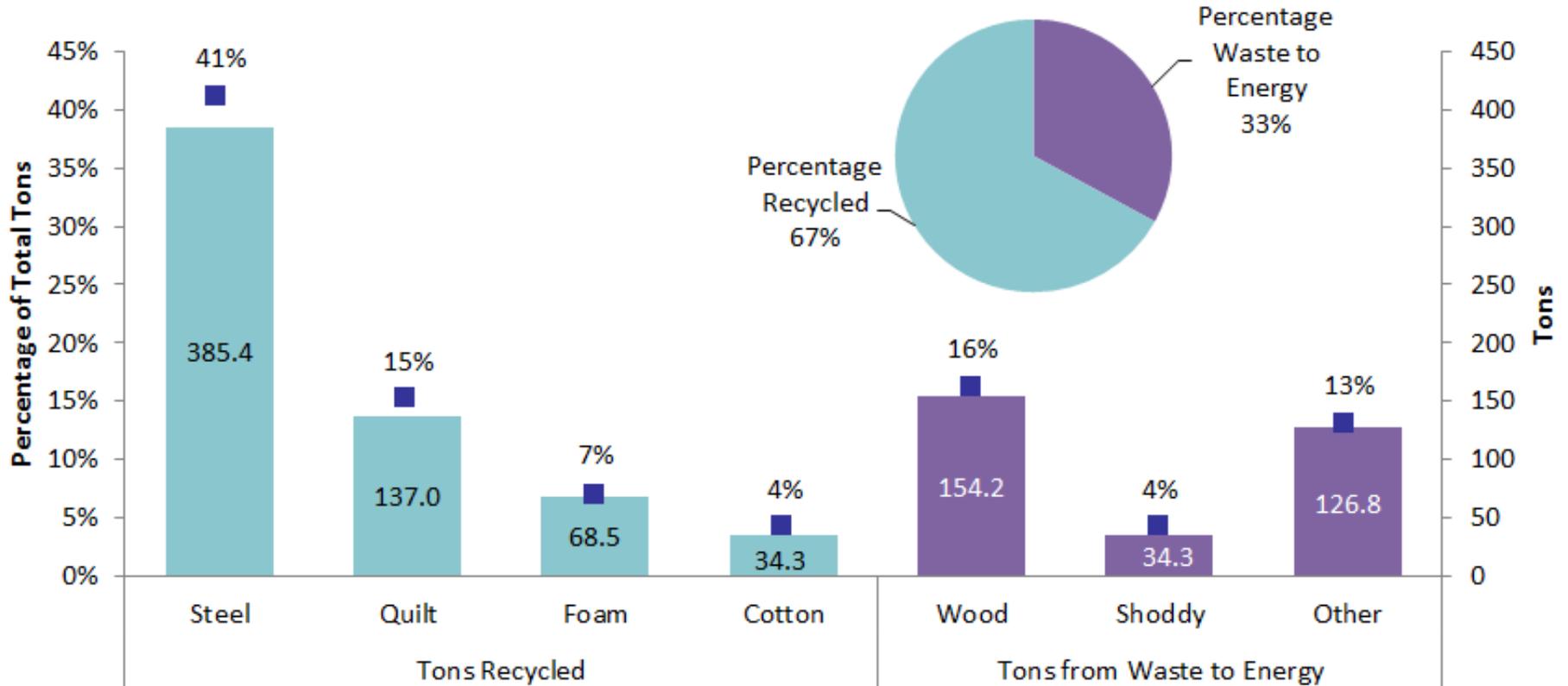
Total Collected in first year of program: 37,117



Note: Time period = August 2012-August 2013

Source: PPL data and Solid Waste Information System data

# End Market Commodities



Note: 1. Time period = August 2012-August 2013.

2. Shoddy is defined as spun material which has been cut or ground up.

Source: PPL data and Solid Waste Information System data

# Why others should start mattress recycling programs

- Between 38 and 40 million mattresses and box springs are sold in the US each year.
  - About half that many are discarded.
- Minneapolis' mattress recycling programs sustains 15 full time jobs from collecting and transporting to processing mattresses at PPL industries alone.
  - Additional jobs are created in processing and manufacturing new products from recycled mattresses.
- Value of recycled steel alone would result in \$17 million in off-settable revenue.
- A reduction of \$1 million in incineration or landfill costs
  - Save between 6 and 17 million cubic feet of landfill space.

# Awarded 2013 Local Government Innovation Award



- Humphrey Institute of Public Affairs in association with Association of MN Counties (AMC), the League of Minnesota Cities (LMC), and the Minnesota School Boards Association (MNBA) for Mattress Recycling Program
- Collaboration with Hennepin County, PPL Industries
- Award will be presented on December 12<sup>th</sup>

# QUESTIONS ?



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