



# Current state of electronics recycling in Wisconsin

E-Cycle Wisconsin 2018 stakeholder meeting  
May 30, 2018

Sarah Murray, Wisconsin DNR

# Landfill and incinerator bans

- Televisions
- Computers (desktop laptop, netbook, tablet)
- Computer monitors
- Computer accessories (mice, keyboards, external hard drives, etc.)
- Desktop printers & fax machines
- E-readers
- DVD players, VCRs and DVRs
- Cell phones

## Which Electronics Are Banned From Wisconsin Landfills?

Wisconsin's electronics recycling law bans most electronics from landfills and incinerators. Electronics contain valuable materials and must be reused or recycled. To find a collection site near you, visit [dnr.wi.gov](http://dnr.wi.gov) and search "ecycle."



- ❑ Computers: desktop, laptop, netbook, notebook
- ❑ TVs and computer monitors
- ❑ Cell phones, tablets and e-readers
- ❑ Fax machines and desktop printers, including printers combined with fax machines, scanners and copiers
- ❑ Computer accessories, including keyboards, mice, hard drives, scanners, speakers, flash drives and other devices
- ❑ DVD players, VCRs, DVRs and other video players



Wisconsin Department of Natural Resources  
Bureau of Hazardous Materials Management  
P.O. Box 7501, Madison, WI 53707 • (608) 266-2111  
[DNRMW-cycling@wisconsin.gov](mailto:DNRMW-cycling@wisconsin.gov)

The Wisconsin Department of Natural Resources provides equal opportunity in its employment, programs, services and facilities. Individuals with disabilities, please contact the Department of Natural Resources, Department of Hazardous Materials, DNR, 2004.

This publication is available in alternative format upon request. Please call 608-266-2111 for more information.

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[dnr.wi.gov](http://dnr.wi.gov) "ecycle"

# E-Cycle Wisconsin

## E-Cycle Wisconsin process



## Manufacturer's role



Manufacturers sell electronics through retailers, distributors and/or directly. Some of these products are sold into Wisconsin, which has a law covering electronics manufacturers.



The law assigns manufacturers annual "recycling targets" based on the weight of covered products the manufacturer sells in Wisconsin.



¢/lb.

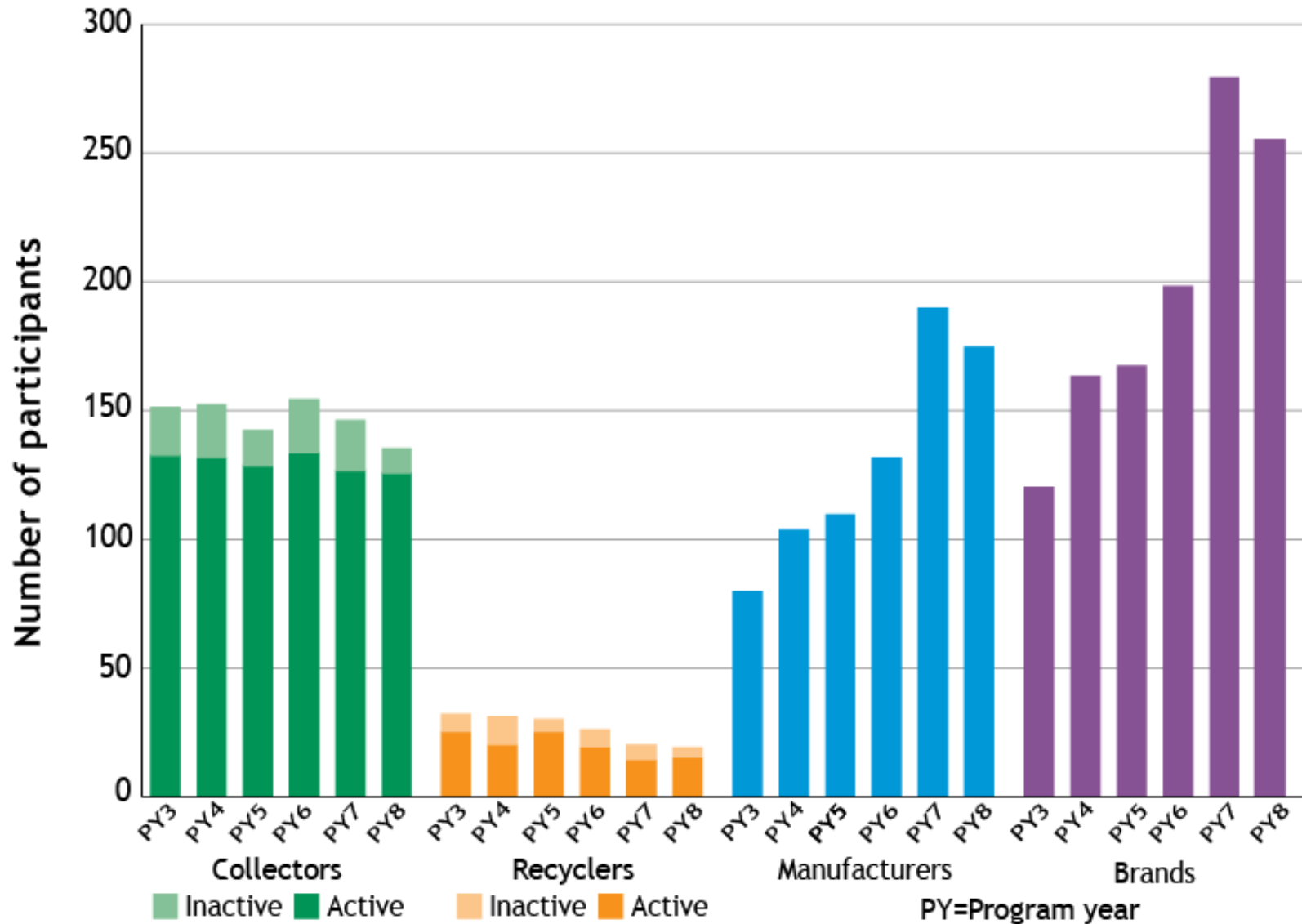
Manufacturers make agreements with registered recyclers or with brokers that work with registered recyclers to pay a certain number of cents per pound to meet recycling targets.



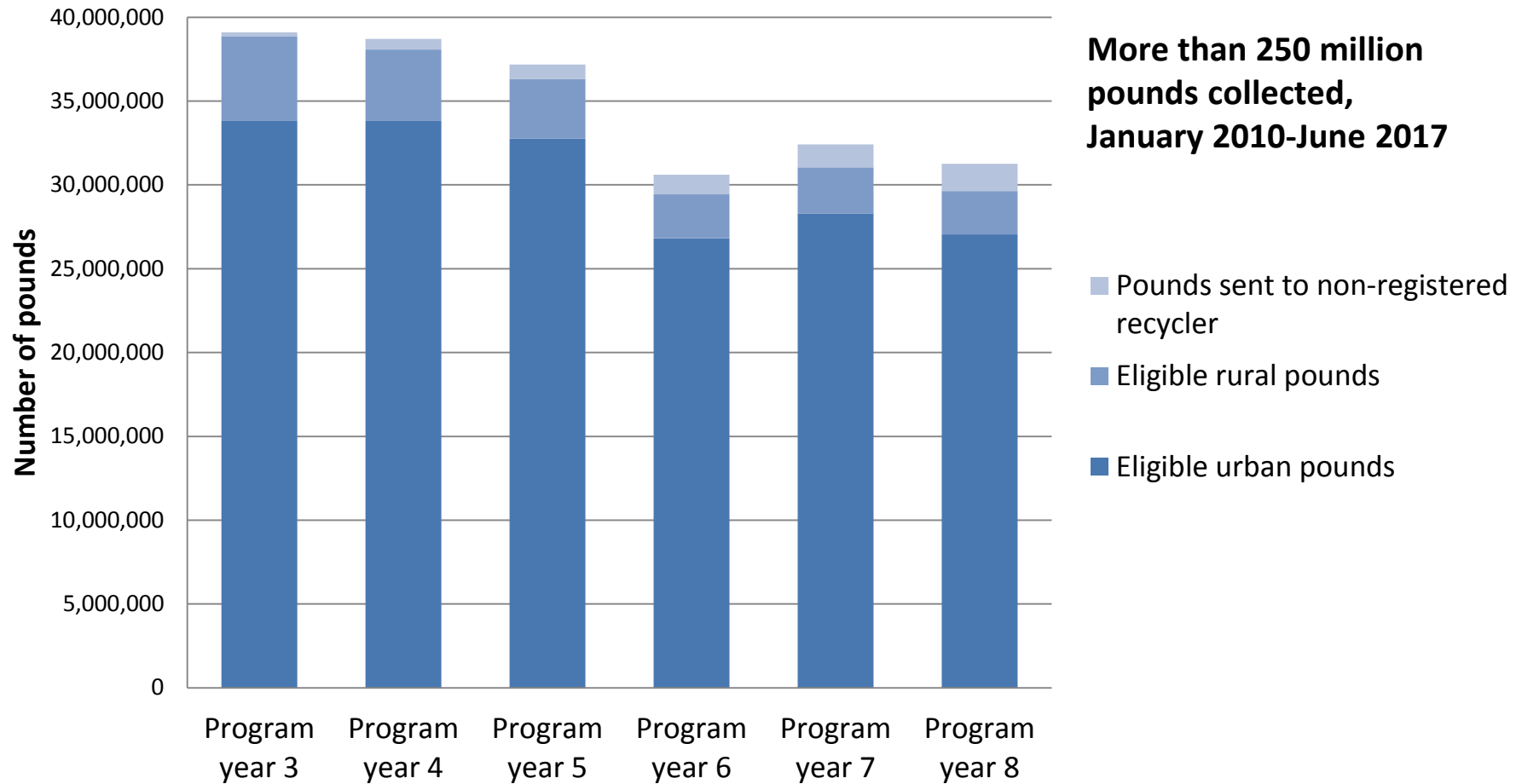
Manufacturers fulfill their contracts with recyclers, keeping costs lower for the public.



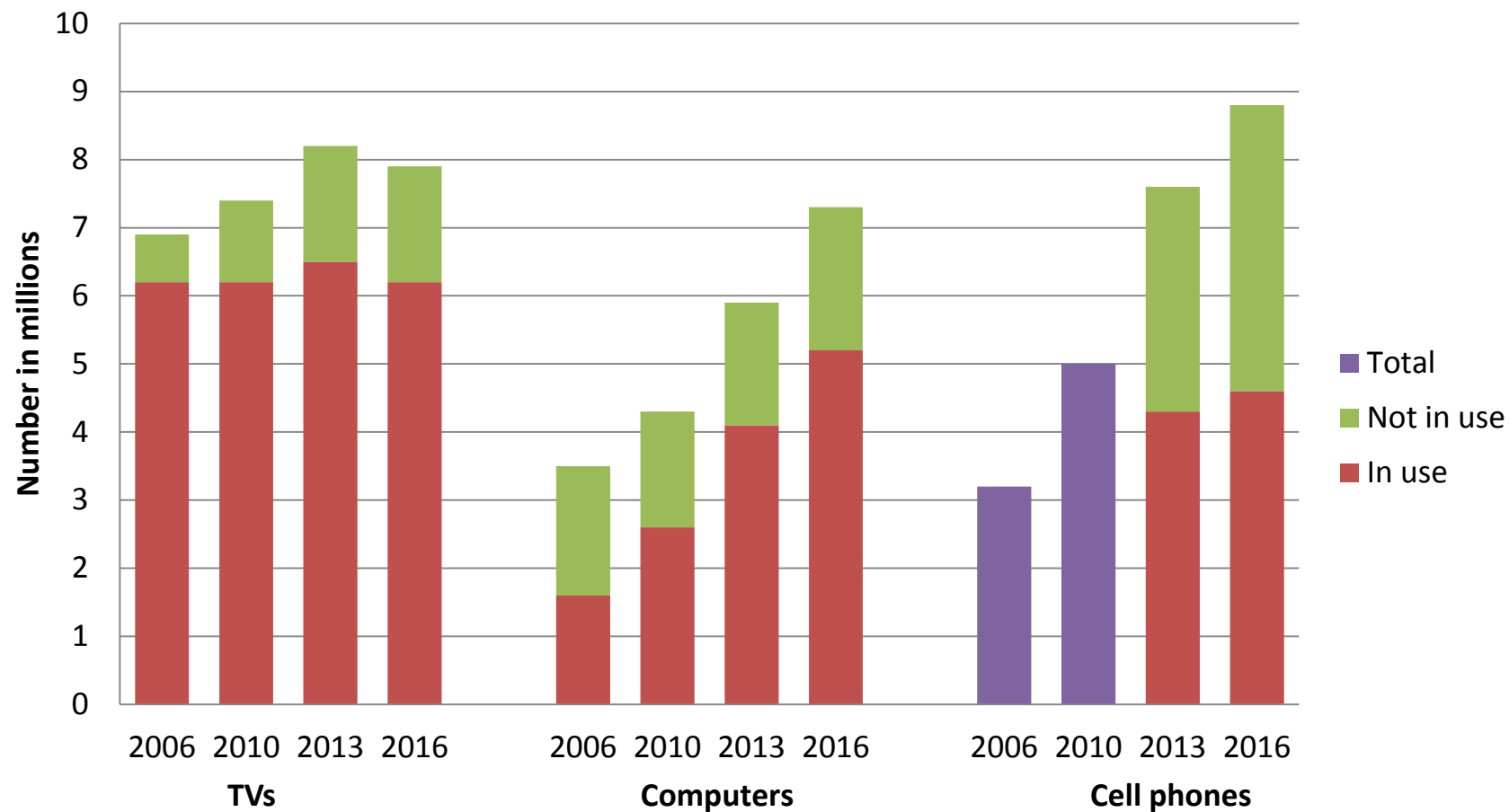
# Program participation



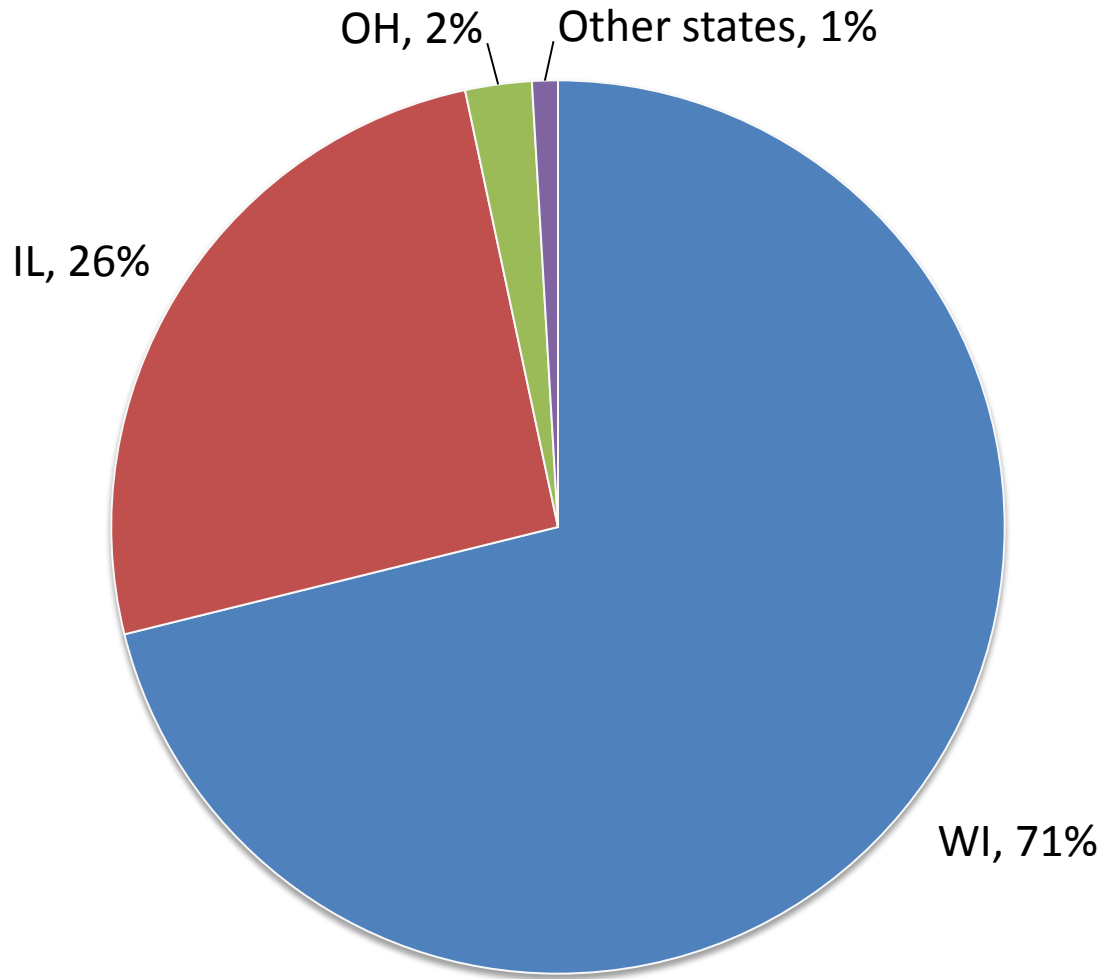
# Pounds collected by program year



# Electronics in WI households



# Where collected materials go (PY8)



# Leveling the playing field

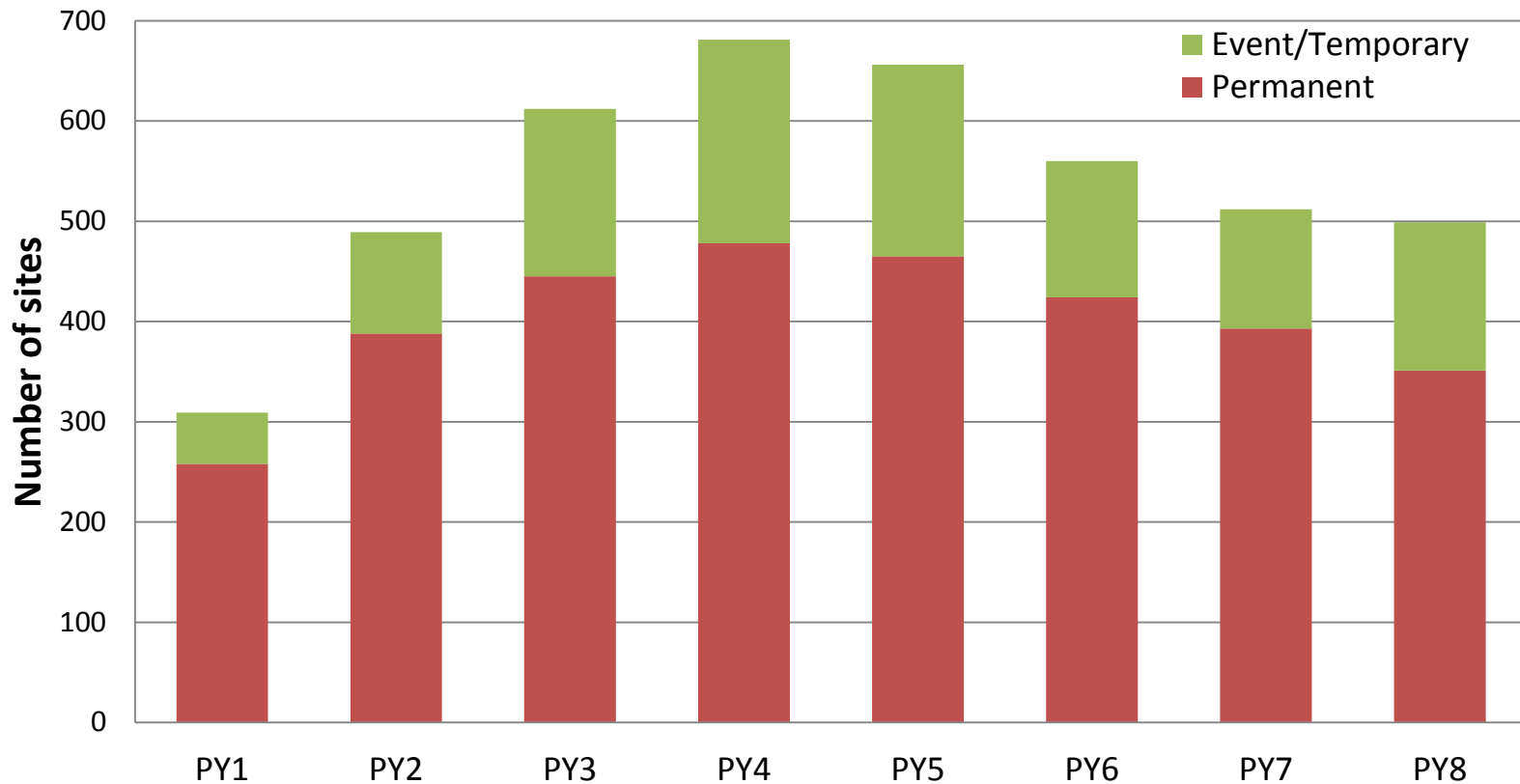
- Have significantly increased the number of registered manufacturers and brands, with help from retailers
- Working with retailers to improve compliance with customer education requirement and “do not sell” list
- Continued inspections of in-state recyclers, and some out-of-state site visits
- Review of downstream records for CRT glass
- Closer scrutiny of reporting using online system
- Working with collectors and recyclers to improve recordkeeping



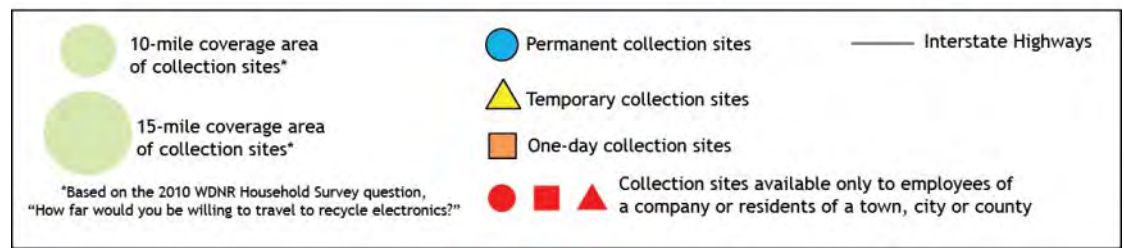
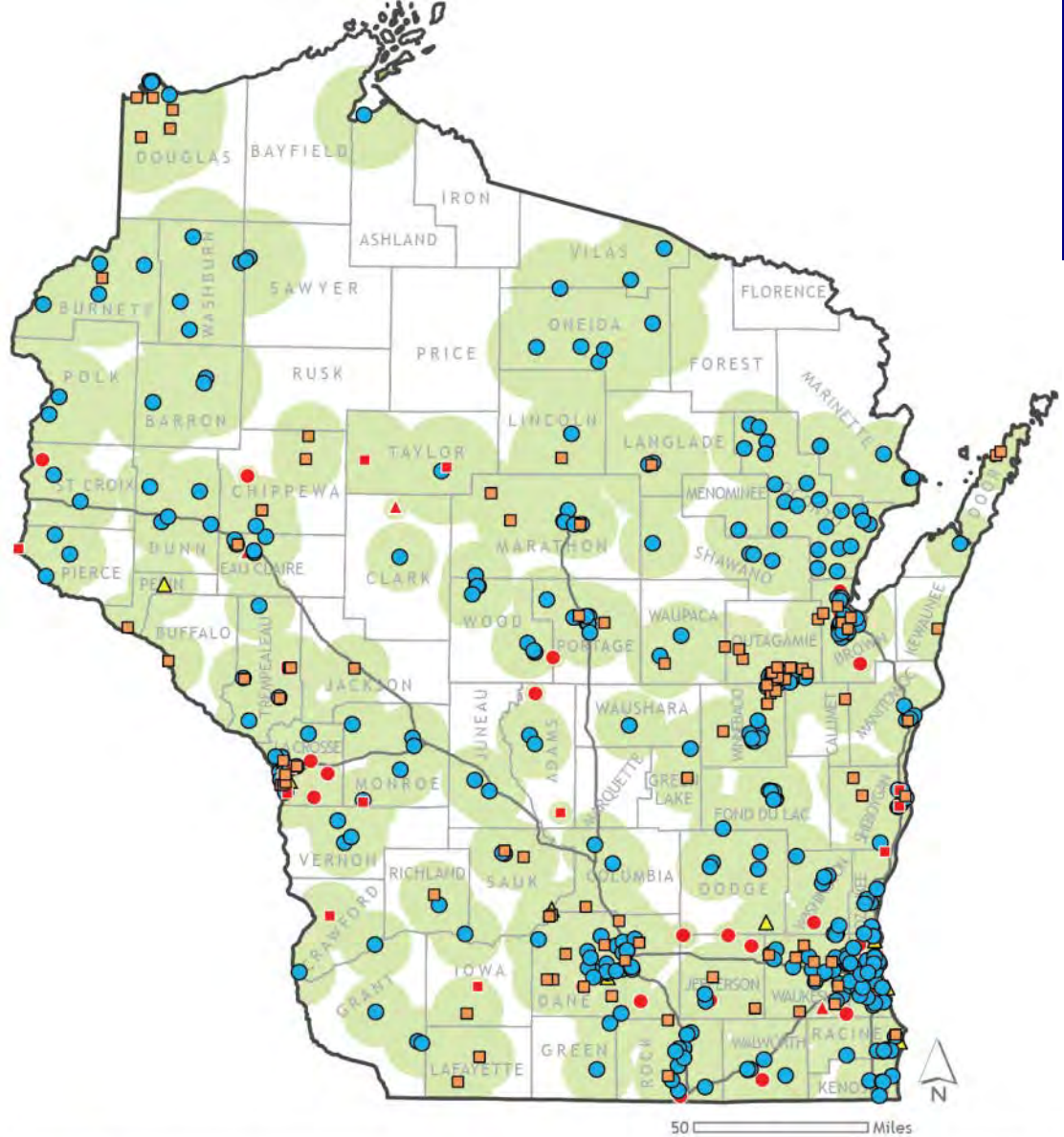
# Key current program challenges

- Consumer access
- Increased costs
- Gap between collection and manufacturer targets
- Scrapping/dumping/material leaving the program
- Downstream markets & changing nature of electronics
- Stored material/lack of awareness

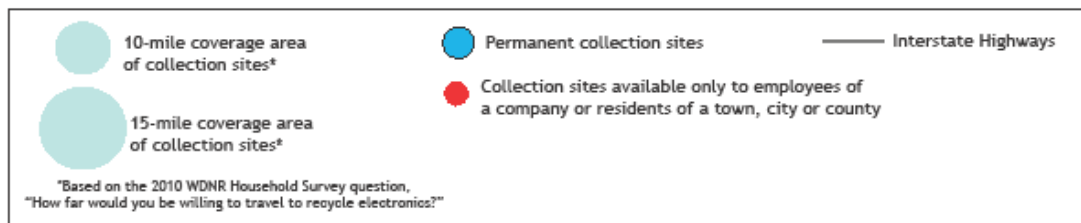
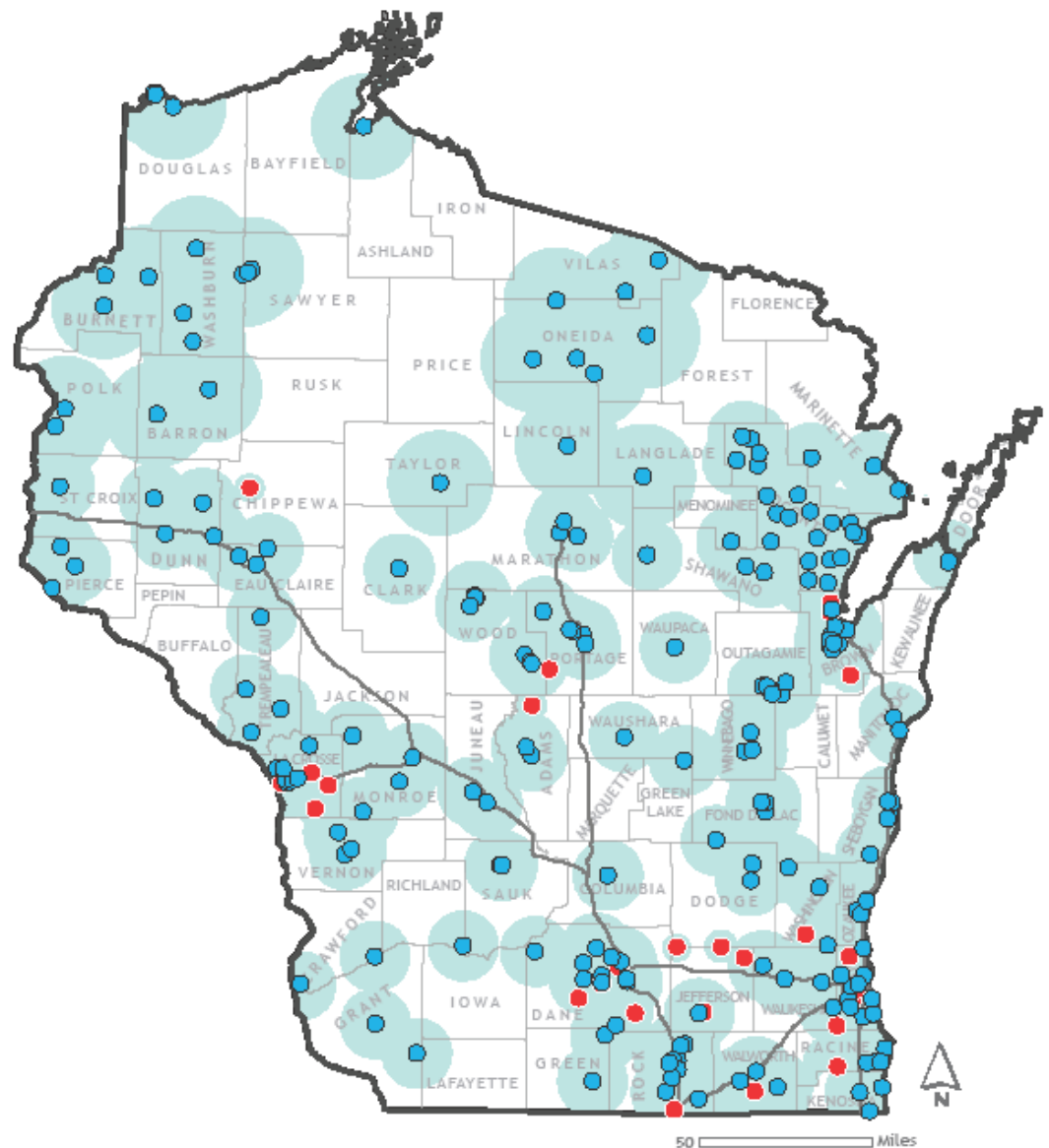
# Registered collection sites



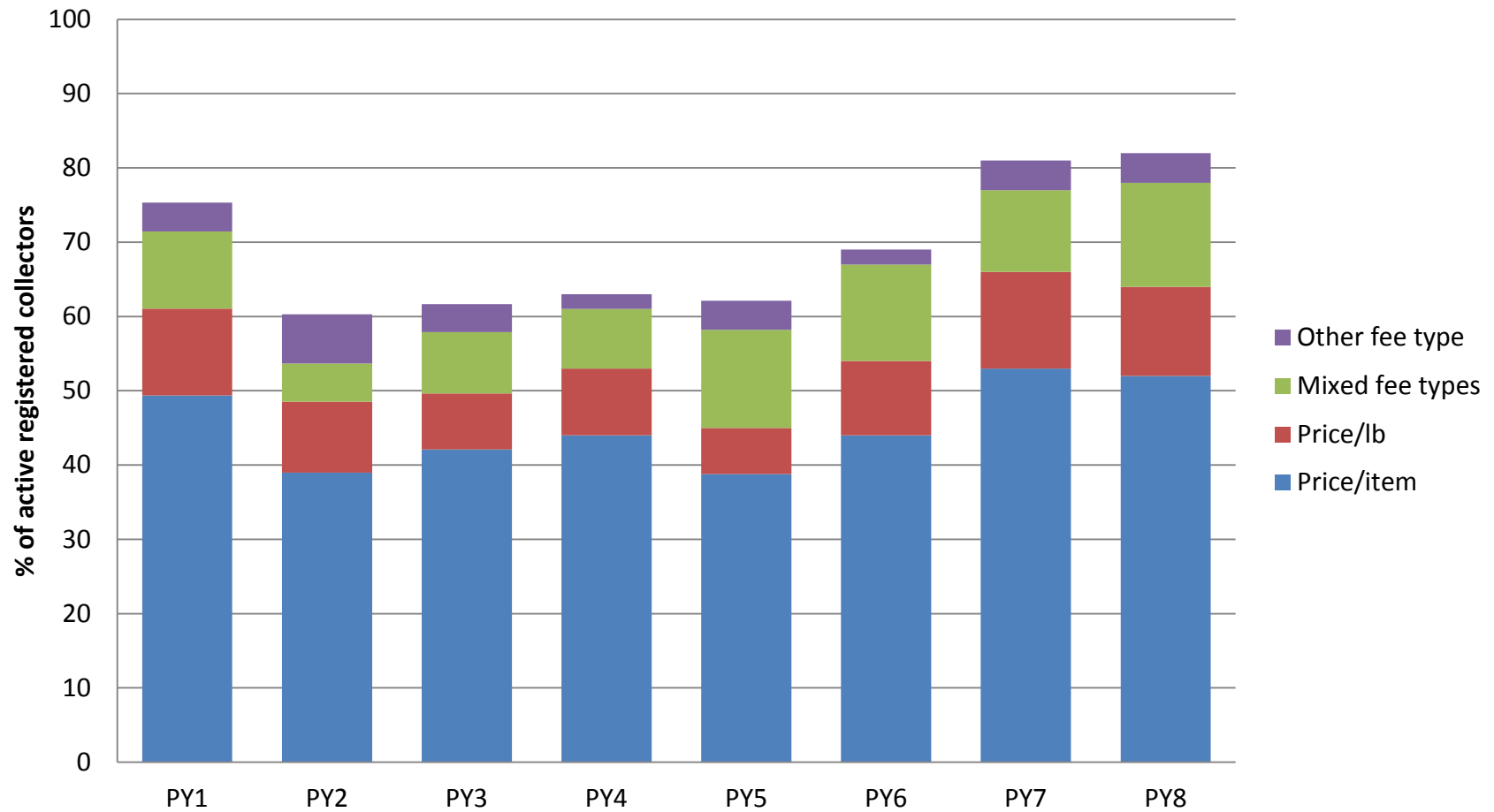
Collection sites registered during program year 8, with 10-mile (south) or 15-mile (north) radius circles showing average distance willing to drive to recycle electronics.



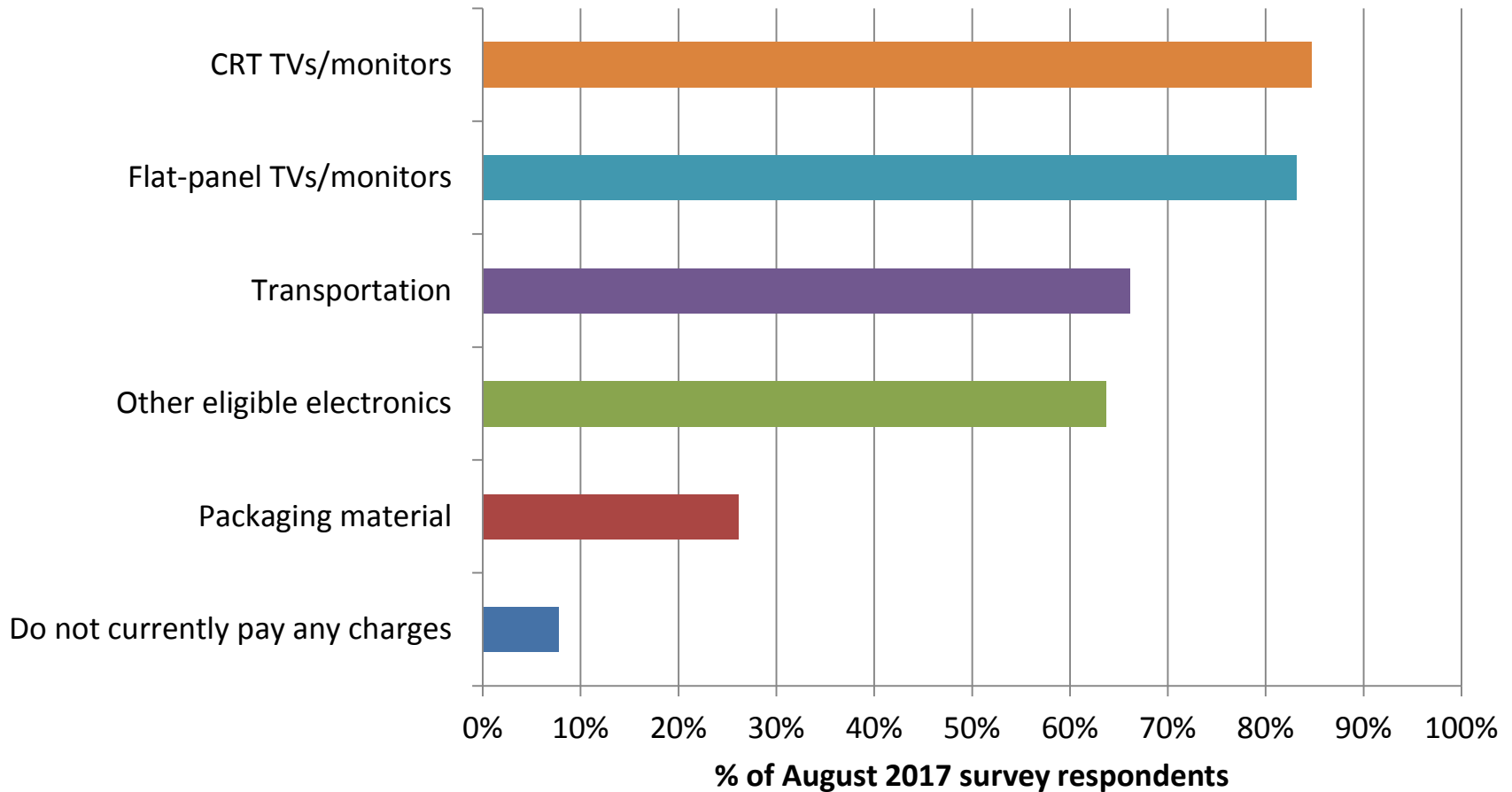
Permanent collection sites registered during program year 8 that accepted TVs, with 10-mile (south) or 15-mile (north) radius circles showing average distance willing to drive to recycle electronics.



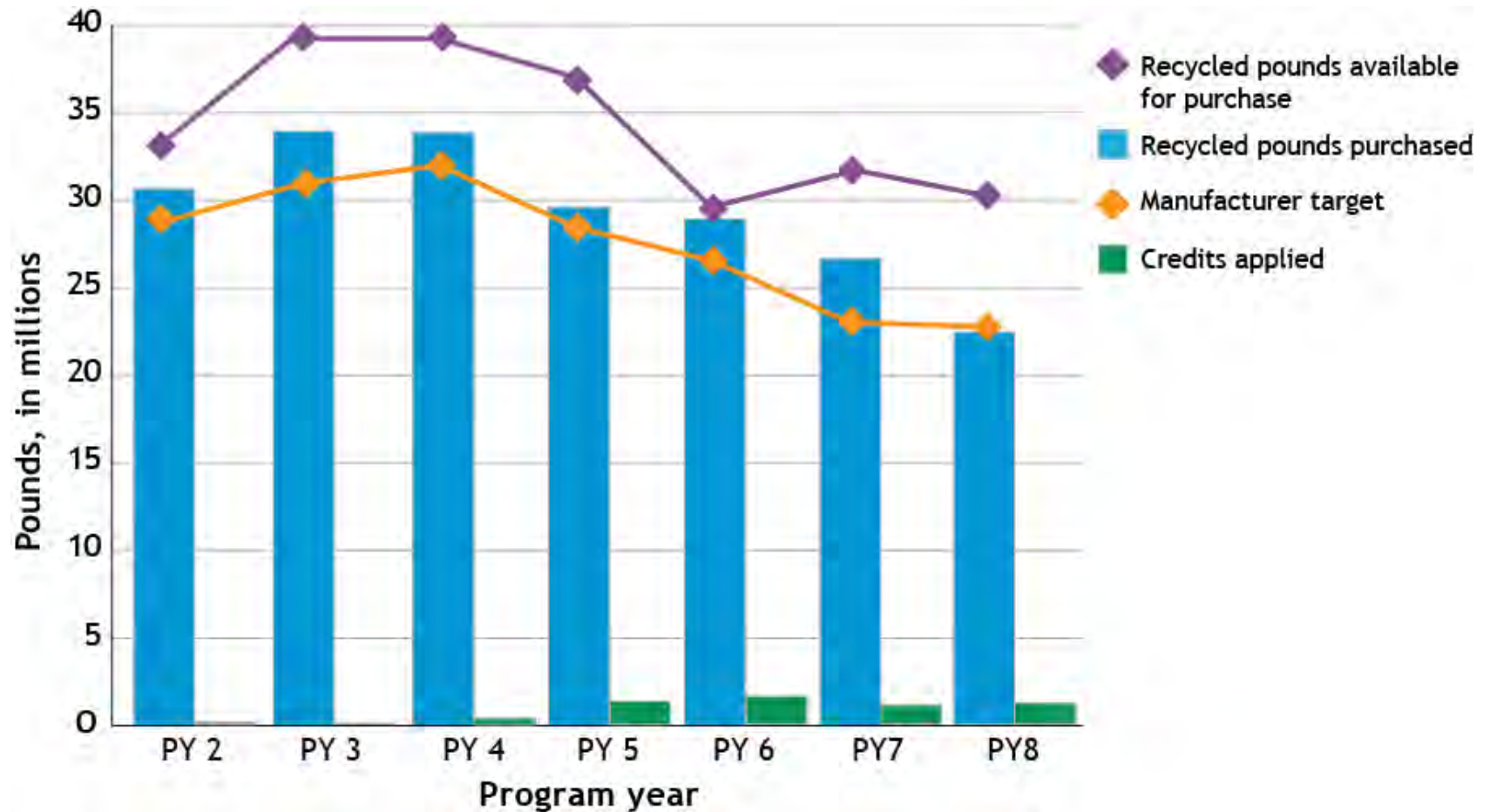
# Fees charged by collectors



# What collectors pay recyclers for



# Declining manufacturer targets



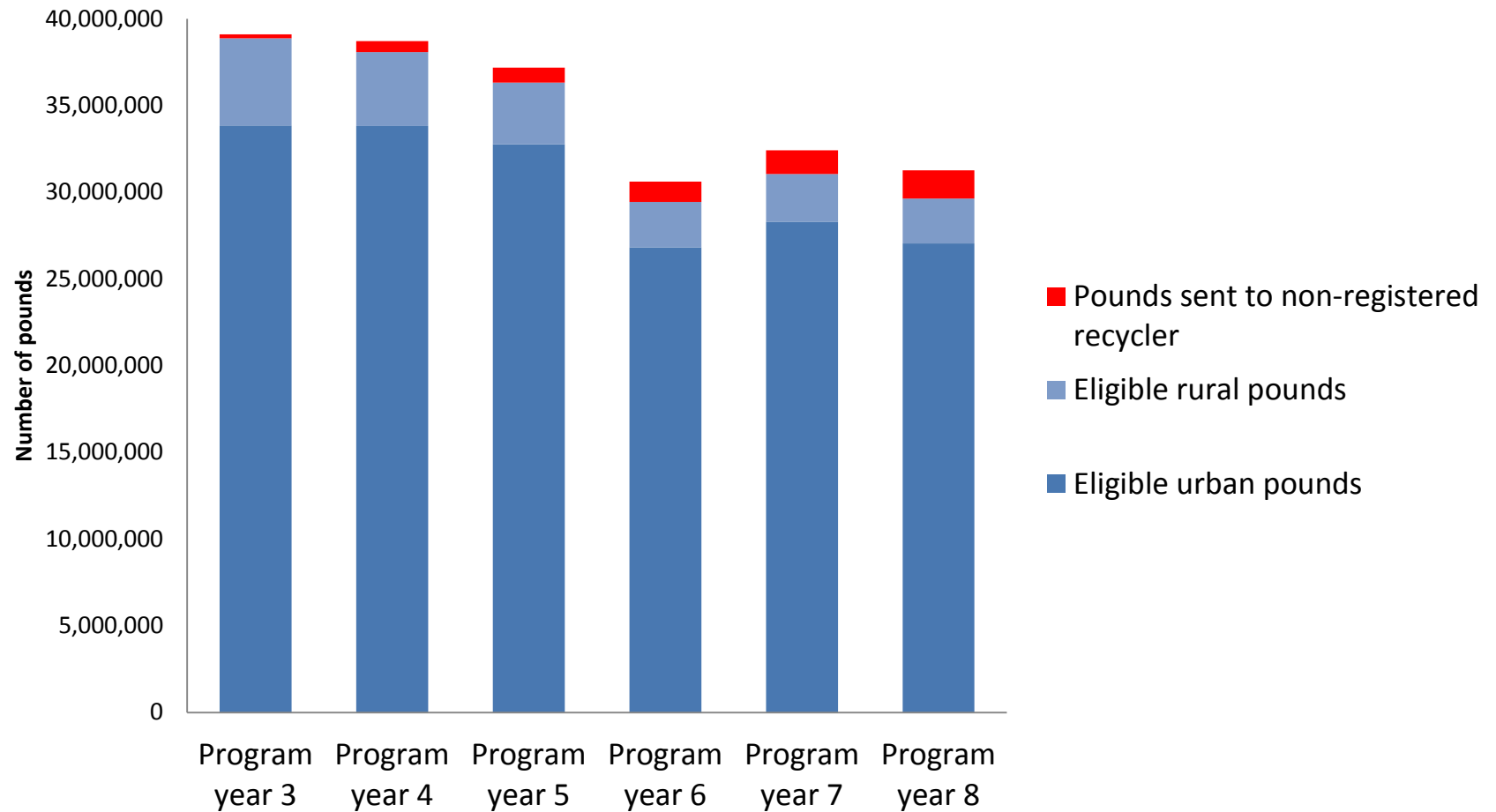
# Scrapping/irresponsible recycling

Estimated \$125,000 cleanup, no funding available





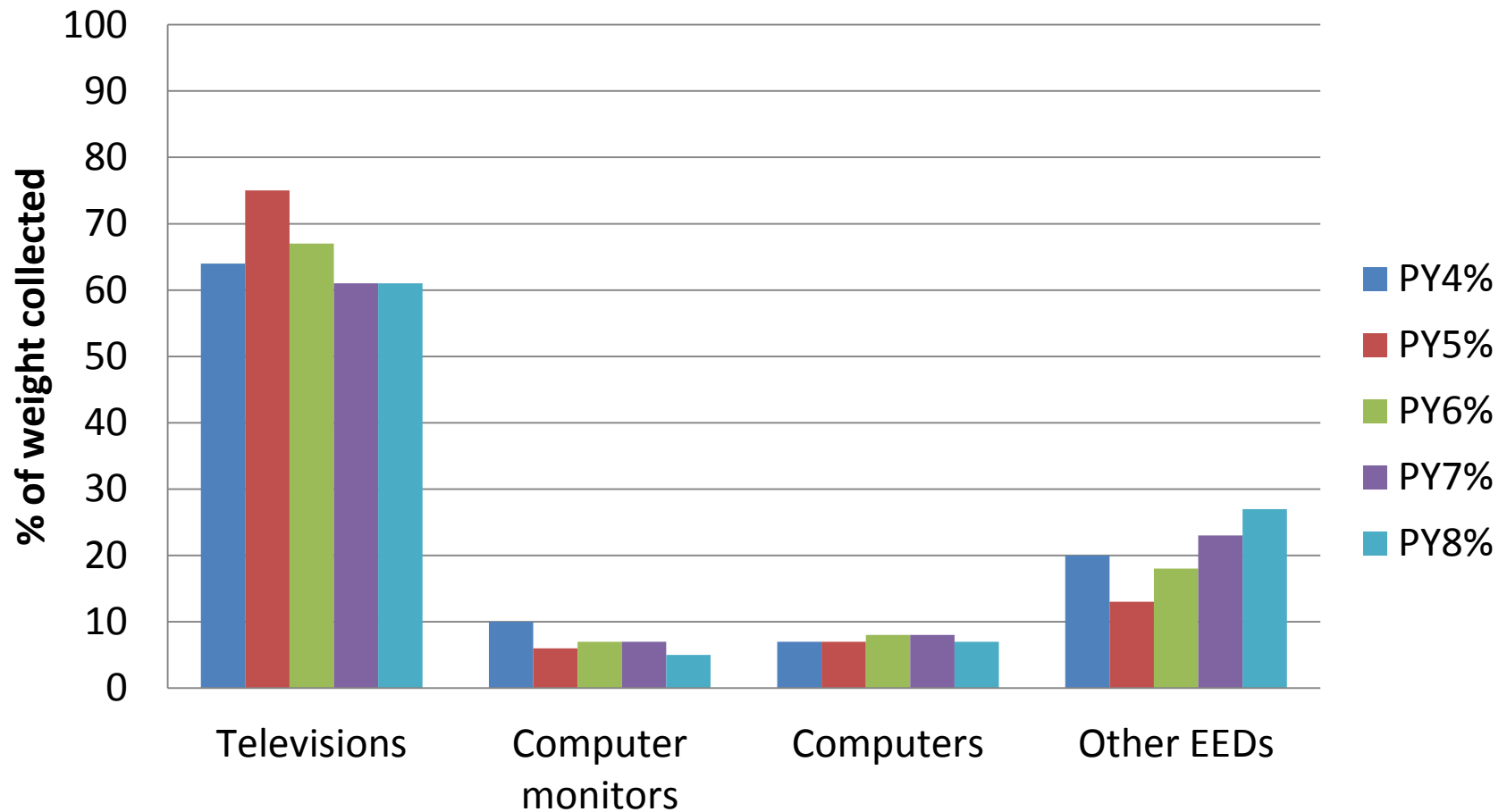
# Material leaving the program



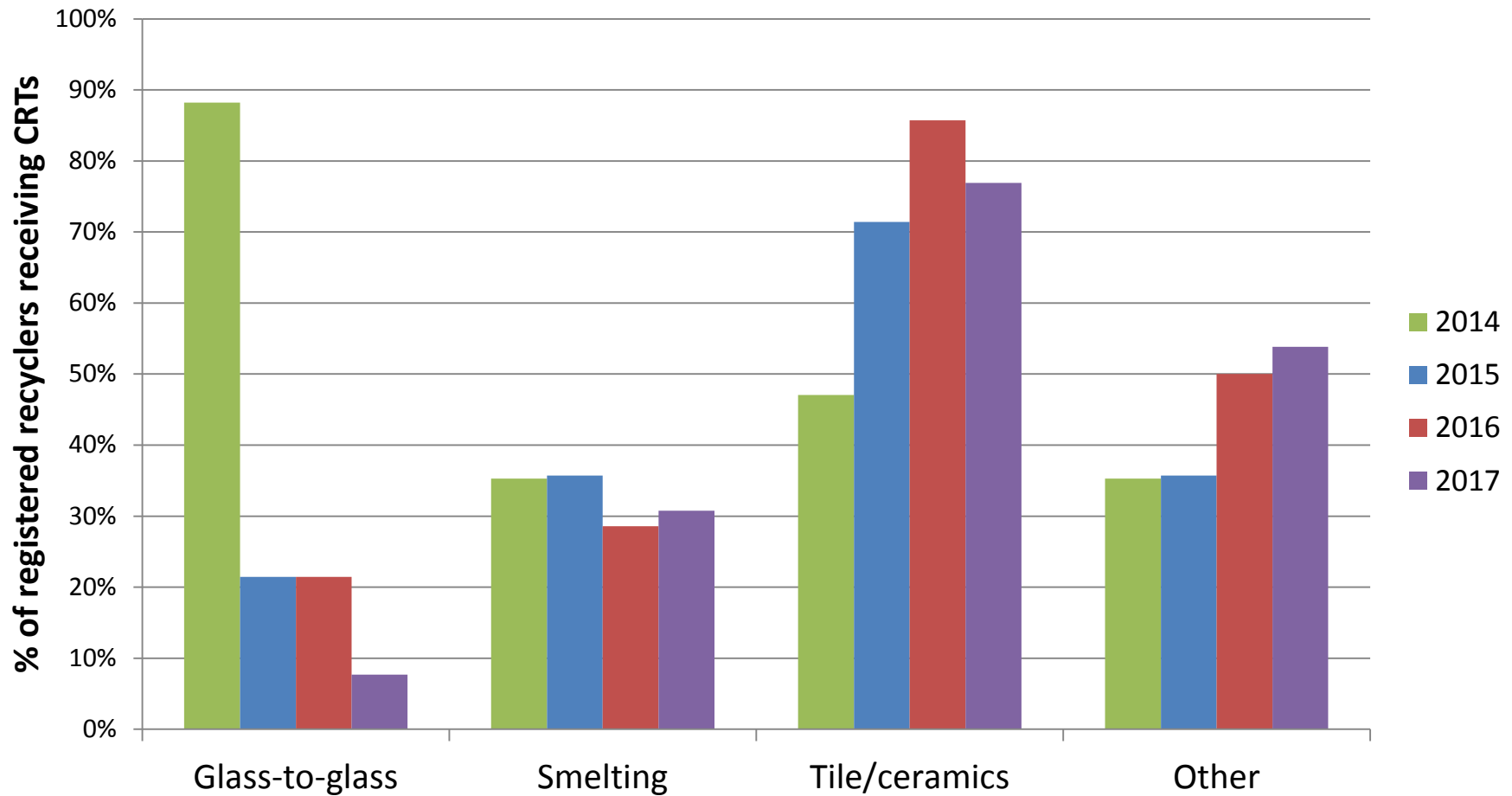
# Cathode ray tubes



# Collection by device type



# Where do E-Cycle WI CRTs go?



# Flat-panel displays

- Growing portion of the waste stream (though CRTs still dominate by weight)
- Main concern is LCD TVs/monitors—up to 20 thin fluorescent bulbs with 1-10 mg mercury each
- Labor-intensive to hand-disassemble (lots of screws, fragile bulbs)
- Currently represent another negative-value item in recycling stream



# Other material/commodity concerns

- What is left after reuse/resale value in newer electronics?
- Low grade electronics/reduced precious metal value
- Batteries
- Data security costs & concerns

## Staff members prevent fire at Brown County Recycling Transfer Station

*The business says that electronics and batteries should be disposed of properly*

By: NATE STEWART

Posted: Dec 04, 2017 08:01 AM CST

Updated: Dec 04, 2017 08:01 AM CST



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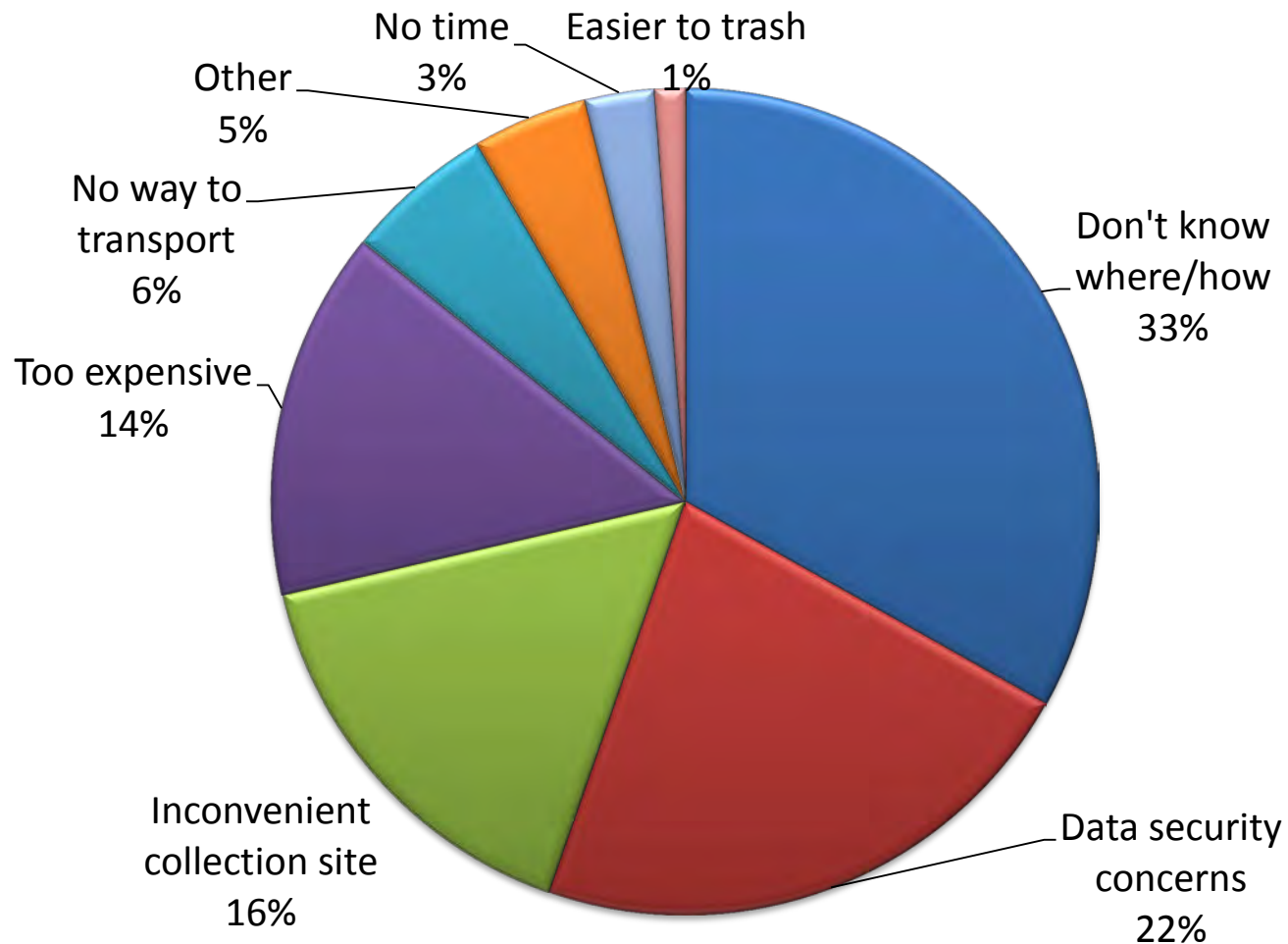
GREEN BAY - The Brown County Recycling Transfer Station is reminding the public that electronics and lithium batteries should never be thrown in recycling or garbage bins, after four lithium polymer batteries from a MacBook Air started smoldering and smoking under a pile of recyclables on November 22nd.

The station says that thanks to fast-acting staff, the smoldering battery pack was extinguished and disposed of properly before any damage was done to surrounding items.

# National Sword effects on plastics

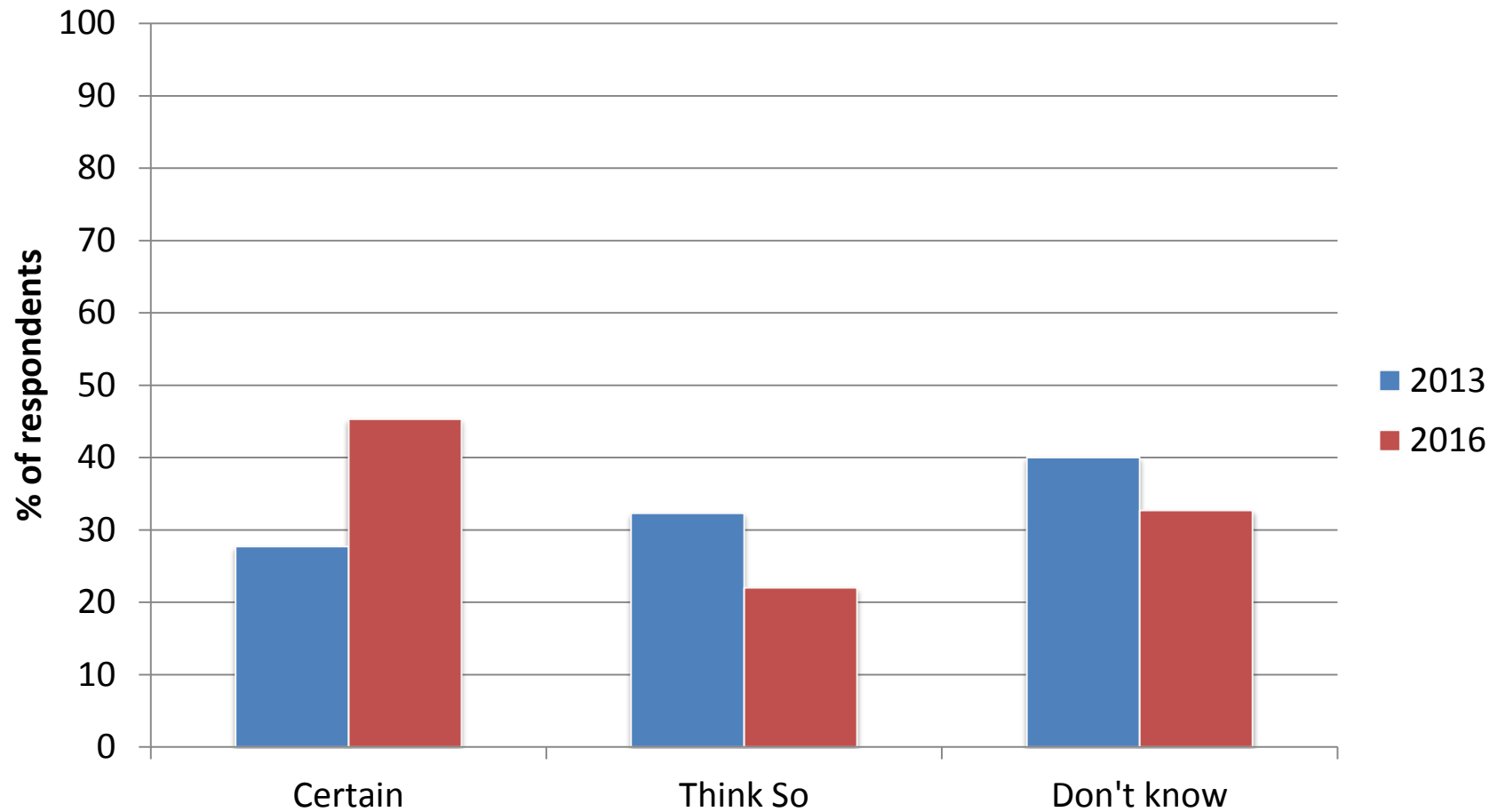
- Main e-plastics: HIPS, ABS, acrylic, low-grade
- Falling values for TV/monitor casings; very little value for low-grade plastics
- Fewer outlets and oversupply - other outlets may be overwhelmed
- Larger recyclers have markets, but don't want to take material from others because of contamination risk
- Recyclers searching for new partners, considering investment in new processing equipment
- DNR monitoring to see if disposal will be needed and determine implications for manufacturer credit

# Barriers to e-cycling (2016)





# Knowledge of where to e-cycle



# DNR outreach efforts

- Holiday 2017 advertising campaign on digital, Pandora radio, Wisconsin Public Radio
- Spring 2018 digital advertising and social media campaign
- Mobile-friendly list of registered collection sites
- Planning for next household survey
- Continue to make publications and promo items available for others to use
- Collector workshops and other webinars

# DNR's free outreach resources

<http://dnr.wi.gov/topic/Ecycle/Outreach.html>

## E-Cycle Wisconsin outreach resources

Local governments, retailers, collectors, recyclers, manufacturers and others can use the outreach materials on this page to educate their residents and customers about E-Cycle Wisconsin and Wisconsin's electronics recycling law. All materials on this page are available for free use unless otherwise noted.

[Publications](#) [Newsletter articles](#) [Graphics and photos](#) [Videos and PSAs](#)

### How to order E-Cycle Wisconsin publications

Anyone is welcome to order free, printed copies of the E-Cycle Wisconsin publications. If you would like editable electronic versions or high-resolution files to print the publications yourself, contact [DNRWae-cycling@Wisconsin.gov](mailto:DNRWae-cycling@Wisconsin.gov). We can help you determine the best way to add your local information to these publications.

[E-Cycle Wisconsin Publications Order Form](#) [exit DNR]

### Official E-Cycle Wisconsin publications

The tri-fold **E-Cycle Wisconsin brochure** describes the E-Cycle Wisconsin program and provides consumers with basic information about electronics recycling. It is available in both color and grayscale (black and white) formats.

- [E-Cycle Wisconsin color brochure \(WA-1426\)](#) [PDF]
- [Hmong translation \(WA-1498\)](#) [PDF]



### Electronics recycling

#### Subscribe

to the Electronics Recycling Updates email list.

### E-Cycle Wisconsin

- [Overview](#)
- [Covered devices](#)
- [Manufacturers](#)
- [Recyclers](#)
- [Collectors](#)
- [Retailers](#)
- [Local governments](#)

### Related links


- [How to recycle electronics](#)
- [Collection event tips](#)

# DNR's collection sites list

E-Cycle Wisconsin registered collection sites - Internet Explorer  
https://wisconsin.dnr.shinyapps.io/EcycleCollectorSite/ E-Cycle Wisconsin regist... x

File Edit View Favorites Tools Help  
x Convert Select

Wisconsin Department of Natural Resources

 Find registered collection sites [Download Statewide List](#)

Answer the three questions below to see a list.

Where are you?  
Which items do you need to e-cycle?  
Where were the items used?

<b>Best Buy - Madison East</b> 2452 E Springs Dr, East Towne Madison, WI 53704 888-237-8289 Website <b>Site Type:</b> Permanent - contact for details	Show/hide items accepted...
<b>Best Buy - Madison West</b> 7357 West Towne Way Madison, WI 53719 888-237-8289 Website <b>Site Type:</b> Permanent - contact for details	Show/hide items accepted...
<b>City of Madison Badger Rd drop-off site</b> 1501 W. Badger Rd. Madison, WI 53713 608-267-2626 Website <b>Site Type:</b> Permanent - contact for details <b>Note:</b> City of Madison residents only. Fees apply for some items.	Show/hide items accepted...

# Summary: what has changed?

- Slow transition to flat panels from CRTs
- Lighter new product weight
- More and more screens and “computers”
- Rise of more powerful, less removable batteries
- Dwindling CRT markets and high-profile stockpiles
- Disruptions in commodities markets
- Higher costs encouraging more scrapping?
- More devices containing personal data

# Summary: what we need to address

- End-of-life costs for consumers
- Lack of access for some consumers
- Consumer data security concerns and awareness gaps
- Taxpayer costs
- Scrapping/irresponsible recycling
- Waste/recycling system risk from batteries
- Changing material stream (less value outside of reuse)
- Toxics legacy (lead, mercury, flame retardants, etc.)

# Potential legislative changes (2017)

- Switch to calendar year for program year
- Manufacturer target formula changes
- New rural incentives
- Reduced registration fees for small manufacturers
- Inclusion of all K-12 schools
- Updated device definitions

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**WISCONSIN**



# Potential non-legislative actions

- Collection site consolidation and collaboration
  - Find ways to combine material from small sites into full loads
  - Shared events across municipalities/county (e.g., Waukesha Co.)—more access for residents with same number of sites/events
- Proactively addressing underserved areas
  - Reach out to incorporate existing non-program sites or start new sites/events
  - Could come from DNR, recyclers, manufacturers, other collectors
- More value for consumers
  - Creative ways to add value to recycling experience in exchange for fee; focus on data security?



# Contacts

- DNR website: <http://dnr.wi.gov/topic/ecycle>
- Sarah Murray, E-Cycle WI coordinator  
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