



E-Cycle Wisconsin: successes and challenges in the first five years

E-Cycle Wisconsin stakeholder meeting
May 19, 2015

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 with screen 7" and up
- DVD players, VCRs and DVRs
- Cell phones

Hazardous waste rules still apply for non-households

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 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 Waste and Material Management
P.O. Box 7921, Madison, WI 53707 • (608) 266-2111
DNRMW-e-cycling@wisconsin.gov

The Wisconsin Department of Natural Resources provides equal opportunity in its employment programs, services and facilities, under an Affirmative Action Plan. If you have any questions, please write to Equal Opportunity Office, Department of Natural Resources, P.O. Box 7921.

This publication is available in alternative format upon request. Website accessible at: dnr.wi.gov. Please call 608/266-2111 for more information.

PUB-WA-1427 2015

 Recycle Right Now



dnr.wi.gov "ecycle"

E-Cycle Wisconsin

**E-CYCLE
WISCONSIN**

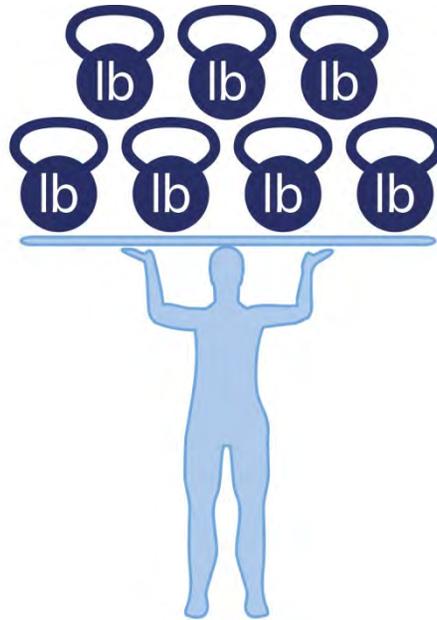


- Product stewardship-based program created to complement disposal bans
- Shared responsibility among manufacturers, retailers, collectors, recyclers, governments and consumers
- Manufacturers of TVs, computers and printers fund recycling based on market share
- Specific network of registered collectors and recyclers meeting certain requirements
- Distinguishes between electronics recycling to meet manufacturer obligations and other collection and recycling activities

What the law doesn't do

- Guarantee free recycling to consumers or collectors
- Require retailers, local governments or others to collect electronics
- Require a license or permit for collecting or recycling electronics
- Set or guarantee manufacturer payments to recyclers or collectors
- Change recycling requirements for businesses, governments, institutions

Successes

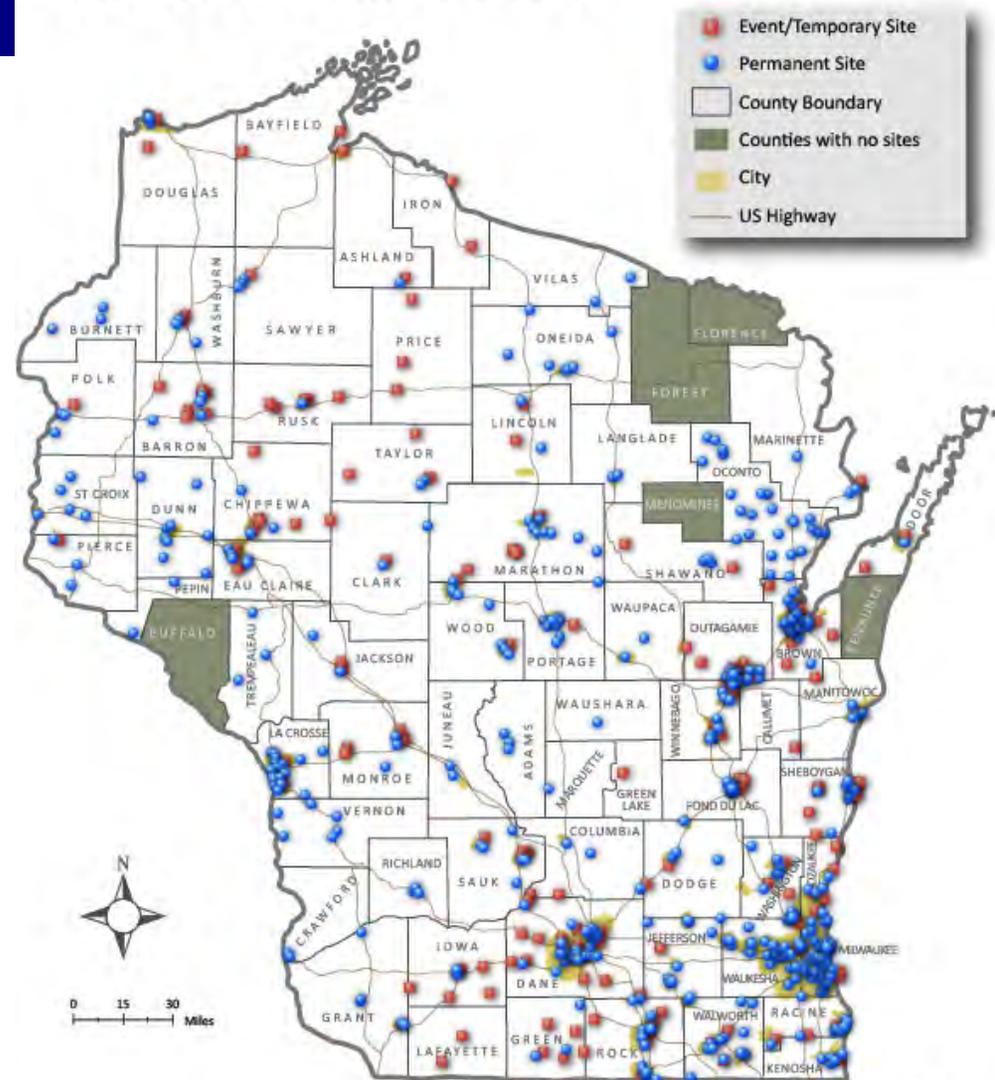


We have recycled nearly 7 pounds of electronics per person every year through E-Cycle Wisconsin – which is one of the highest e-cycling rates in the United States.

Participation

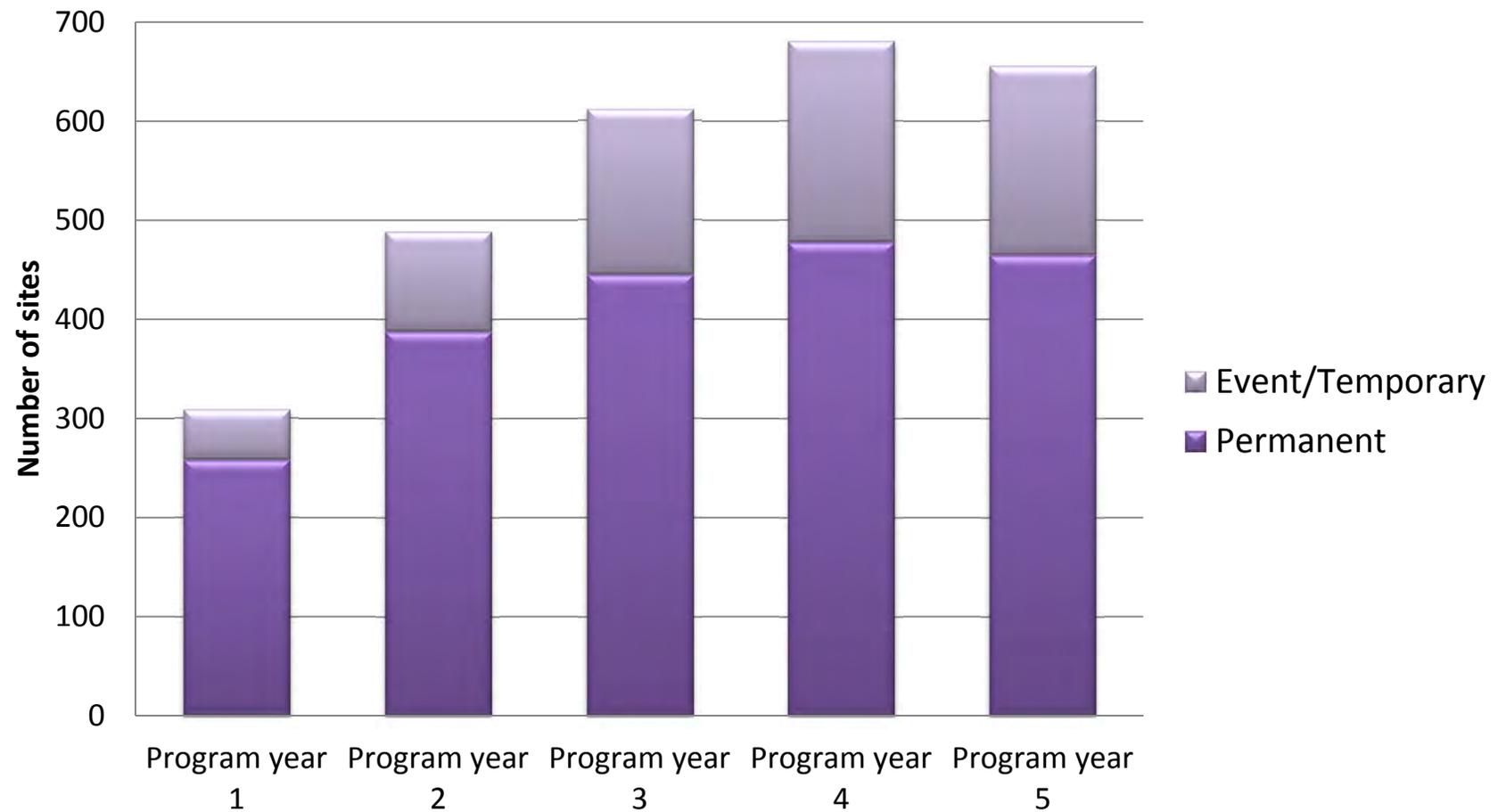
- 130+ registered collectors with about 400 collection sites
- 25 registered recyclers
- 115+ registered manufacturers with nearly 200 brands

**Registered E-Cycle Wisconsin Collection Sites,
July 1, 2013 - June 30, 2014**

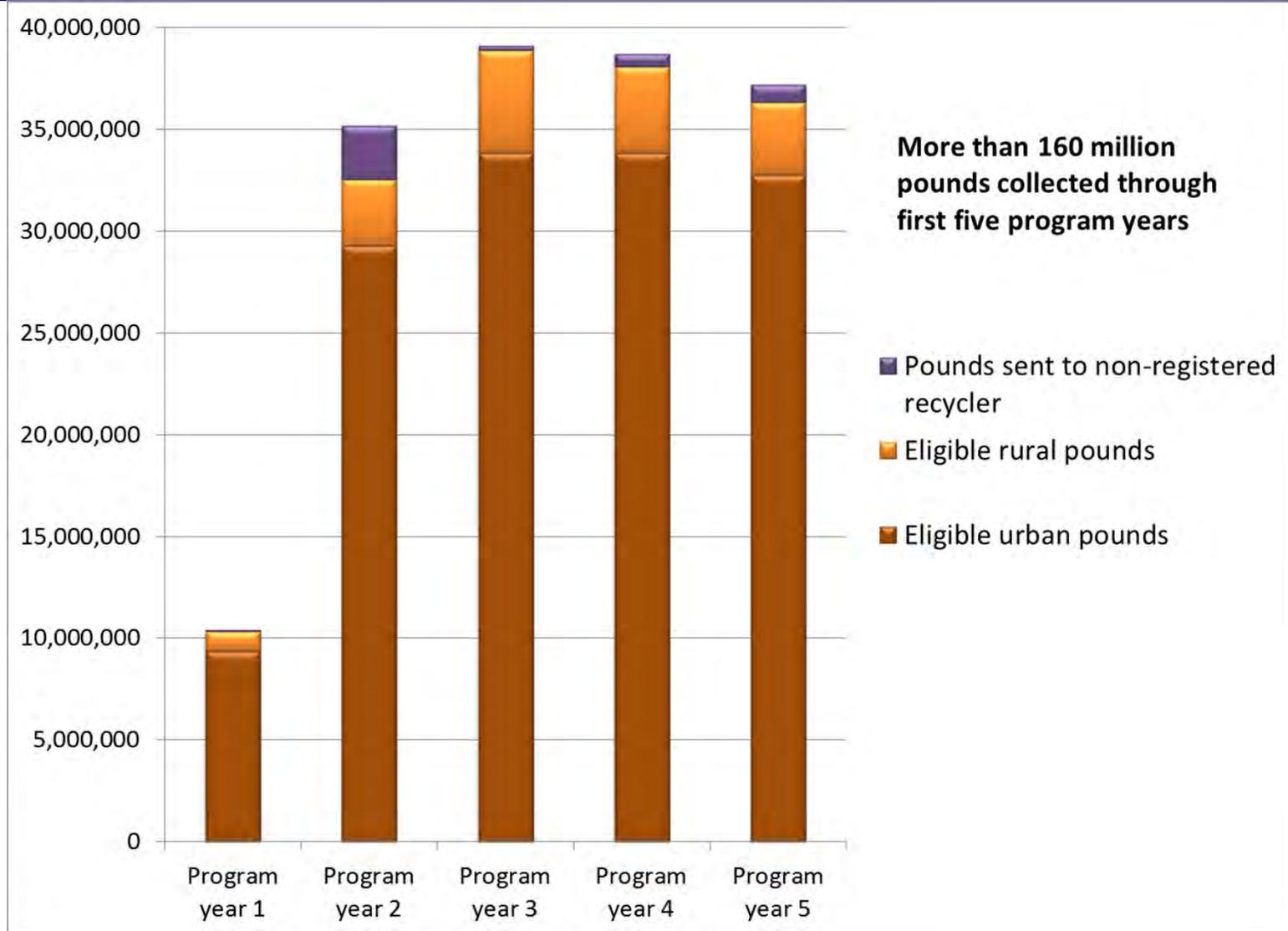


Revised: November 12, 2014

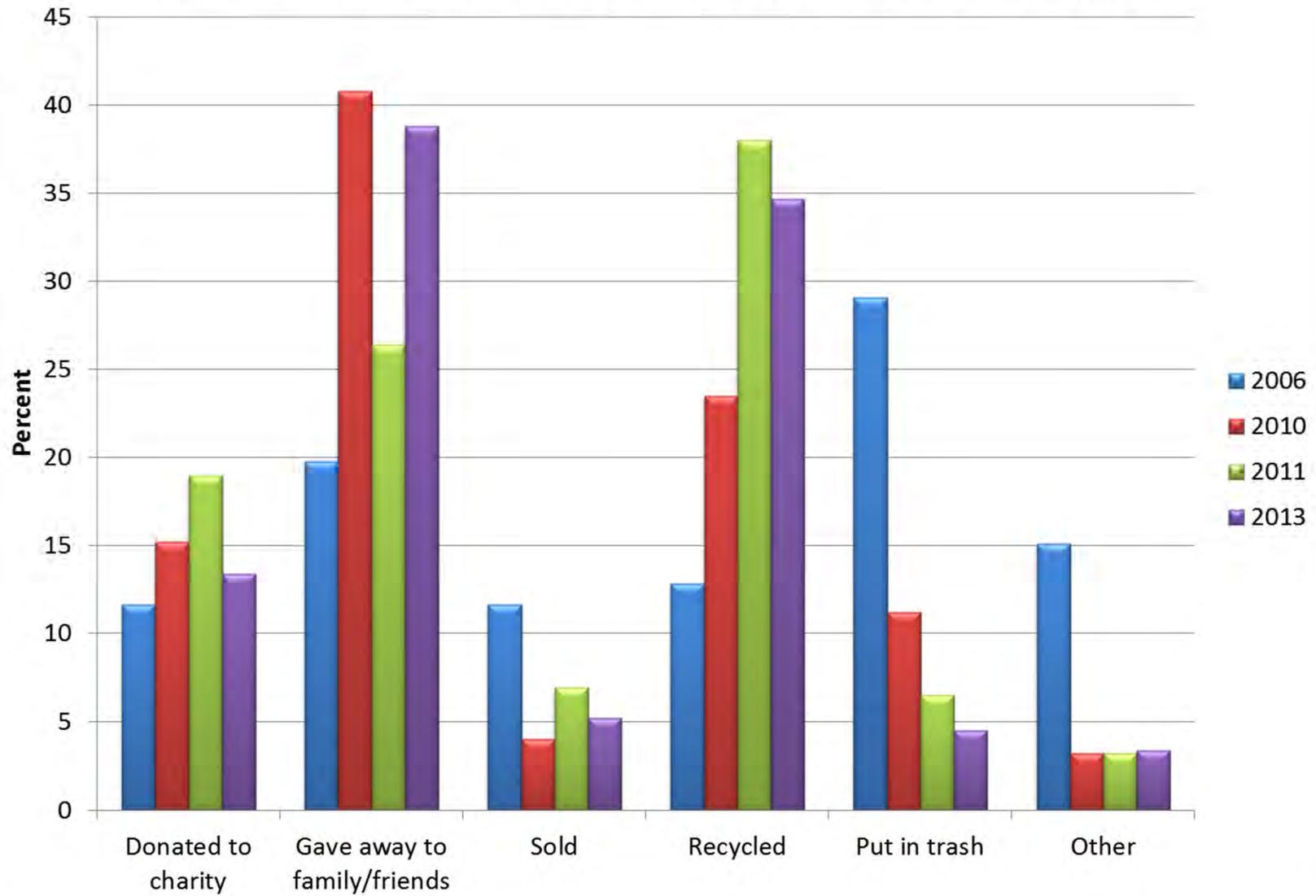
Registered collection sites



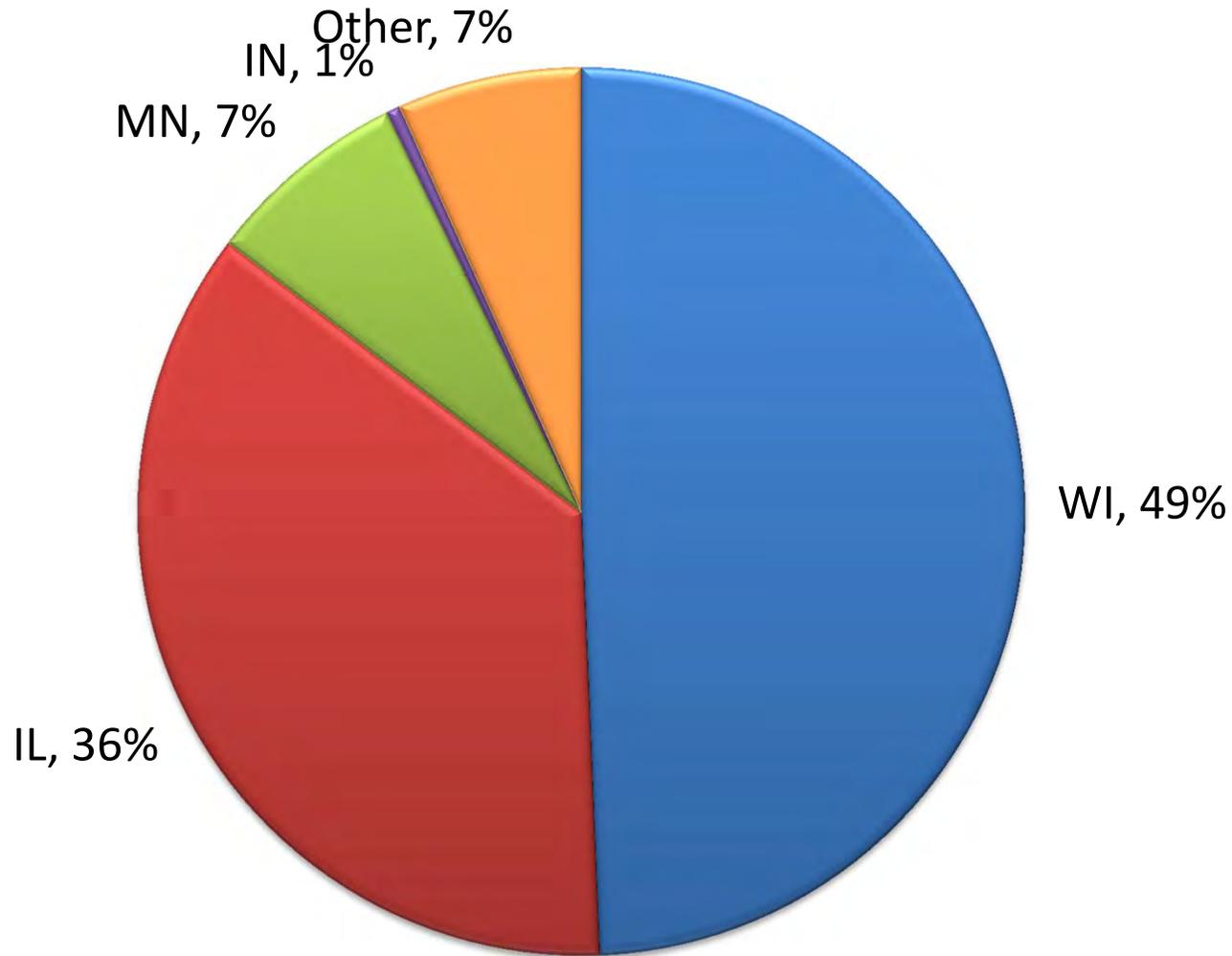
Pounds collected by program year



Wisconsin household TV disposal method, over time (from DNR surveys)



Where collected materials go (PY5)



Outreach/compliance initiatives

- Multimedia ad campaign targeting young adults and northern/southeast regions
- New compliance assistance videos and publications mailed to collectors and local governments
- Contacted school facility managers to make sure they are aware of the program
- Free publications available to order and use

Collector Best Management Practices: Electronic Waste

Proper handling of electronic waste protects site workers and the public and prevents pollution. It can also make electronics much more recyclable, and therefore profitable, than improper handling. The following list of best management practices for electronics collection sites could help save the entire electronics collection system money while making your site safer. Most of the suggestions below are not laws or specific requirements under the E-Cycle Wisconsin program, but will help protect human health and the environment.

Site selection

The ideal place to store collected electronics is in an indoor location. The next best option is in covered containers. The idea behind both storage techniques is to keep electronics out of the elements so that they do not crack, leak and weather. If covered storage is not possible, frequent pickups by your recycler can help make sure electronics remain recyclable.

Broken cathode ray tubes (CRTs) **must** be stored in a building with roof, floor and walls and in a container designed and constructed to contain dust.

Electronics contain valuable materials and sensitive data. It is a good idea to secure your site by locking buildings and gates and monitoring with video cameras to protect from theft, vandalism and illegal dumping. You may also want to store electronics in locked containers, especially if it is difficult to prevent unwanted access to your site.



This covered roll-off container provides indoor storage and can be locked for security purposes.

Storage

Every collection site stores electronics in slightly different ways. Regardless of storage methods the following three practices apply:

- ✓ Keep all storage areas clean and orderly.
- ✓ Have an attendant on duty during open hours for security and to prevent mishandling and breakage of electronics.
- ✓ Send all materials off-site for recycling within one year of their arrival.

Work with your recycler to find the best way to store and package electronics so that it works for both of you while minimizing breakage. Recyclers will often provide you with packaging and may assist you in loading materials onto a truck. The suggestions below work for most sites, but if you use large roll-off containers only the stacking practices may apply to you.

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
- New suspension/revocation guidance
- Closer scrutiny of reporting using online system
- Will be working with collectors to improve recordkeeping used to verify recycler weights

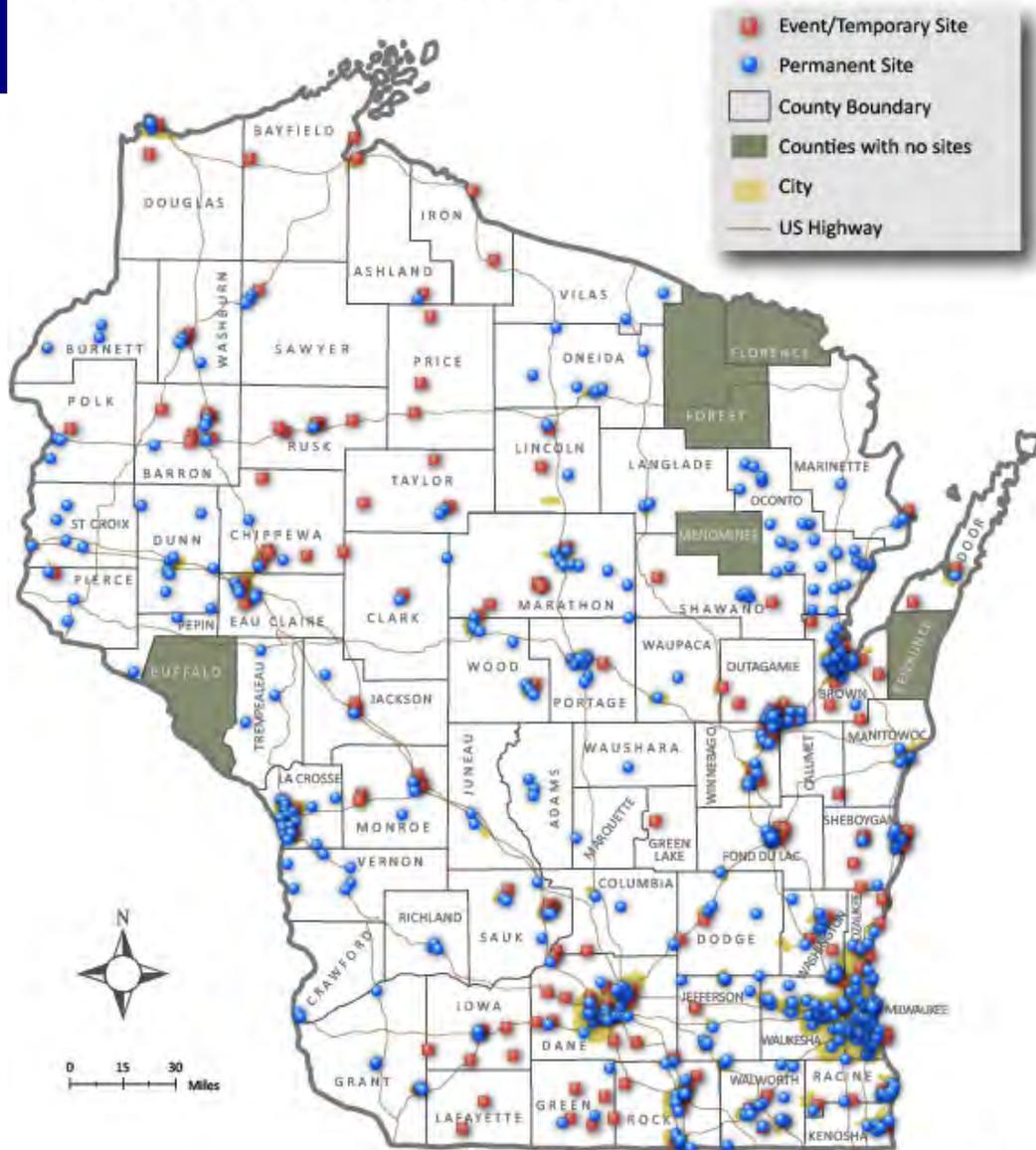
Challenges



Key current program challenges

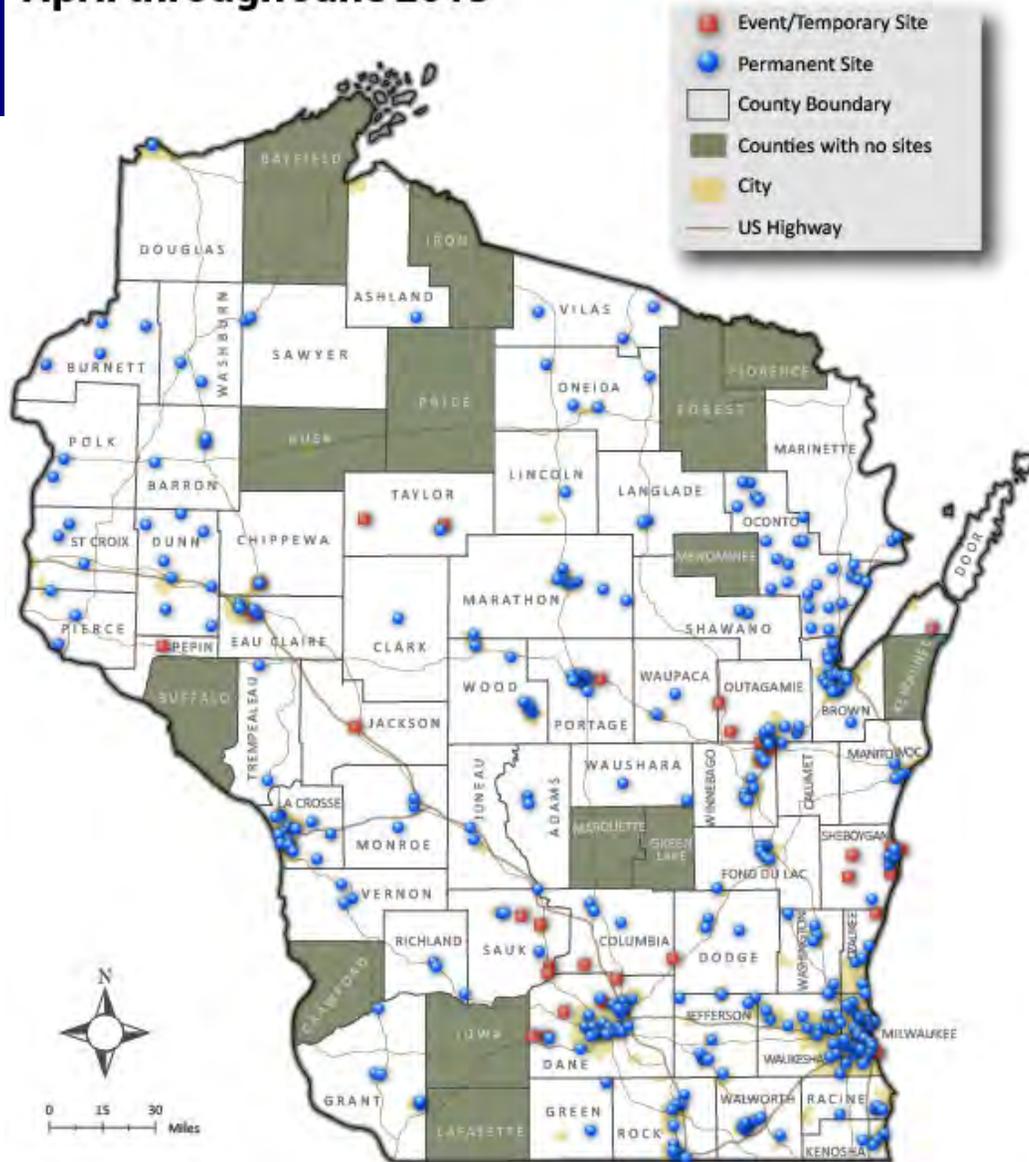
- Consumer access
- Increased costs/fewer recycling options
- Downstream markets & changing nature of electronics
- Reliance on inefficient collection/recycling methods
- Illegal dumping, backyard scrapping and irresponsible recycling

Registered E-Cycle Wisconsin Collection Sites, July 1, 2013 - June 30, 2014



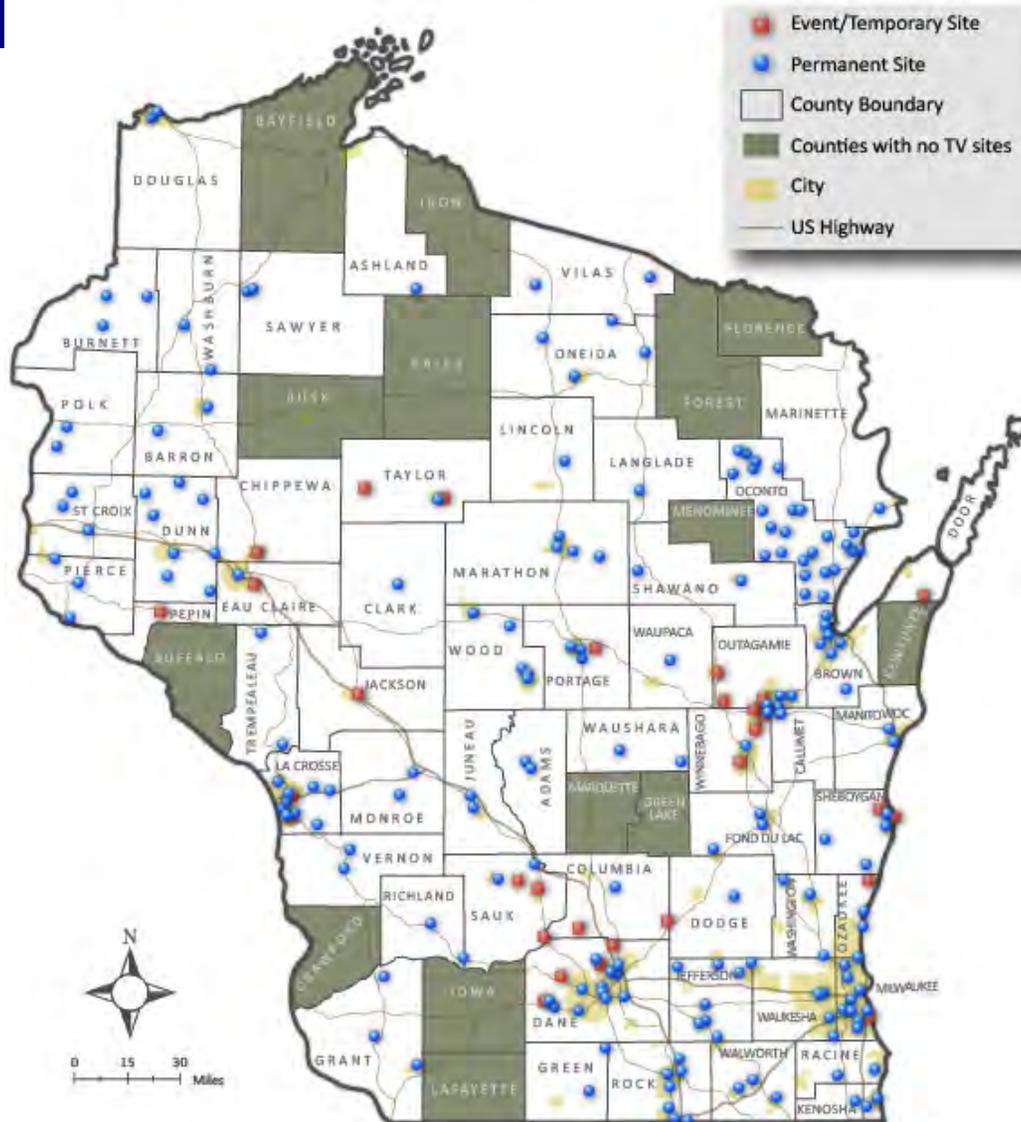
Revised: November 12, 2014

Registered E-Cycle Wisconsin collection sites April through June 2015



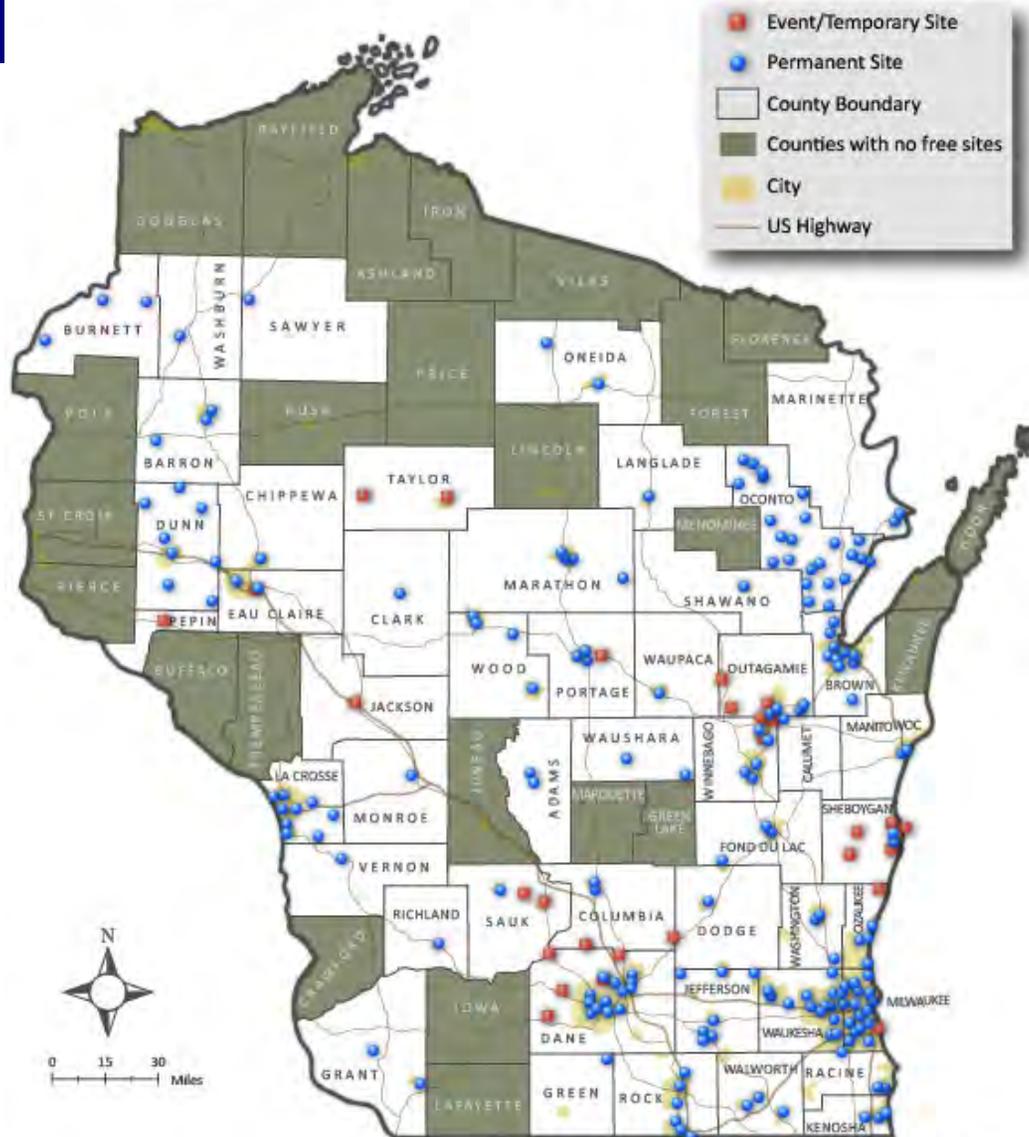
May 8, 2015

Registered E-Cycle Wisconsin collection sites that accept most TVs



May 8, 2015

Registered E-Cycle Wisconsin collection sites collecting some items for free



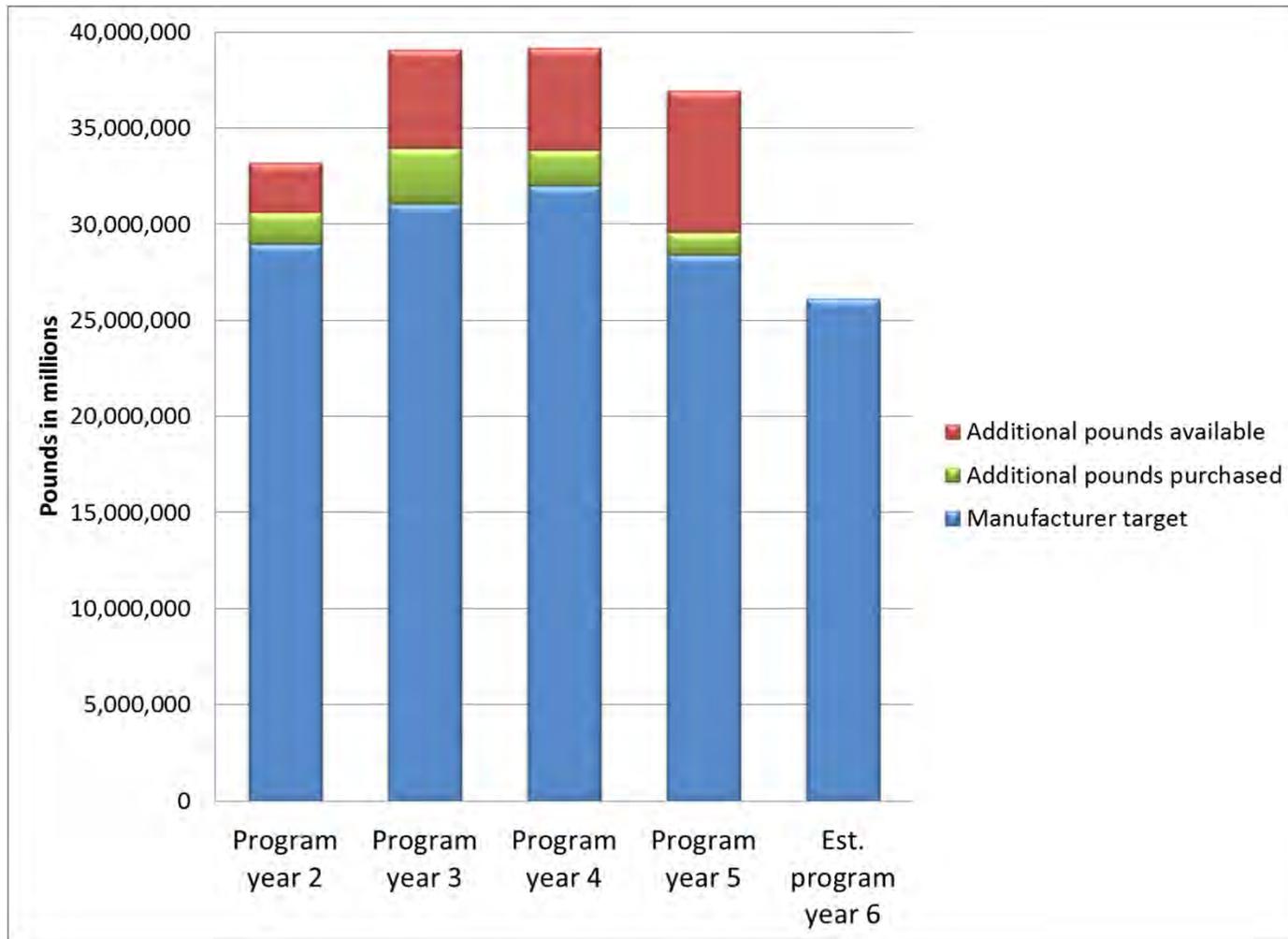
*Based on fee information provided on 2014 collector annual reports

May 8, 2015

Site changes this program year

- Some collectors are doing fine, but there have been a lot of challenges overall compared to previous years
- Many permanent sites and event organizers were dropped by their recyclers, and have had difficulty finding an affordable replacement
- Cost challenges exacerbated by recycler compliance problems
- Several sites have added or increased fees
- Many sites have restricted the types of TVs they accept
- Some permanent sites have switched to events

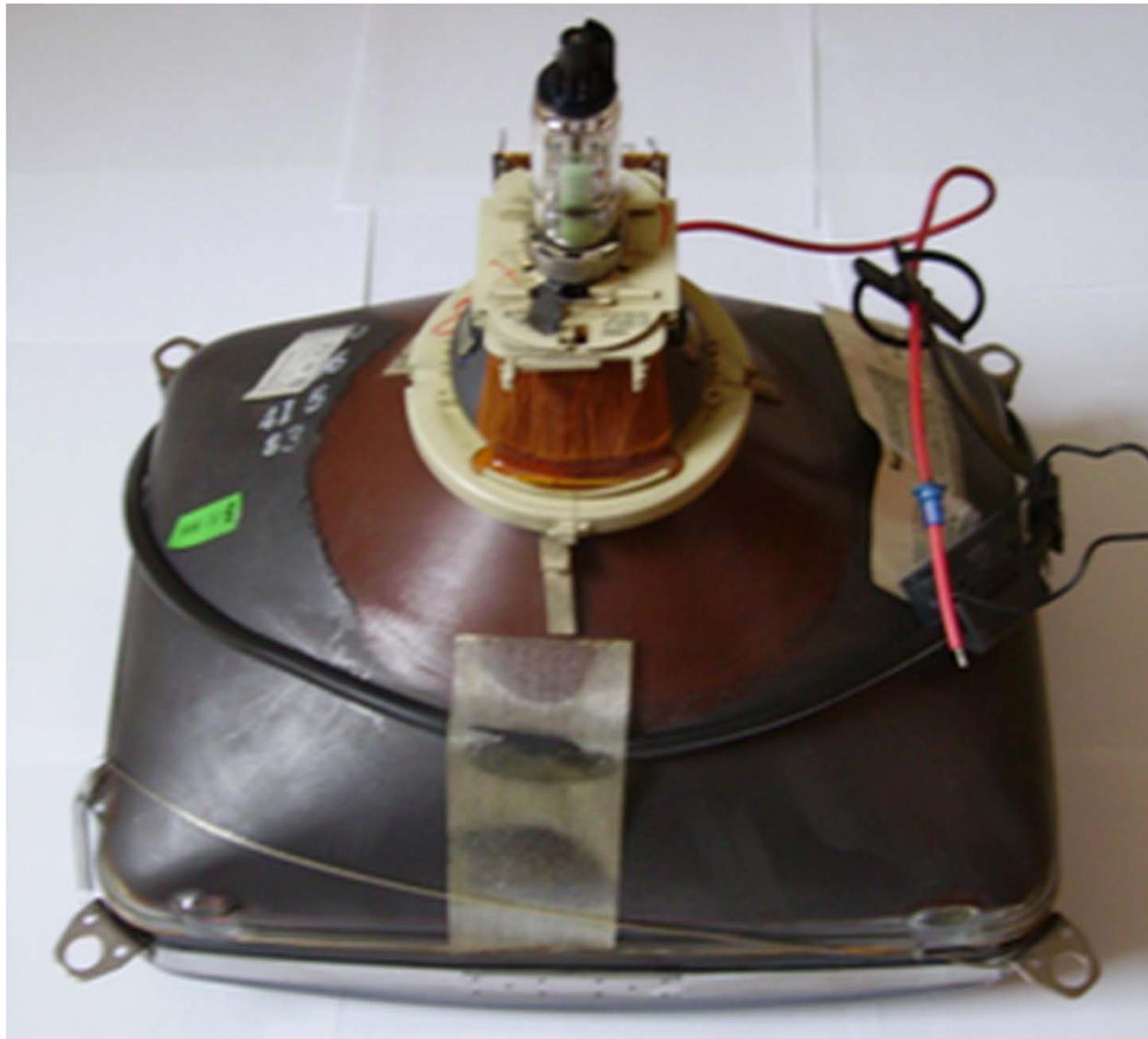
Growing gap between collection & targets



Rising costs mean change & uncertainty

- Manufacturers are dealing with programs across many states and their bottom lines—need to control costs and manage liability
- Oversupply of pounds can mean lower manufacturer payments, in addition to pounds not covered at all
- Manufacturer contract changes lead to network disruption
- Rising costs must be passed on to consumers or absorbed
- Less cushion to deal with sudden changes and unexpected events

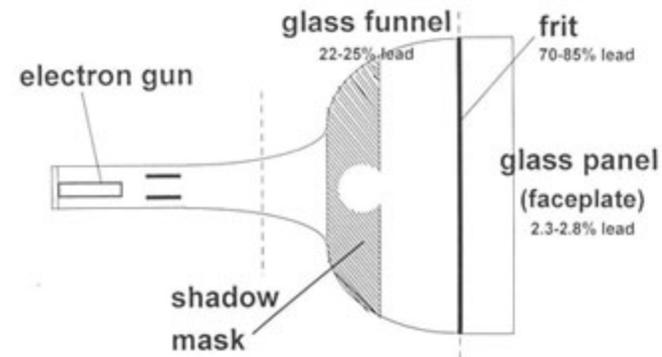
Cathode ray tube



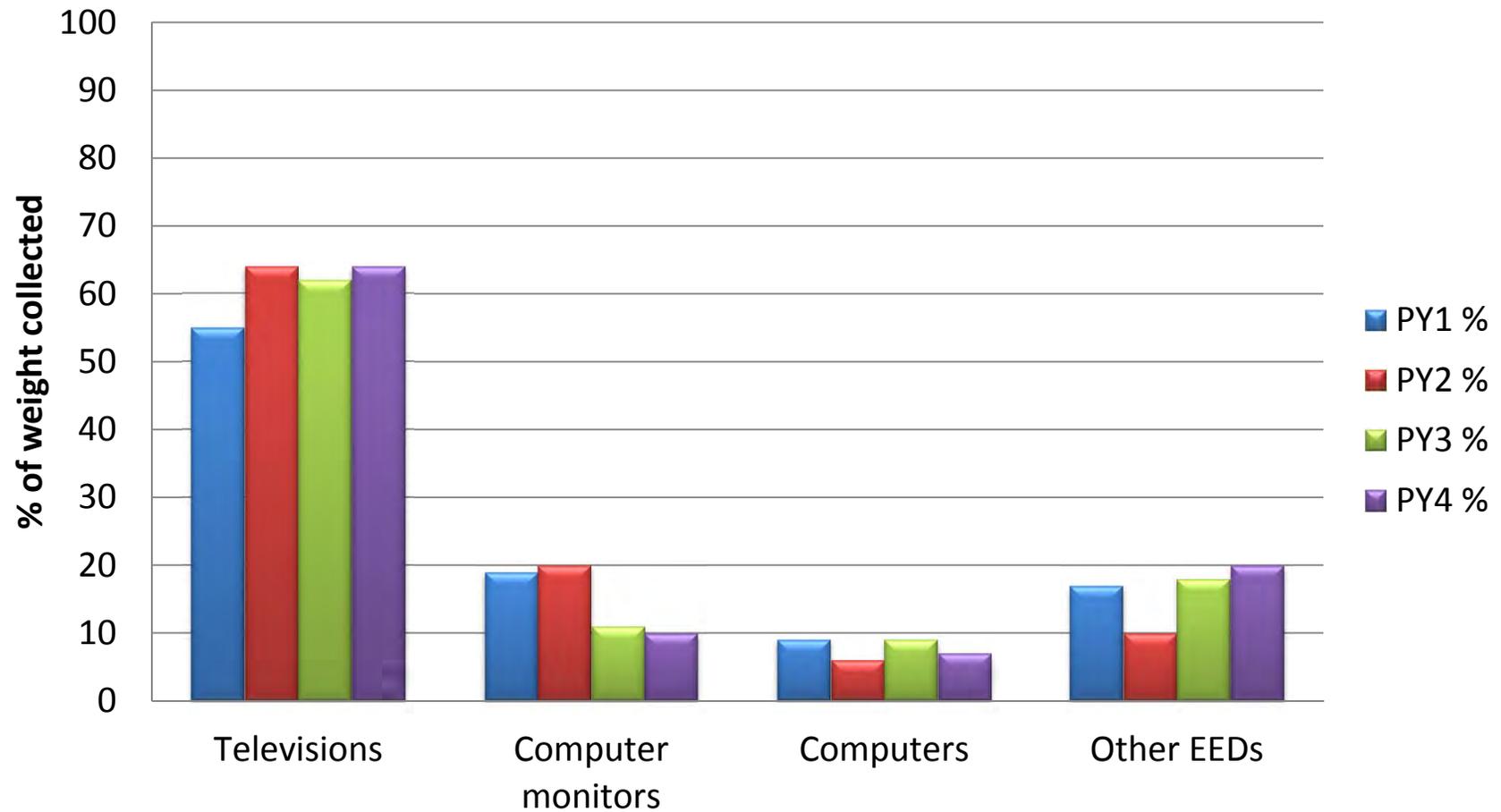
CRT basics

- **Panel glass** (screen) contains very little lead, though hazardous phosphor coating must be removed. Can be reused/recycled (with some limitations)
- **Funnel glass** contains lead and must be treated as hazardous waste if not recycled. Average CRT can contain 4 to 7 pounds lead

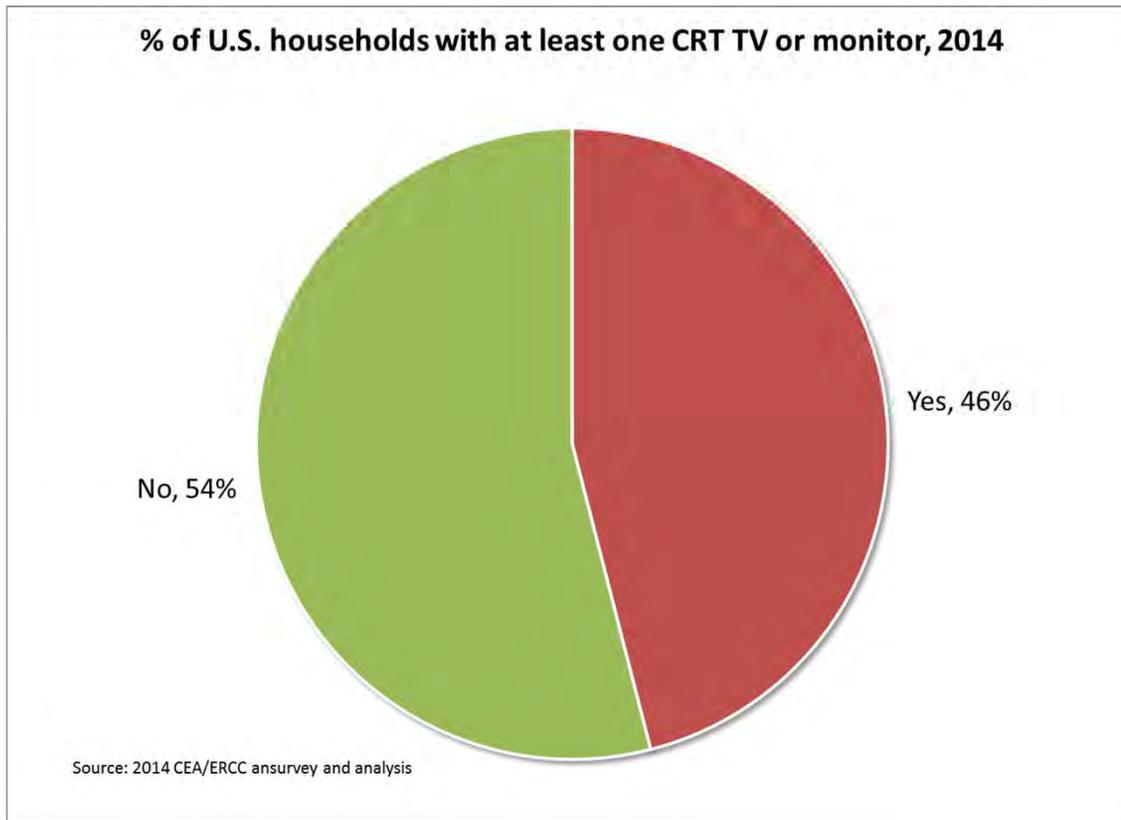
CRT Components



Collection by product type



How many CRTs are left?



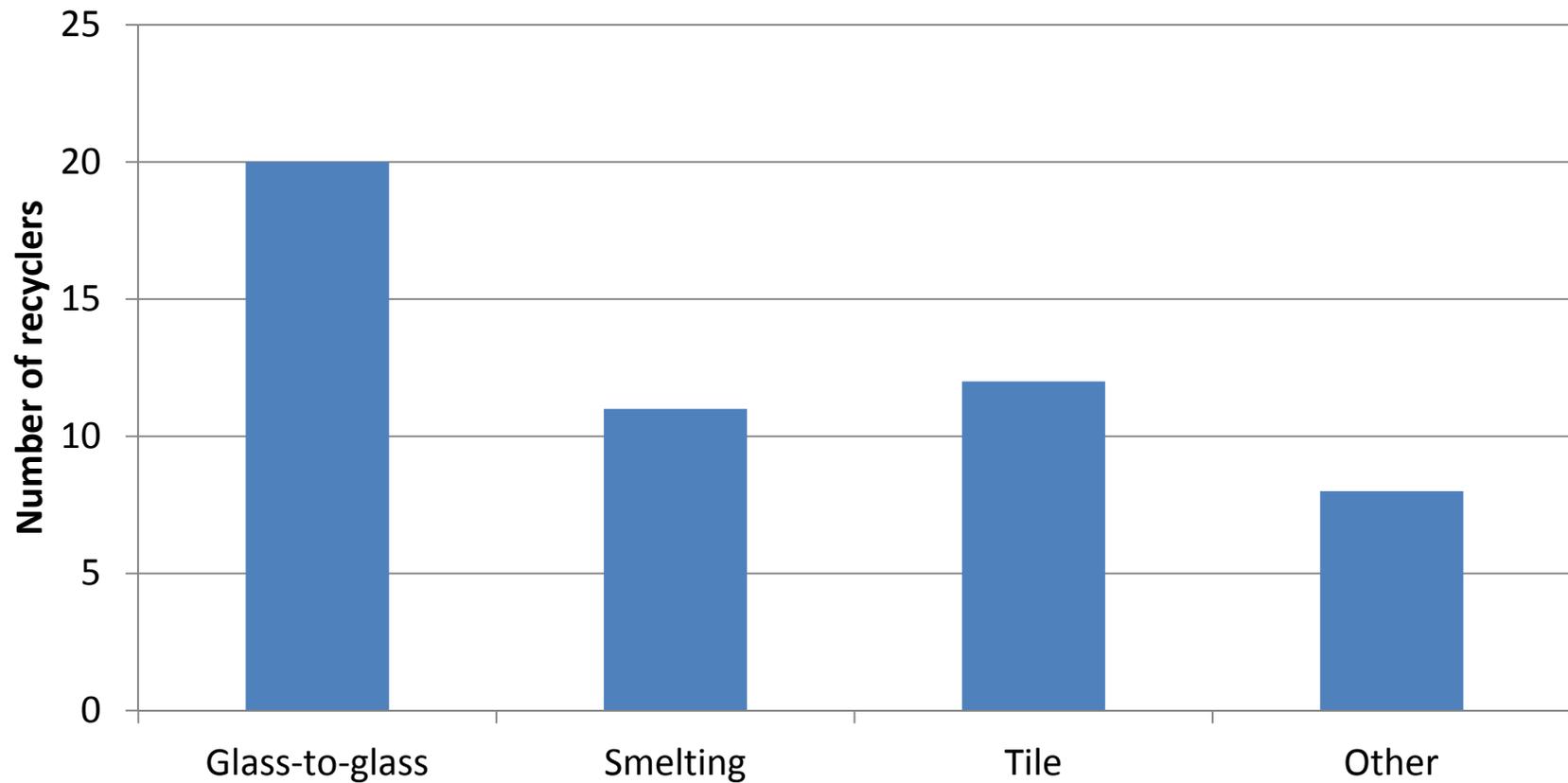
- About 130 million pounds of CRTs left in WI households
- Have been recycling about 27 million pounds of CRTs per program year
- At current recycling rates, about 5 years left of major CRT weight in program

Current CRT market options

- Glass-to-glass (new CRTs)
 - One furnace remaining in India; could shut down with little warning
- Traditional lead/copper smelters
 - Currently operating in MO and Canada
 - Lead is extracted and glass (silica) used for flux
- Ceramic tile
 - Potentially could be sent to Europe where it is used to replace lead oxide in traditional glaze for ceramic tiles
 - Other potential tile projects
- New extraction technologies
 - Nulife Glass smelting furnace approved in NY
 - Other new technologies in ID, OH, elsewhere
- Disposal/alternate daily cover

Where do E-Cycle WI CRTs go?

Where registered E-Cycle WI recyclers send CRT glass (fall 2014)



DNR's landfill disposal guidance

- Most CRT glass would be a hazardous waste if not recycled. Can be disposed in a hazardous waste landfill.
- If requirements are met, cleaned/treated nonhazardous CRT glass may also be landfilled
- BUT...any CRT glass collected under E-Cycle Wisconsin that is landfilled DOES NOT count toward manufacturer credit (including ADC)
- Cleaned panel glass may have additional beneficial use applications, subject to receiving a low-hazard waste grant of exemption from the DNR
 - Eligible for manufacturer credit UNLESS used in landfill

Future issues/program eligibility

- DNR guidance on eligibility could change if there are major market disruptions—question is whether CRT glass is “recyclable”
- Cost of CRT management will likely lead to more costs for those recycling them
- Some pressure on EPA to relax accumulation standards and/or take more enforcement action
- Will new markets develop?

Inefficiencies & logistical challenges

- Lots of rural areas with small collection sites
- Lack of training and/or labor and equipment for efficient and safe packaging and storage
- Fewer recyclers means longer hauling distances
- Big TVs are hard to deal with
- Problems with scavenged/broken items arriving at collectors or scavenging/breakage on unsecured sites

Dumping/irresponsible recycling



Finding solutions

- Non-legislative and short term
 - Is there information participants need that we could provide?
 - Are there changes DNR can make to the way we administer the program?
 - Are there voluntary steps participants can collaborate on?
- Legislative and long term
 - DNR annual report and policy recommendations
 - Independent efforts with legislators
 - Changes in the industry, commodity prices, mix of materials will affect how the program works

Potential legislative changes

- 2014 DNR report:
 - Switch program year to coincide with calendar year
 - Cover all K-12 schools
 - Reduce registration fees for smallest manufacturers
 - Expand the list of covered electronics (cell phones, video game consoles, portable DVD players)
- Other items that have been discussed:
 - Increase manufacturer targets and/or change manufacturer target formula
 - Eliminate rural incentive and instead require a certain percentage of collection to come from rural areas
 - Find a way to incentivize/support CRT collection

Contacts

- DNR website: <http://dnr.wi.gov/topic/ecycle>
- Sarah Murray, E-Cycle WI coordinator
sarah.murray@wisconsin.gov (608) 264-6001
- Marcy McGrath, E-Cycle WI compliance coordinator
marcy.mcgrath@wisconsin.gov (920) 662-5167
- Amalia Baldwin, E-Cycle WI outreach coordinator
amalia.baldwin@wisconsin.gov (608) 267-7594

