



Trends in electronics disposal at Wisconsin solid waste facilities

Results from a 2014 DNR survey of landfill and transfer station operators

April 2015

As part of an evaluation of Wisconsin's electronics recycling law, the Department of Natural Resources conducted an online survey of solid waste landfill and transfer station operators in September 2014. This survey was a modified version of a similar survey done in October and November 2012. The intent of the survey was to understand how much of an impact Wisconsin's electronics recycling law—and specifically its ban on disposing of many consumer electronics in landfills or incinerators—might be having on illegal disposal and dumping of electronics at landfill and transfer stations.

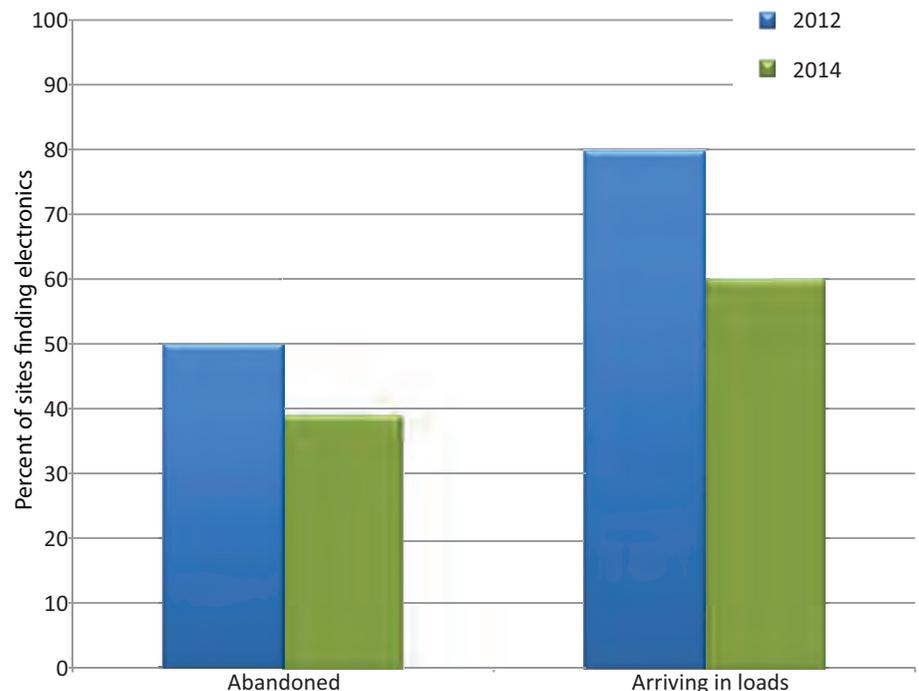
General background information

The DNR emailed the survey link to 104 landfill and transfer station operators. Forty-four operators responded to the 2014 survey, for a 42 percent response rate. This is a lower response rate than the 2012 survey, to which 57 percent of contacts responded. Just over half of the respondents (55 percent) answered for transfer stations, the remainder answered for landfills. (The survey asked them to choose which best represented their work duties). Respondents answered from all DNR regions in the state: 36 percent from West Central, 20 percent each from South Central and Northeast, and 11 percent each from Northern and Southeast regions.

All respondents were aware of the 2010 electronics disposal ban, all but three were aware of E-Cycle Wisconsin and all collected electronics on-site or knew where to take electronics for recycling (a few respondents also answered that they did not need to know where to take electronics as they did not handle that type of waste).

Most respondents had been in their positions long enough to have seen changes at their facilities as a result of the disposal ban on electronics and the network of electronics collection sites registered with the E-Cycle Wisconsin program. Twelve respondents had been in their positions fewer than five years and therefore did not have direct knowledge of how things had changed after the electronics recycling law took effect.

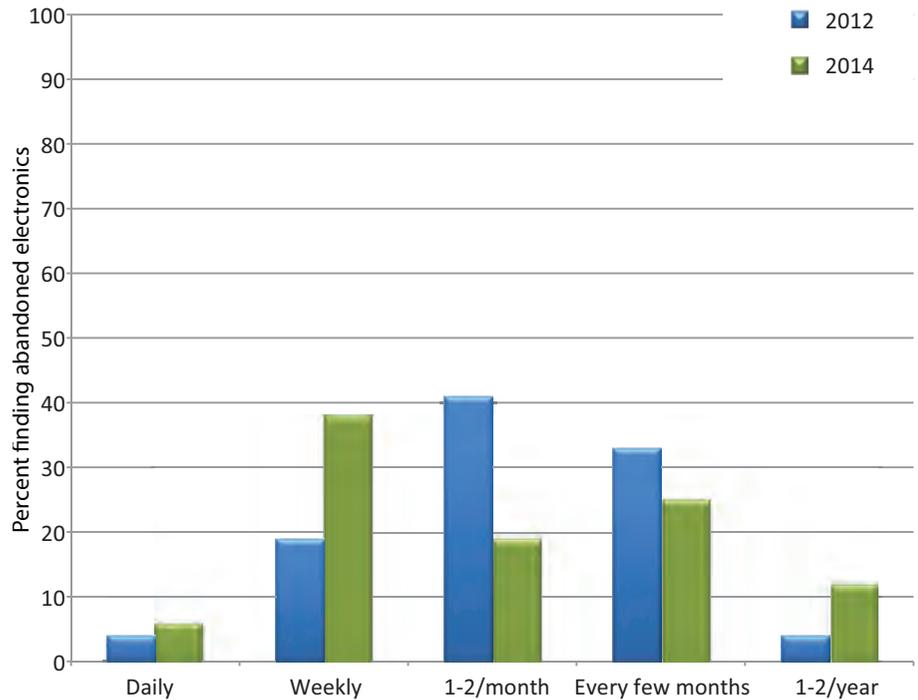
Figure 1: Percent of solid waste facilities finding electronics in 2012 and 2014



Abandoned electronics

Fewer responding operators reported seeing electronics abandoned (dumped) at their sites than in 2012, but the frequency of dumps increased. In 2014, 39 percent of respondents reported finding electronics dumped on their property, compared with 50 percent in 2012 (see Figure 1). About one-third of respondents felt electronics dumping at their facility had remained the same during their time there, one-third felt it had decreased and one-third were unsure of how dumping had changed. None of the respondents thought electronics dumping had increased over time.

Figure 2: Differences between 2012 and 2014 in frequency of abandoned electronics discovered at solid waste facilities



Of those that found electronics dumped at their sites, most (38 percent) had seen electronics dumped weekly, while another 25 percent had seen electronics dumped once every few months. One landfill reported having electronics dumped daily (see Figure 2).

Most electronics dumped at landfills and transfer stations were whole, intact devices (62 percent) or a mix of whole and dismantled devices (30 percent). Only one landfill had seen mostly broken devices. These are similar results to those reported in 2012. Old, tube-style TVs dominated the dumped electronics, followed by tube-style monitors, computer towers/CPU's, and flat panel TVs/monitors. This mix is almost identical, percentage-wise, to the mix of electronics reported by public lands managers in a 2014 DNR survey about electronics dumping on public lands.

Over half of responding landfill and transfer station operators felt the source of the abandoned materials was residential (56 percent) while the remainder thought they were seeing a mix of commercial and residential devices or were unsure. None of the respondents thought the source of dumped devices was obviously commercial.

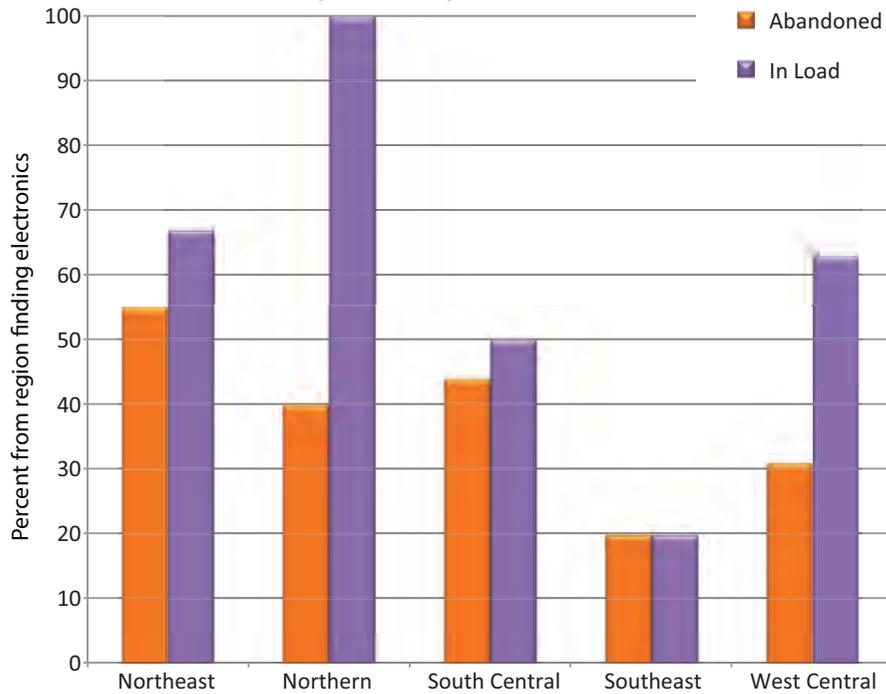
Nearly 70 percent of facilities with dumps had not taken any enforcement actions against those who had dumped at their sites, such as contacting local law enforcement or the DNR. Most took the devices to a recycler or added them to electronics they had already collected for recycling. Only one transfer station allowed the abandoned materials to be landfilled.

Of the 27 respondents who had not seen electronics abandoned at their sites, most believed it was because there was "convenient recycling nearby." These respondents also credited strong community outreach on recycling and their facilities' security measures with preventing illegal electronics dumping.

Electronics arriving in loads

As with abandoned electronics, the percent of sites finding electronics in loads arriving at their facilities decreased since 2012, but the frequency of discovery increased. Twenty-six sites (60 percent) found electronics

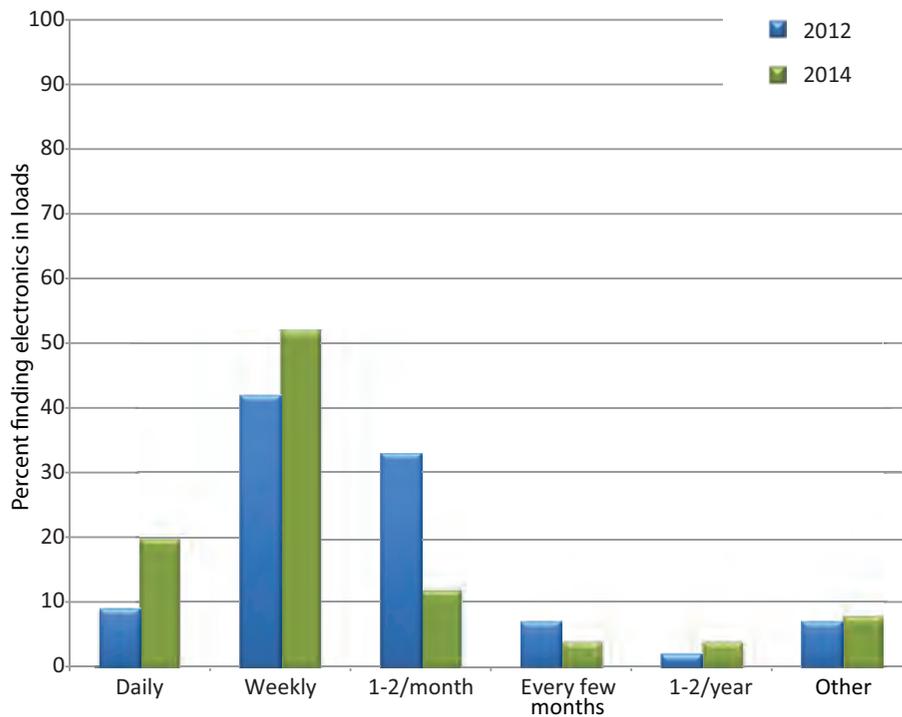
Figure 3: Regional differences in electronics arriving at solid waste facilities, using DNR regions



in loads in the past year, as compared with 80 percent of sites in 2012. Electronics were found in loads almost equally at landfills and transfer stations. All five responding sites in the northern part of the state had found electronics in loads (see Figure 3).

Most respondents felt there had been a decrease in electronics in loads over time. Only one transfer station believed that electronics in loads had increased over time. However, half of those finding electronics in loads were finding them weekly and 20 percent were finding them daily. In 2012, it was mostly weekly or one to two times a month (see Figure 4).

Figure 4: Differences between 2012 and 2014 in frequency of electronics found in loads at solid waste facilities



Most loads with electronics in them appeared to be from residential sources or a mix of residential and commercial materials. Sixty-eight percent of respondents finding electronics in loads had discovered tube-style monitors and 56 percent had found tube-style TVs. Most respondents had difficulty determining if these electronics had been deliberately hidden.

When electronics were found in loads, nearly 80 percent of operators notified the hauler or individual that their load contained banned items. Very few rejected the loads. Rather, many had the hauler or individual pull the electronics out of the load.

The materials were then taken to a recycler or added to the site's own collected electronics. Two landfills allowed the material to be landfilled. The law does not require facility operators to recover electronics from loads if worker safety is threatened.

Those sites that had not seen electronics in loads believe it was because they didn't accept loads from households and most commercial sites (for example, one accepts only medical waste), their haulers know not to accept electronics, or there is convenient electronics recycling nearby.

Reasons for illegal dumping and disposal

Nearly all facilities that responded to the survey were doing some form of outreach to the public about electronics recycling and the electronics disposal ban. More than 80 percent have staff explain to customers and haulers at the gate or scale that electronics are banned from disposal.

A handful of respondents used the comment boxes on the survey to argue that awareness of the ban is not the problem leading to dumping and electronics in loads. They felt cost and convenience of recycling options were the larger issue. “We ask every customer if they are bringing in any TVs, computers, electronic items and they still bold-face lie about it,” reported one northern landfill operator. “Don’t think it’s about information, seems to be more about cost of proper disposal,” wrote another northern region respondent. The dominance of tube-style TVs and monitors in abandoned electronics and loads supports this idea, as these are the materials for which recycling sites are most likely to charge. Additional support comes from site operators who had not seen dumped electronics or electronics in loads at their sites and believe that the reason is convenient nearby recycling options.

Conclusions

There is no way of knowing for certain why people dump electronics or put them in the trash. It is certain that limited quantities of electronics were still arriving at landfills and transfer stations four years after state law banned them from disposal. While the number of sites finding electronics has decreased, as has the respondents’ perceptions of the amount of electronics arriving at landfills and transfer stations, the frequency of dumping and in-load discoveries appears to have increased.

These trends, however, must be viewed through a larger lens. If low cost or free and convenient recycling options are truly the key (or even a key) to the decrease in electronics arriving at solid waste facilities, the bigger picture of electronics recycling in Wisconsin suggests a challenge. Structural changes in the electronics recycling markets are leading to fewer low cost recycling collection points, particularly in the northern part of the state. Fewer recycling sites may lead to a reversal of the positive trends documented in this survey.



PUB WA-1776 2015
Bureau of Waste and Materials Management
Wisconsin Department of Natural Resources
PO Box 7921, Madison, WI 53707-7921
DNRWAE-cycling@wisconsin.gov, (608)266-2111

The Wisconsin Department of Natural Resources provides equal opportunity in its employment, programs, services and functions under an Affirmative Action Plan. If you have any questions, please write to Equal Opportunity Office, Department of the Interior, Washington, D.C. 20240. This publication is available in alternative format (large print, Braille, audio tape, etc.) upon request. Please call (608) 266-2111 for more information.