

# Paint management methods and costs for Wisconsin household hazardous waste collection programs

*Results of DNR/DATCP survey, conducted summer 2015*

## Executive summary

Wisconsin residents generate a large amount of unused paint each year. Residents need access to low-cost and convenient outlets to properly dispose of the paint, particularly oil-based paint (classified as household hazardous waste, or HHW), so that these materials are managed properly and do not pollute soil, air or water. State law prohibits municipal solid waste landfills from accepting waste with free-flowing liquids unless they have special approval. HHW collection programs, the most common option available to residents, tend to be expensive to operate, and many do not officially accept latex paint.

To learn more about the current paint collection infrastructure in Wisconsin, the Department of Natural Resources (DNR) conducted an online survey in summer 2015 of 34 HHW collection programs that received Clean Sweep grants through the state Department of Agriculture, Trade and Consumer Protection (DATCP) between 2012 and 2014. Thirty programs responded to the survey. This is a subset of all HHW collection programs in the state.

More than half of the responding programs operated their HHW collection through special one-day events, and a little more than one-third had permanent collection sites. Others operated seasonally (permanent site open for part of the year) or through a combination of methods. The programs were funded through DATCP grants, county or local funding, user fees, and—in a few cases—business sponsors or other donations. The primary customers of the HHW programs were residents, but about half also accepted paint from small businesses or farms.

Between 2012 and 2014, most areas of the state were served by HHW programs that collected oil-based paint (see map in Appendix A). All but one of the 30 responding programs officially accepted oil-based paint, and all 30 received it. Not all were able to report data on amount collected and costs, but the survey showed a minimum of 2.6 million pounds (about 262,000 gallons) of oil-based paint were collected through HHW programs during this three-year period, at a cost of more than \$614,000. Nearly all of the collected oil-based paint was managed by contractors that use it for fuel blending and incineration. A handful also sent some for reuse through Habitat ReStores or paint exchanges.

Discarded latex paint is not classified as a hazardous waste, but it can still cause problems as a free liquid if put in the trash. Because it is not hazardous, however, many HHW programs do not accept it, and so access to latex paint collection through these programs is much more limited around the state (see map in Appendix B). The 13 programs that did report collection data took in 3.4 million pounds of latex paint (about 310,000 gallons) between 2012 and 2013 at a cost of just under \$639,000. A few programs sent all their latex paint for recycling, but most others used a combination of recycling or reuse and landfilling (after drying out the paint).



## Background

The most common types of excess paint households generate are oil-based paint, considered a household hazardous waste, and latex paint, which is not a hazardous waste. The survey focused on these two types of paint (also known as architectural paint).

Current paint disposal options vary greatly throughout Wisconsin. Oil-based paints can generally be managed through household hazardous waste programs (often called “Clean Sweeps”), but many areas of the state have only periodic Clean Sweep events, rather than a permanent collection site. Oil paint can be recycled through fuel blending or used as a fuel in hazardous waste incineration. It should be noted that sales of oil-based paints have been dropping steadily for 30 years and today account for only a small fraction of architectural paint sales, so much of what comes into collection programs may be paint that has been stored for some time.

While there are reuse and recycling options for latex paint, these can be expensive, and many household hazardous waste sites prefer not to accept latex paint since it is not a hazardous waste. Often, residents are instructed to dry out latex paint and dispose of it in their trash. However, paint that has not been dried can be a problem for local communities and haulers. Landfills and haulers complain that paint treated in this manner often is not completely dried. Even if properly dried, paint that has been dried and landfilled is a lost resource.

States have different approaches to paint recovery. Several states have implemented industry-run collection programs for architectural paint that reduce local government costs and ensure used paint is reused or recycled to the greatest extent possible, conserving resources. There has been some interest from the industry in implementing a similar program in Wisconsin. A first step toward that would be having a better understanding of the existing paint collection infrastructure.

For many years, the DNR has heard anecdotal information suggesting that much of the material brought to HHW collection sites is paint. Many residents continue to bring in latex paint, despite efforts by some site operators to dissuade them. However, the DNR, DATCP and other stakeholders have had little hard data on paint management through HHW programs.

## Survey methodology

To acquire more data on how much paint is being collected through HHW programs and how much money is being spent to manage it, the DNR and DATCP collaborated on a summer 2015 survey to the 34 entities that received a DATCP Clean Sweep grant during the time period 2012-2014. The survey was administered online and sent via email to the program contacts, with follow-up emails and phone calls over a period of several weeks. Thirty responses were received, for a response rate of 88 percent.

## Basic collection program information

To help gauge the type of access residents have to paint collection programs, the survey asked about how the programs operate. More than half of the 30 programs that responded operated as events held at special locations and days during the year. About one-third operated permanent sites, meaning they were open at least one day per week throughout the year. These tended to be located in larger and more urbanized communities. Only a few of the 30 programs operated seasonally (i.e., permanent sites that were closed during several months of the year). Two used a combination of events and either permanent or seasonal collection sites. Figure 1 shows the site type breakdown for 2012 to 2014.

With event-based programs, users must be willing and able to hold on to waste for perhaps several months until a collection is offered. This may not be possible in some cases, such as clean-out after a home sale. Permanent sites offer greater convenience in terms of availability, but users may have to travel greater distances.

In addition to Clean Sweep grants, half of the responding programs used some form of local taxes to help fund their collection efforts, and just over one-third charged a user fee. A handful reported using business sponsors or other

donations to help cover the cost. Some used money from general solid waste or recycling budgets (including revenue from recycling other materials) or cost-sharing among municipalities within a program service area. See Appendix C for respondent comments on “other” funding sources.

Most of the programs that responded were county-level programs that serve residents within their county—sometimes in partnership with municipalities. In some cases, multiple counties shared a program. There were also a handful of programs run by utility districts (such as the Milwaukee Metropolitan Sewerage District), individual municipalities or tribal governments. Three-quarters of the responding programs said they served a mix of urban, suburban and rural areas. A handful served primarily urban or primarily rural areas.

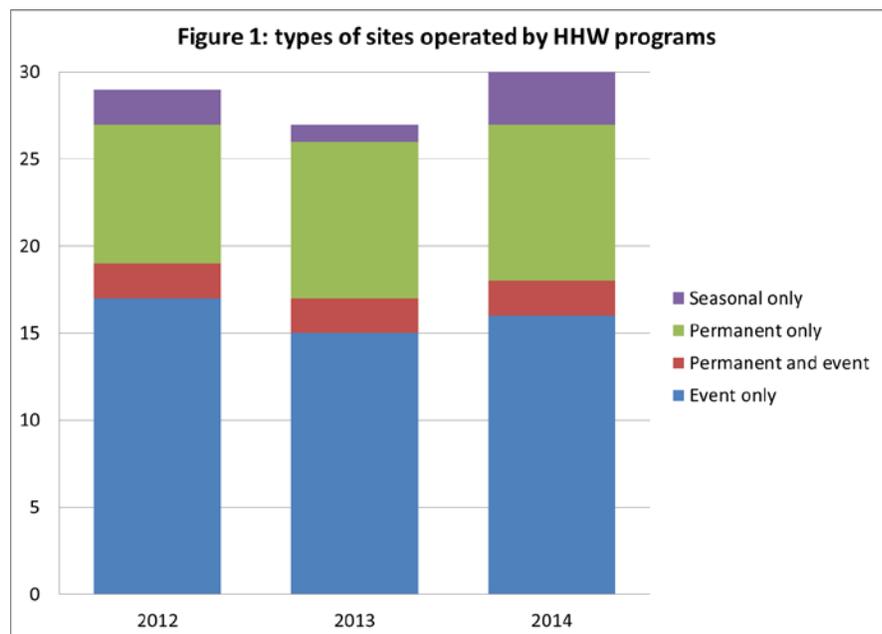
### Paint information and collection through HHW programs

All but one of the collection programs provided information to residents and businesses in their service areas about what to do with unused paint. Methods used included brochures or fliers, newsletter articles and websites. Messages they communicated included:

- how to dry out, and dispose of, latex paint
- how to buy the proper amount of paint
- how to re-use/donate paint
- different methods of handling latex vs. oil-based paint

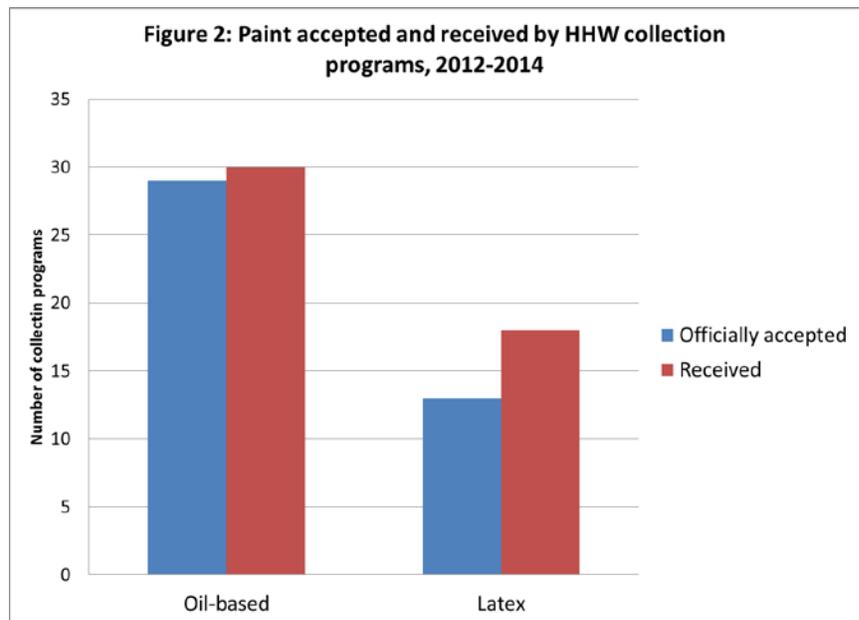
See Appendix C for the full text of respondents’ comments on educational materials provided.

All 30 responding programs reported receiving paint between 2012 and 2014. All but one officially accepted oil-based paint (and all 30 received it). About half of the programs officially accepted latex paint during this time period, and a few that did not officially accept latex received it (see Figure 2). One program received both types of paint even though it did not officially accept any paint. One site did not accept latex for recycling/disposal, but did sometimes take the latex for a paint exchange program.



## Access to paint collection programs

As mentioned above, all programs that responded to the survey received oil-based paint, which translated into a fairly consistent level of access statewide (see map in Appendix A). The exceptions were a few counties in the southwest, northwest, northeast and central/southeast parts of the state. Note, however, that the survey did not ask for specific collection site locations, so even though a county may have service, it may not be convenient to all residents.



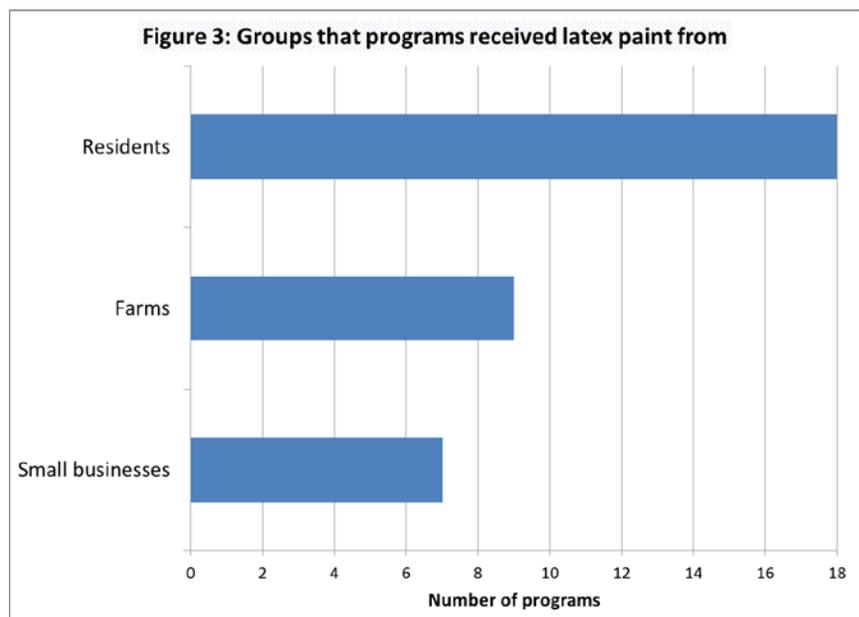
The survey results show there was much less access to collection sites for latex paint, with collection programs in only about half of Wisconsin's counties (see map in Appendix B). The northwest, southeast, central and southern parts of the state are particularly underserved. Again, the survey did not ask for specific collection site locations.

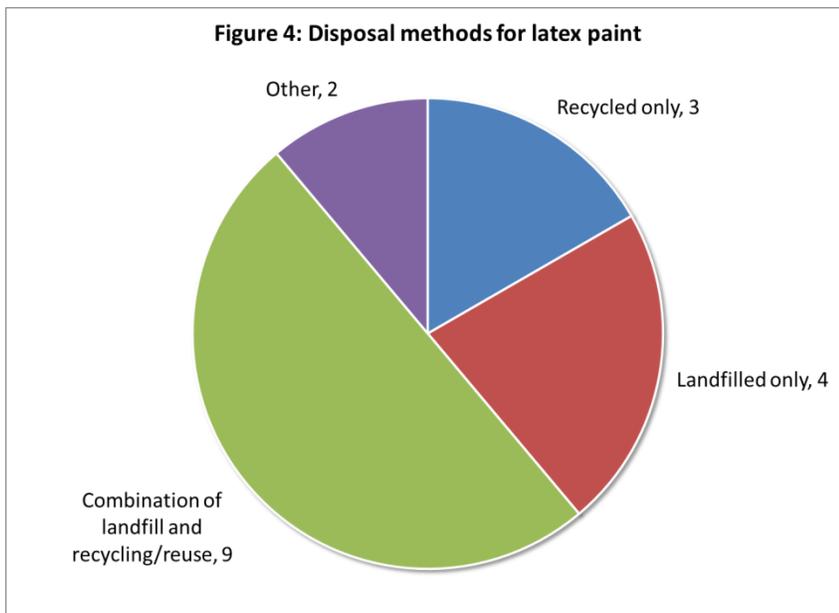
Only about one-third of the respondents were aware of other facilities that collected paint in their areas.

## Latex paint collection

All 18 programs that received latex paint reported receiving it from residents. Half also received paint from farms, and slightly more than one-third received it from small businesses (see Figure 3).

Recycling options for latex paint remain somewhat limited in Wisconsin, and this is reflected in what programs were able to do with latex paint they received. Most of the 18 programs that reported receiving latex paint managed it in multiple ways, most often a combination of recycling/reuse and landfilling (see Figure 4). Three-quarters of the programs reported that at least some latex paint was sent for landfill disposal. Several reported operating paint exchanges on-site where residents could bring and take latex paint for reuse. Three of the programs sent latex paint for recycling only.





### Latex paint quantity and cost data

Of the 30 responding programs, 12 did not receive latex paint. Of the 18 that did, only 13 were able to report volume/cost data. Those that could not were generally unable to do so because of the way the materials were handled or because of the way the program was billed by the waste handler. Generally, of the 13 respondents that were able to report data, seven reported that they charged a fee to accept latex paint, and five of these reported cost data. Some of the numbers were estimates.

Table 1 summarizes the pounds of latex paint received and programs' costs to manage it. Because of this limited reporting, the figures in the table below represent minimum estimates of latex paint collection and handling costs in Wisconsin between 2012 and 2014.

**Table 1: Amount of latex paint received and management costs**

Year	Pounds received*	Cost to handle/dispose	Amount covered by user fees
2012	1,232,256	\$257,662	\$19,474 (8%)
2013	1,007,734	\$206,638	\$19,063 (9%)
2014	1,139,242	\$174,565	\$48,783 (28%)
<b>Total</b>	<b>3,379,232</b>	<b>\$638,865</b>	<b>\$87,320</b>

\* When it was necessary to convert gallons to pounds, a conversion factor of 10.9 pounds/gallon was used. For 2013 and 2014, two respondents reported quantity but no cost data. For all three years, one program was able to report cost data but not volume that could be converted to pounds.

In 2014, the collectors paid between \$0.06/pound and \$1.65/pound to dispose of the latex paint. The average over all three years was \$0.39/pound. Due to economies of scale it would be expected that higher volume collectors would pay less but this was not found to be the case. Per unit disposal costs were generally consistent for a given collector from year to year, although in a couple of instances the per-unit price doubled or tripled from year to year. There was a sharp increase in the percentage of costs covered by user fees in 2014, though this may be due to lack of data from earlier years.

### Oil-based paint collection

As mentioned above, all 30 responding programs reported receiving oil-based paint. Twenty-nine provided more details on their oil paint collection, and all of these accepted paint from residents. About half also took paint from farms and small businesses (see Figure 5).

As shown in Figure 6, most of the programs sent oil-based paint they collected to a contractor that used it in fuel-blending or incineration (several respondents specifically mentioned Veolia, which holds the state hazardous waste contract). Five of the programs reported some reuse of oil-based paint, most in combination with sending it to a contractor. One program reported that some of the paint was landfilled, but this might be the result of confusion over what the contractor did with the paint.

Several of the 28 programs that were able to provide data were unsure of what their contractors did with the paint. Based on documents from PaintCare, which manages paint stewardship programs in several states, there is currently no genuine recycling option (where paint is recycled into new paint) for oil-based paint, and contractors like Veolia use it for fuel blending or as a fuel source for hazardous waste incineration. This uncertainty about how collected paint is managed indicates there may be opportunities for more education of HHW program managers about what happens to materials they collect after those materials leave collection sites.

### Oil-based paint quantity and cost data

The data that were reported are summarized below. Of the 30 respondents, all programs received oil-based paint. Of those 30, 25 were able to report volume data and 19 were able to report cost data for 2014. Only 4 programs charged a user fee and two of those were able report the amount of costs recovered from those fees. As with latex paint, the collectors who could not report volumes or costs were generally unable to do so because of the way the materials were handled or because of the way they were billed by the waste handler.

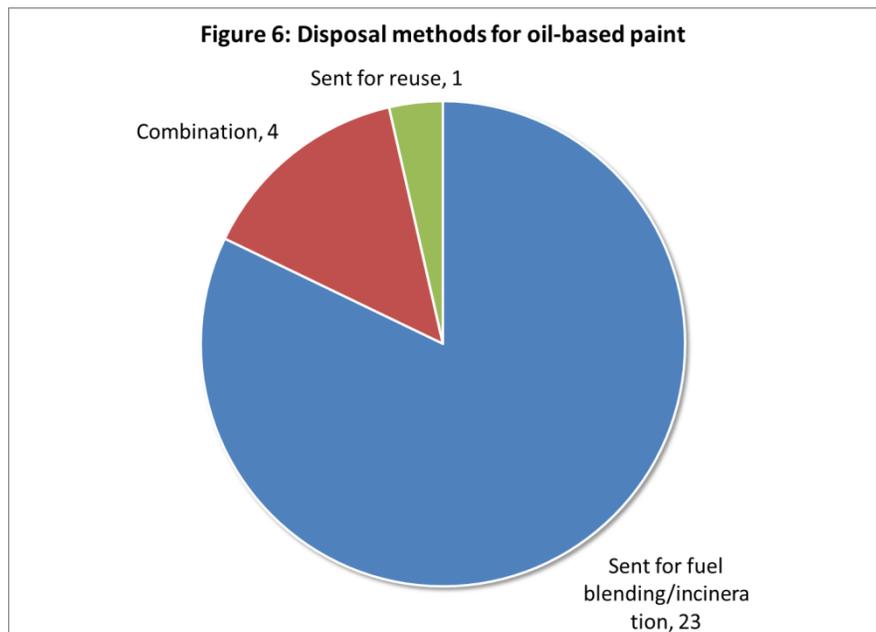
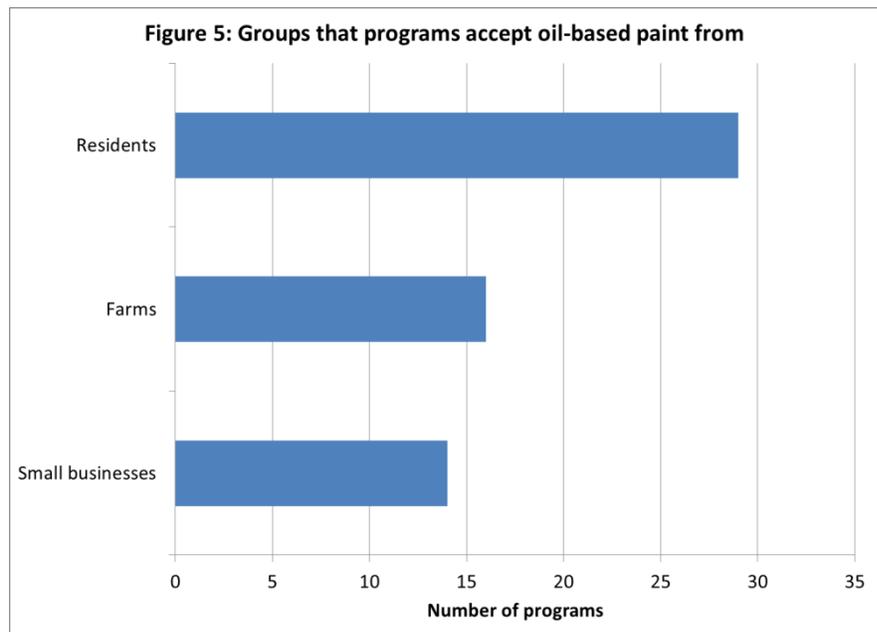


Table 2 summarizes the pounds of oil-based paint received and programs' costs to manage it. Because of this limited reporting, the figures in the table below represent minimum estimates of oil-based paint collection and handling costs in Wisconsin between 2012 and 2014.

**Table 2: Amount of oil-based paint received and management costs**

Year	Pounds received*	Cost to handle/dispose	Amount covered by user fees
2012	884,411	\$186,573	\$9,157 (5%)
2013	830,601	\$184,377	\$11,550 (6%)
2014	905,759	\$243,695	\$11,194 (5%)
<b>Total</b>	<b>2,620,771</b>	<b>\$614,645</b>	<b>\$31,901</b>

\*When it was necessary to convert gallons to pounds, a conversion factor of 10 pounds/gallon was used. For 2013 and 2014, six respondents reported quantity but no cost data; even did this for 2012.

In 2014, collectors paid between \$0.19 and \$1.96/pound to dispose of the oil based paint. The average over all three years was \$0.43/pound. The per-unit costs were lowest for the two largest collectors, although there was no clear-cut economy of scale beyond that. Per unit disposal costs were generally consistent for a given collector from year to year, although some collectors had more variability. As with latex paint, there was too much variability in the data to correlate remoteness of location with lower per unit cost.

## Conclusions

This survey gave us the best information available at this time on the amounts of paint being handled by HHW programs and the costs they incur. It is far from a complete picture, however, because several of the programs surveys did not have good data, and there are at least some paint collecting programs operating outside of the HHW network. For example, in a 2013 DNR survey of local government recycling programs, 70 responded that they collected unwanted paint. Some of these are likely part of the HHW programs included in the 2015 survey, but others likely were collecting outside of the Clean Sweep events and sites funded by DATCP grants.

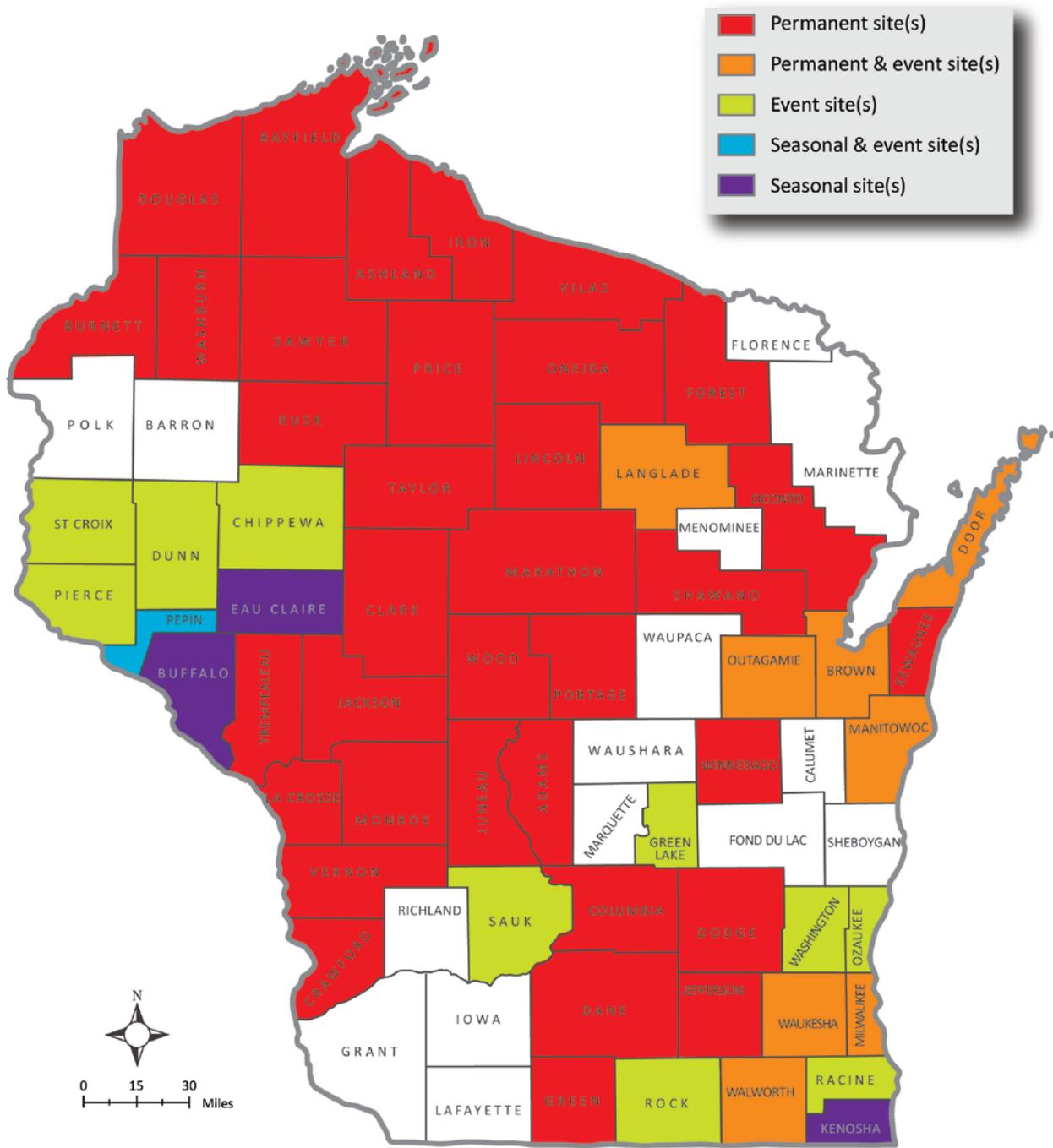
Based on the 2015 survey data, it appears there are gaps in Wisconsin residents' access to proper oil paint management, and relatively large gaps in access to latex paint recycling and reuse programs. Management costs also vary widely among existing programs. The results suggest Wisconsin residents might benefit from a more convenient and cost-effective paint recovery program that would offer a more consistent level of services.



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# Appendix A: Wisconsin counties served by HHW programs accepting oil-based paint, 2014



\* Based on a 2015 DNR survey of DATCP Clean Sweep grant recipients Created: October 19, 2015



## **Appendix C: “Other” response text and responses to open-ended questions**

### **How did you fund your collection program between 2012 and 2014? “Other” responses:**

- Donations from cities and towns in the county
- A portion of landfill tipping fees are allocated for this program
- Recycling revenue
- Landfill tipping fees
- Donations
- Tribal funds
- Cost share with municipalities
- County budget
- Donations and a landfill host fee
- Program revenues
- Solid Waste Department funds
- Waste management for landfill fees

### **Comments on educational materials provided**

- Website, HHW brochures, information to callers and those who bring paint to the HHW collections.
- Brochure on how to dispose of old paint to recycle the can.
- We include information in the Clean Sweep Brochure on how to dispose of latex paint.
- Residents are educating on how to solidify latex paint for disposal with regular municipal solid waste.
- We include information in an educational flyer of how to dispose of latex paint.
- Pamphlet, packets of paint dry.
- We provided a handout on the proper disposal of latex paint and a sample of the paint hardener.
- Education on disposal of latex paint is sent out occasionally via newsletters, and handouts.
- Only buy enough for the project. Donate to Habitat for Humanity, donate to artists or studios, find swing sets, sheds, garages, etc. in the community that may need painting.
- Flyer for latex disposal, format derived from UW-Extension.
- Website, handouts, annual mailing to municipal clerks.
- For latex paint which we do not take at Clean Sweep. All Clean Sweep outreach included information for disposal and where to recycle it. It was in all Clean Sweep I and E - brochures, event registration, press releases, main and partner websites, radio.
- Encourage residents to dry out latex paint only, and/or reuse latex and oil-based paint, and/or deliver unwanted latex and oil-based paint to annual collection events.
- Information on how to get rid of latex paint.
- We recommend they give away still-good paint (i.e.: craigs list or FreeCycle); we remind people to only buy what they need.
- Explain how to properly package and transport to collection site.
- Newsletter articles, info on recycling website, verbally over phone.
- Latex paint: reduction, donation, dry & dispose. Other paints: hazardous waste collection.

- Newspaper, Facebook ads about safely drying and disposing of latex paint, and info on oil based paints are how.
- Newspaper, Facebook ads about safely drying and disposing of latex paint, and info on oil based paints are how.
- If it was latex paint we didn't accept it and told them how to dry it out. We always accepted oil based paint.
- Provide handouts on process for drying paint as well as informing them of options in person

### **Comments on what happened to latex paint that was collected**

- Some was reused by residents.
- It's sent to cement kiln for incineration.
- On-site product exchange.
- Taken by our vendor Tradebe
- Contractor required to manage since not accepted under contract
- Veolia processes it, believe it is landfilled
- we have reuse centers at two permanent sites where usable paint is placed and available for the taking
- We did not accept the latex paint from the residents.
- Sent to an environmental services company to recycle/dispose.

### **Other comments from survey respondents**

- Oil-based paint is half the processed volume at every Clean Sweep we've had since 2011. Promoting latex paint disposal and recycling with Clean Sweep has made a big difference; it's the top thing people know about in event surveys and we don't get many calls on it anymore.
- Better information should be available as to the actual amount needed to paint an area, to prevent over purchasing of the product.
- More convenient retail options that are cost-effective for management of this non-hazardous material are necessary. Also, what to do with left over paint it is the most asked question from residents.
- TJM for latex worked well for us last year.
- We are looking for locations that will accept and/or purchase "repurposed" paint! A group collects latex paint at Clean Sweeps. They mix similar colors together, give that color a lot number, and put it in cans for distribution. The Baraboo Habitat ReStore is going to take 100 cans and try to sell them at ~\$5/can.
- The first Clean Sweep we collection latex paint for the first time was April 11th. TJM Innovations said they collected 2,164 gallon of latex paint. The down side was that TJM should have had more staff to unload. Veolia did all the unload which will be a cost to us. At a normal Clean Sweep we generate about 1.5 ton of trash that go to the landfill. We collected 3.4 tons of trash because resident brought dry out latex paint and empty can. We were not set up to recycle the cans. We will need to do more education on what should be brought to Clean Sweep and have a place to the empty cans so they can be recycled.
- While management all paints is an issue, latex paint is the one we have the most problems with as it is not considered hazardous waste.
- would like to see manufacturers take back paint
- Education is important.