

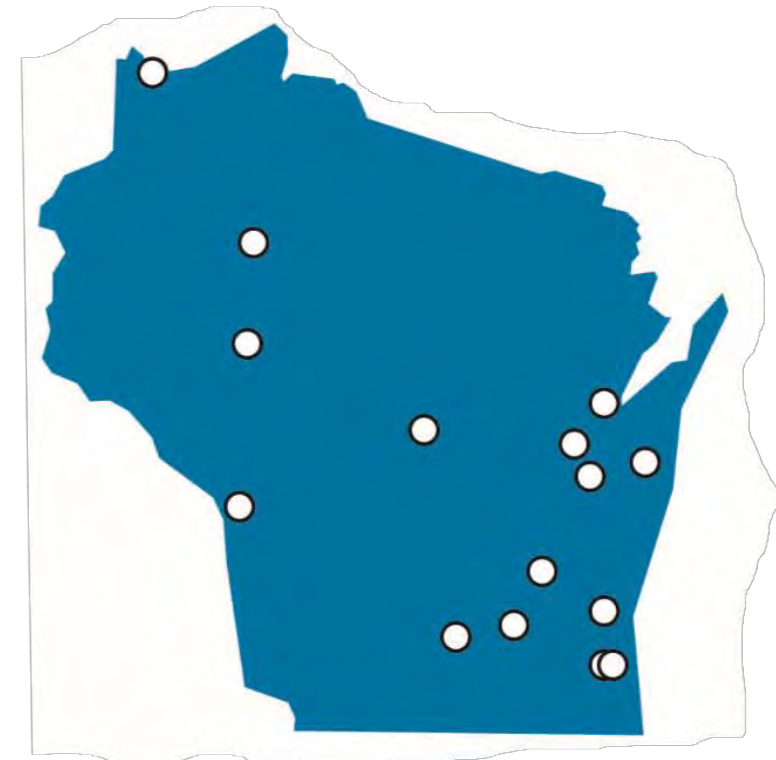
Waste Characterization Study Overview

Council on Recycling Meeting
September 23, 2021

Stats:

- Contracted with SCS Engineers
- Sept.-Nov. '20 and March-April '21
- 15 host facilities (14 landfills and a transfer)
- Host landfills accept 72% of the state's landfilled MSW
- Focus on MSW and C&D waste

- GFL Hickory Meadows LF
- Brown County Transfer Station
- Outagamie County LF
- WM Ridgeview LF
- City of Superior Moccasin Mike LF
- WM Timberline Trail LF
- Dane County LF Site No.2 (Rodefeld)
- GFL Glacier Ridge LF
- WM Deer Track Park LF
- WM Metro RDF
- GFL Emerald Park LF
- WM Orchard Ridge LF
- Cranberry Creek LF
- GFL Seven Mike Creek LF
- La Crosse County LF



Process:

- Hand sorted and weighed 398 samples MSW from residential, commercial and industrial/institutional sectors
- Visually inspected 659 samples of C&D waste
- Process similar to 2003 and 2009 studies though categories did change
- Waste was sorted into 85 categories
- Data statewide, by DNR region, and by sector
- Study cost \$335,000

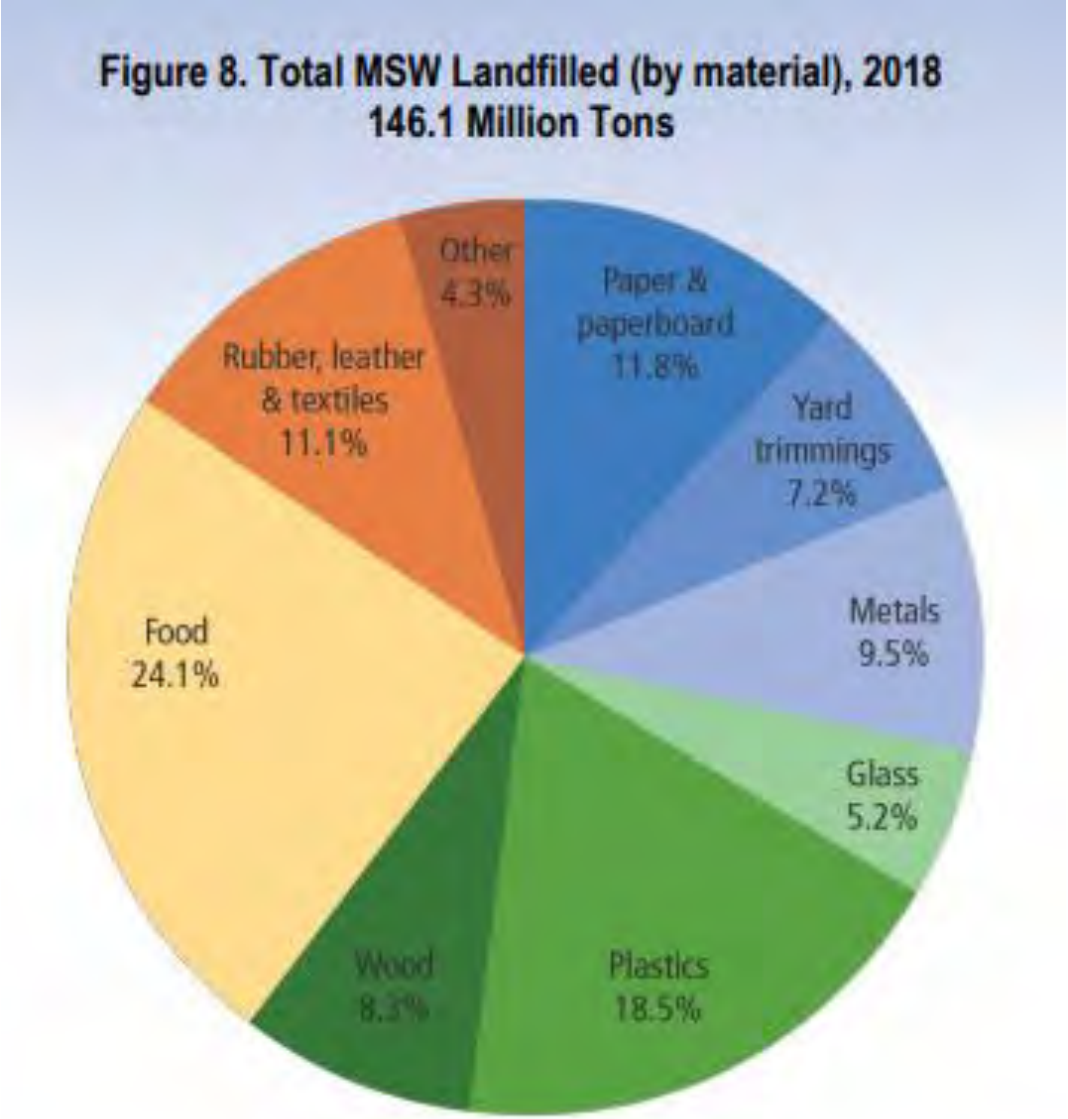
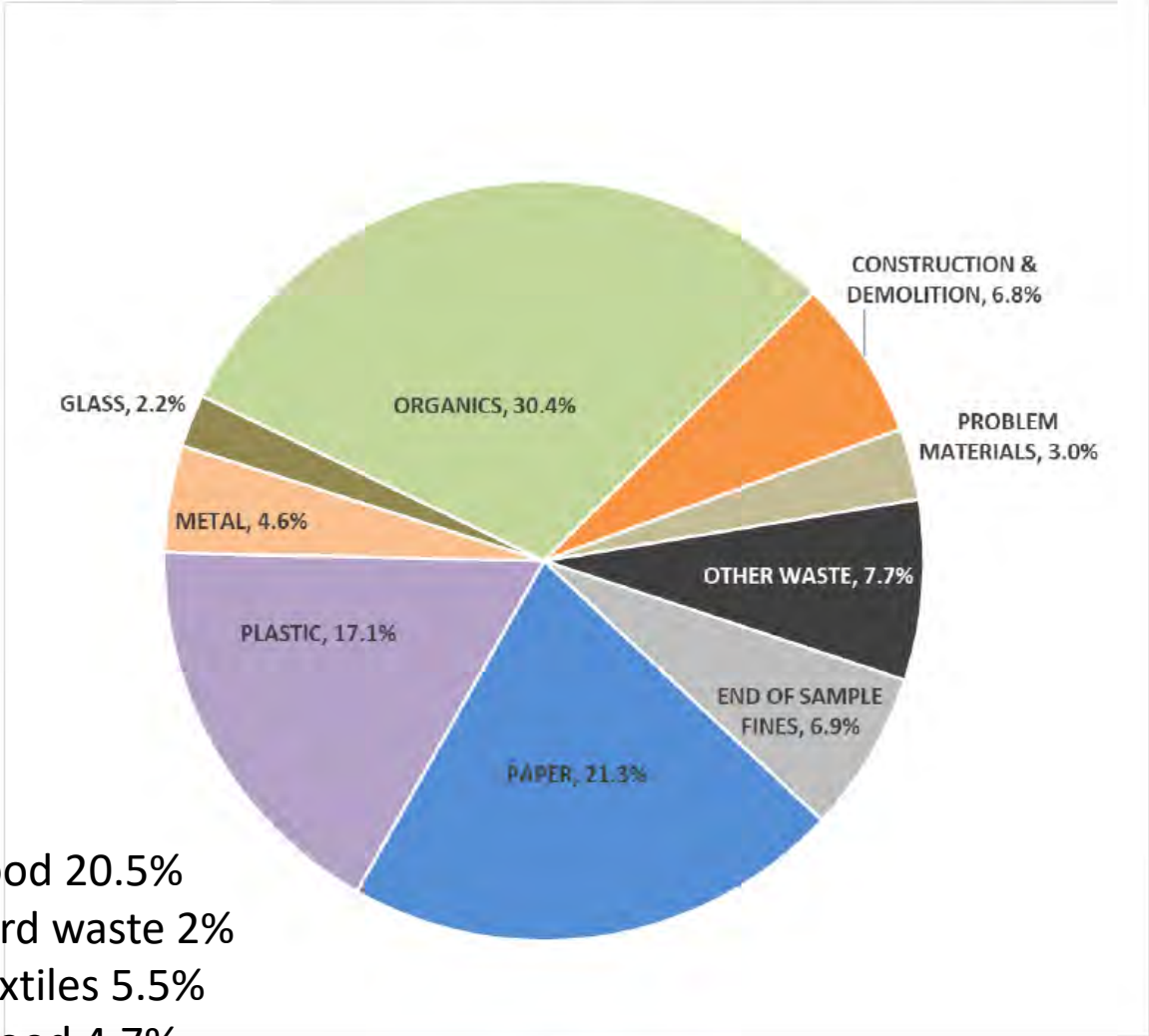


Interpreting results

- Data by % composition and extrapolated to weight using the category 1 and category 25 landfill tonnage reports
- 2009 landfill tonnages (used for extrapolation): 3,973,345 tons
- 2020 landfill tons (used for extrapolation): 4,350,100 tons
- Data was likely impacted by the pandemic.
- Results are a picture of what was landfilled, not a picture of the waste stream
- For a comprehensive picture we have compost data, BU data and processing data. Recycling data available but is specific to facilities accepting multi materials or contracting with an RU.

Comparison to National Numbers

Exhibit 1. Overall Category 1 MSW Statewide Waste Composition



Food 20.5%
Yard waste 2%
Textiles 5.5%
Wood 4.7%

Results by type:

- The five largest components of the MSW landfill waste stream are:
 - 14.5% “wasted food” comprised of food items that are traditionally edible,
 - 7.2% “other flexible films” including flexible plastics like chip bags and granola bar wrappers,
 - 6% “food scraps” which are not traditionally edible food waste such as peels,
 - 5.5% “textiles” or cloth materials, and
 - 5.3% “compostable paper” which is paper that is not able to be recycled such as tissues or paper plates

Top 5 20/21 Categories Across Studies

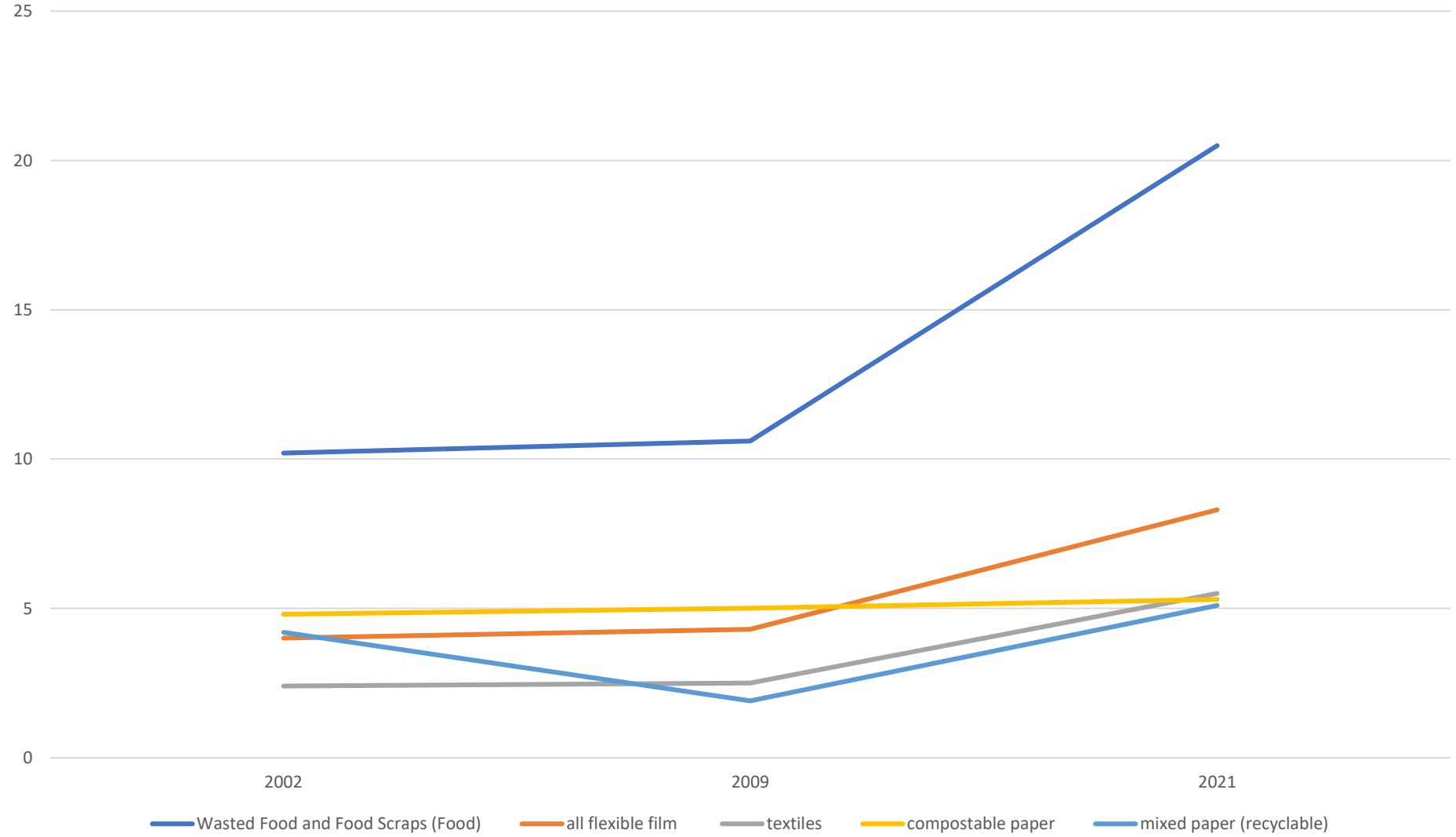


Table 3. Comparison of the Top 10 Category 25 CDD Material Components from 2009 and 2020-2021

2020-2021 Study Results		2009 Study Results ¹	
Material Component	Percent Composition	Material Component	Percent Composition
Other C&D (any other material used in home construction, not including wood, rock, brick, concrete, gypsum wallboard, shingles, PVC or ceramics/porcelain fixtures)	25.0%	Roofing Shingles (asphalt shingles tarpaper; also tarpaper from built-up roofing)	29.5%
Untreated Clean Dimensional Lumber (unpainted, untreated new or demolition dimensional lumber such as 2x4s, 2x6s, etc.; may contain nails or other trace contaminants)	11.5%	Rock, Concrete, Bricks (rock gravel, Portland cement mixtures (set or unset), fire-clay bricks, asphalt pavement)	13.2%
Roofing Shingles (asphalt shingles tarpaper; also tarpaper from built-up roofing)	10.0%	Painted/Stained Wood (wood that has had an external coating applied, such as paint or varnish in more than small amounts)	10.1%
Unpainted Engineered Wood (unpainted new or demolition scrap from sheet goods such as plywood, particle board, wafer board, oriented strand board and other residual materials used for sheathing and related construction uses)	8.7%	Clean Dimensional Lumber (unpainted, untreated new or demolition dimensional lumber such as 2x4s, 2x6s, etc.; may contain nails or other trace contaminants)	8.8%
Gypsum Wallboard - Demo (used gypsum drywall typically with paint, wallpaper or other finish coating)	6.5%	Other C & D (any other material used in home construction, not including wood, rock, brick, concrete, gypsum wallboard, shingles, PVC or ceramics/porcelain fixtures)	5.8%

Recyclables

- Estimating
 - 19% of landfilled materials are recyclable through curbside programs
 - 34% recyclable through curbside and drop-off
 - 64% recyclable in some area in WI
- Tons that were not separated that could join the 754,000 tons recycled through RU programs
- 19% of recyclables with curbside infrastructure
 - Valued at \$87 million
 - WARM modeling estimates the energy savings of recycling these materials would power 219,047 home per year

Changes from 2009 to 2020

MSW:

- Food waste is 193% of the percent it was in the 2009 study
- Recyclable waste increased. In 2020 mixed paper #6 and uncoated cardboard #10 (by %)
- TVs reduced by 85%

C&D:

- Shingles decreased from 30% to 10% of the construction and demolition waste stream



More info: DNR.wi.gov search “waste sort”

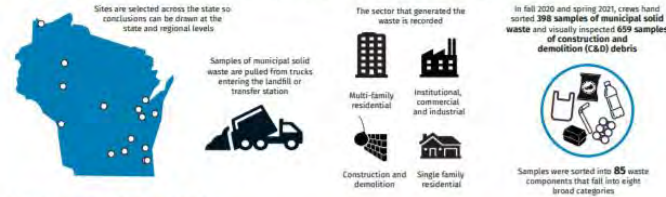
<https://dnr.wisconsin.gov/topic/Recycling/studies.html>

What is ending up in Wisconsin landfills?

The DNR commissions statewide waste characterization studies to better understand what Wisconsinites are throwing in the trash. The most recent study occurred in 2020-2021. Prior studies were completed in 2002 and 2009. The results of these studies help guide waste reduction and diversion efforts at the state, regional and local level.

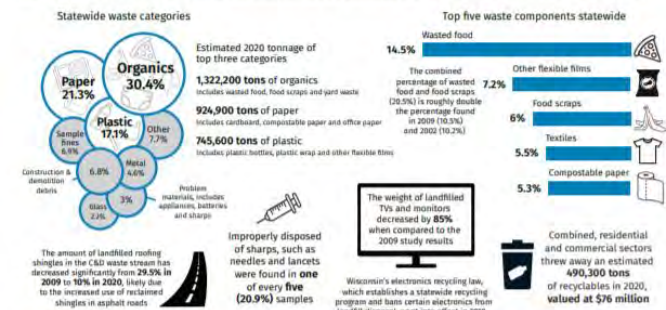
How we study waste

Waste characterization studies are snapshots in time that reveal the composition and amount of landfilled materials



What was discovered

Analysis of the 2020-2021 data shows us that Wisconsinites are dedicated to waste reduction, but there is more we can do



Reducing landfilled waste

Reducing what we throw away supports Wisconsin's economy, helps the environment and saves valuable landfill space

