Objectives: (1) Establish baseline (2) Assess current status and (3) Identify opportunities to increase recycling.

Scope: All post-consumer carpet that was generated and recycled, or discarded into Illinois landfills in 2014.
Market Research Methodology
Primary Market Research


- **Survey Monkey** Online Survey, June 1-30, 2015
  - Confidential, Aggregated and Summarized Responses

- **One-on-One** Interviews

- **Facility Visits**
  - CLEAR Chicago and CLEAR St. Louis
  - Kruse Recycling Services
  - Phoenix Plastic Recycling
Secondary Market Research

- 2014 CARE Annual Report
- SWALCO Web site
Estimating Post-Consumer Carpet Generation in 2014
Sales and Post Consumer Carpet Generation Estimates

- *Market Insights LLC* supplied Carpet Sales data for Illinois, for the years **2007-2014**
  - Analyzed Sales Trends Using Historical Data
Sales of Carpet in Illinois, 2007-2014

- 2014 Illinois Carpet Sales were ~187 Million lbs.
- The peak of sales, for the period studied, was in 2007, and was ~267 Million lbs.
- After sales decline of >30% from 2007-2009, sales have been relatively steady since 2010.
- 2014 Illinois Residential Carpet Sales are about 68% of total; Commercial is about 32%

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October 7, 2015

2015 Illinois Carpet Recycling Survey
Illinois Post Consumer Carpet Generation, 2014

Post Consumer Carpet Generation: The amount of Post Consumer Carpet that is Available for Recycling after it reaches the end of its useful life

Post Consumer Carpet Generation = Sales + Demolition + Deselection – New Construction = 175 Million lbs.
Error range is estimated at +/- 10% (158-192 Million lbs.)
Factors Influencing Per Capita Generation:
1. Urbanization
2. Median Income
3. Climate

12015 Illinois Commodity/Waste Characterization Study Update, IRA/CDM Smith, March 2015
2015 Survey Results

2014 Illinois Carpet Recycling And Disposal
Overview of Post-Consumer Carpet (PCC) Recycling Value Chain

Examples:
- Retailer, Installer, C&D, DC Foam, Kruse
- Kruse Recycling, DC Foam
- CLEAR, Wellman, Phoenix, Shearers/Shredders
- Wellman, Mills, Extruders
Survey Steps

- Identify Value Chain Members
- Prepare Survey Monkey Tool
- Recruit and Qualify Respondents
- Collect and Verify Responses
- Analyze Data
71% of respondents were from Chicago metro region

29% of respondents were from out of state
Market Segmentation for PCC Collection

Post Consumer Carpet Collection by Market Segment

- Residential: 80%
- Commercial: 20%
# 2014 Illinois PCC Generation, Collection, and Recycling Rates

<table>
<thead>
<tr>
<th></th>
<th>2015 Illinois Carpet Recovery Survey</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>%</td>
</tr>
<tr>
<td>Total Generation</td>
<td>175</td>
<td>+/- 10%</td>
</tr>
<tr>
<td>Gross Collections</td>
<td>8.0</td>
<td></td>
</tr>
<tr>
<td>Reused</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td>Recycled Output</td>
<td>3.0</td>
<td></td>
</tr>
<tr>
<td>Gross Collection Rate</td>
<td>5%</td>
<td>4.5-5.5%</td>
</tr>
<tr>
<td>Recycle Output Rate</td>
<td>2%</td>
<td>1.8-2.2%</td>
</tr>
</tbody>
</table>
Illinois Post Consumer Carpet Flow Chart

2014 Illinois Carpet Sales 187 Million lbs.

Replacement, market share + Demolition

Post Consumer Carpet Generated 175 Million lbs.

Collection and Processing 8 Million lbs.

New Building (8%)

Recycled Output (-3 Million lbs.)

- WTE (0.05 Million lbs.)
- Landfilled Discards (172 Million lbs.)

End Market Applications
End Markets for Illinois Post Consumer Carpet

- Engineered Resins: 70%
- Carpet Fiber: 11%
- Carpet Tile Backing: 19%
Other Outlets for Illinois Post Consumer Carpet
Other Outlets for Illinois Post Consumer Carpet

- **Re-use of Post Consumer Carpet**
  - Reported but Not Quantified
    - Habitat for Humanity; ReDo; Planet Recycle

- **Waste to Energy (WTE)**
  - 50,000 lbs. of carpet generated in Illinois went to a WTE facility located outside of Illinois
Disposal of PCC in Illinois landfills
Illinois Landfill Capacity

- 962 Million gate cubic yards available
- 39 Landfills reported receiving 44 Million gate cubic yards (5% of capacity)

**Significant Landfill Capacity Available**

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1 Illinois Landfill Projections of Disposal Capacity as of January 1, 2015, reported June, 2015
Study Comparisons- PCC Discards

1. Both Studies both have error range; Waste Study\(^1\) (+/- 57%); Illinois Carpet Recycling Survey (+/- 10%)
2. Estimates of Discards overlap within the error ranges
3. Both estimates are included in 2015 Survey Report

For Illinois Carpet Recycling Annual Reports, we recommend using Methodology outlined in this report, and include Waste Study Updates when issued (~ every 5 years)

\(^1\)2015 Illinois Commodity/Waste Characterization Study Update, IRA/CDM Smith, March 2015
Summary

About **187 million lbs.** of carpet was sold into Illinois in 2014

Approximately **175 million lbs.** of post consumer carpet was generated.

14 businesses either collected, sorted and/or processed post consumer carpet from Illinois in 2014.

About **13.4 lbs.** of post consumer carpet was generated per capita. This compares to a national average of about **10.9 lbs.**

8 million lbs. of post-consumer carpet was collected, for a gross collection rate of **5%**.

About **3 Million lbs.** of post consumer carpet became recycled output (2%).
- **70%** Engineered Resins for automotive, transportation, construction and home and garden industries.
- **19%** Carpet Tile Backing
- **11%** Carpet Fiber

Some of the PCC was reportedly reused, although not quantified.

A small amount (~ 50,000 lbs.) went to a WTE facility.

The remainder was disposed of in landfills. There is significant landfill capacity in Illinois.
References
References and Resources

- www.carpetrecovery.org
- www.swalco.org
- **2015 Illinois Commodity/Waste Characterization Study Update, IRA/CDM Smith, March 2015**
- 2014 **CARE** Annual Report
- Advancing **Sustainable Materials Management**: Facts and Figures 2013, EPA, June 2015
Thank You