

2008 Challenges & Opportunities
Learned from the

**2007 Independent Assessment
and Brainstorming Sessions**

**for the
Carpet America Recovery Effort**

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Zero Waste Alliance**



The original MOU called for an Independent Assessment to be conducted in Year Five to evaluate the progress and identify barriers toward meeting the Negotiated Outcome Goals set out in the original MOU.



Key MOU Stakeholders

- **CARE**
- **Carpet & Rug Institute**
- **Carpet industry**
- **Governmental entities**
- **Non-governmental organizations**



Memorandum of Understanding Negotiated Outcome Goals

NOTE: 40% is official 2012 goal

	2002	2005	2008	2010	2012
Recycling Rate	3.8%	7%	11%	15%	20 - 25%
Diversion Rate	3.8%	10%	19%	23%	27 - 34%

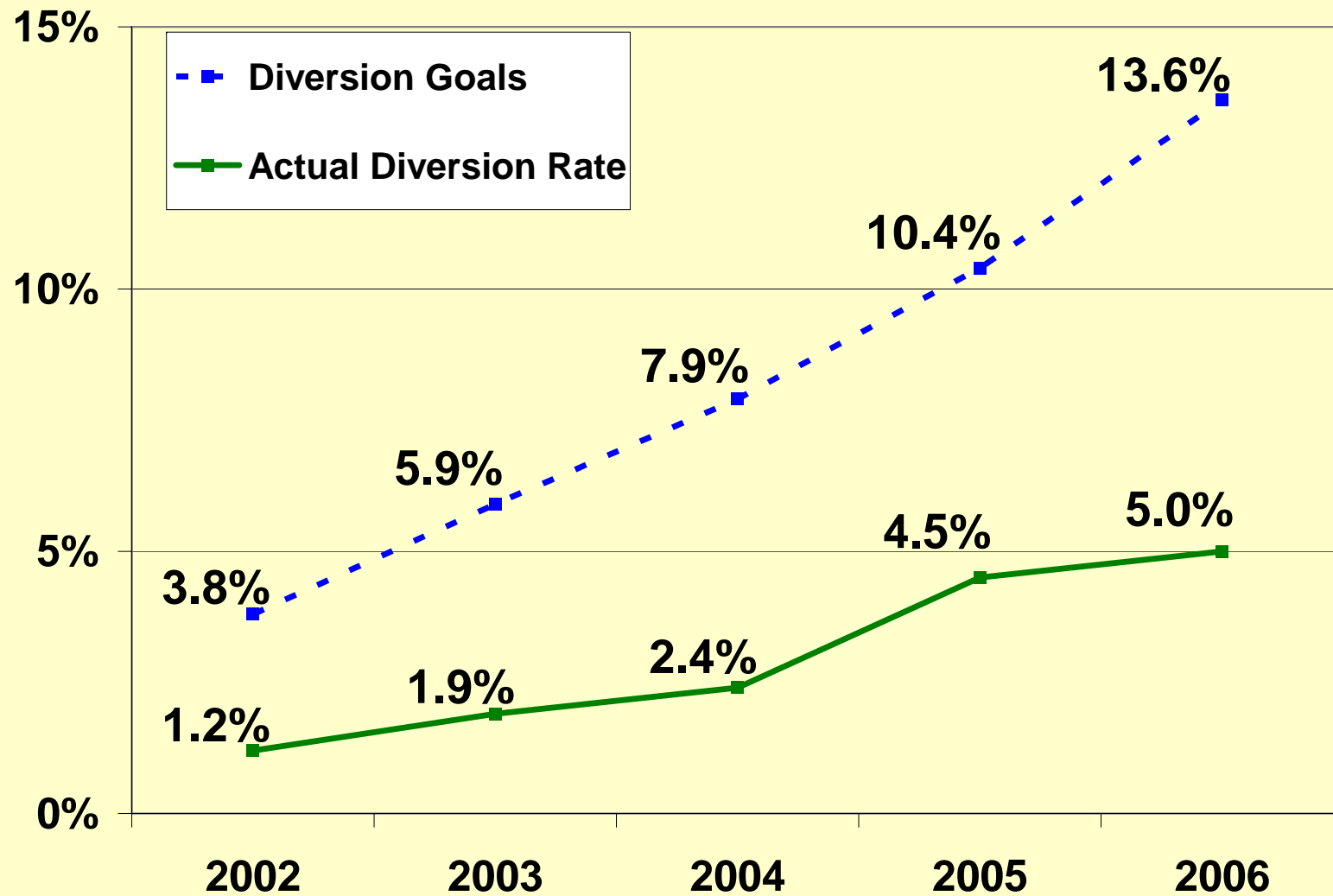


How Zero Waste Alliance did the Independent Assessment

- **Reviewed relevant history**
- **Interviewed 41 stakeholders in each key group**
- **Economic & environmental analyses**
- **Researched other...**
 - **Commodities' recycling evolution**
 - **Product stewardship efforts**
- **Evaluated findings, looked at barriers, offered recommended strategies**



Gap Analysis

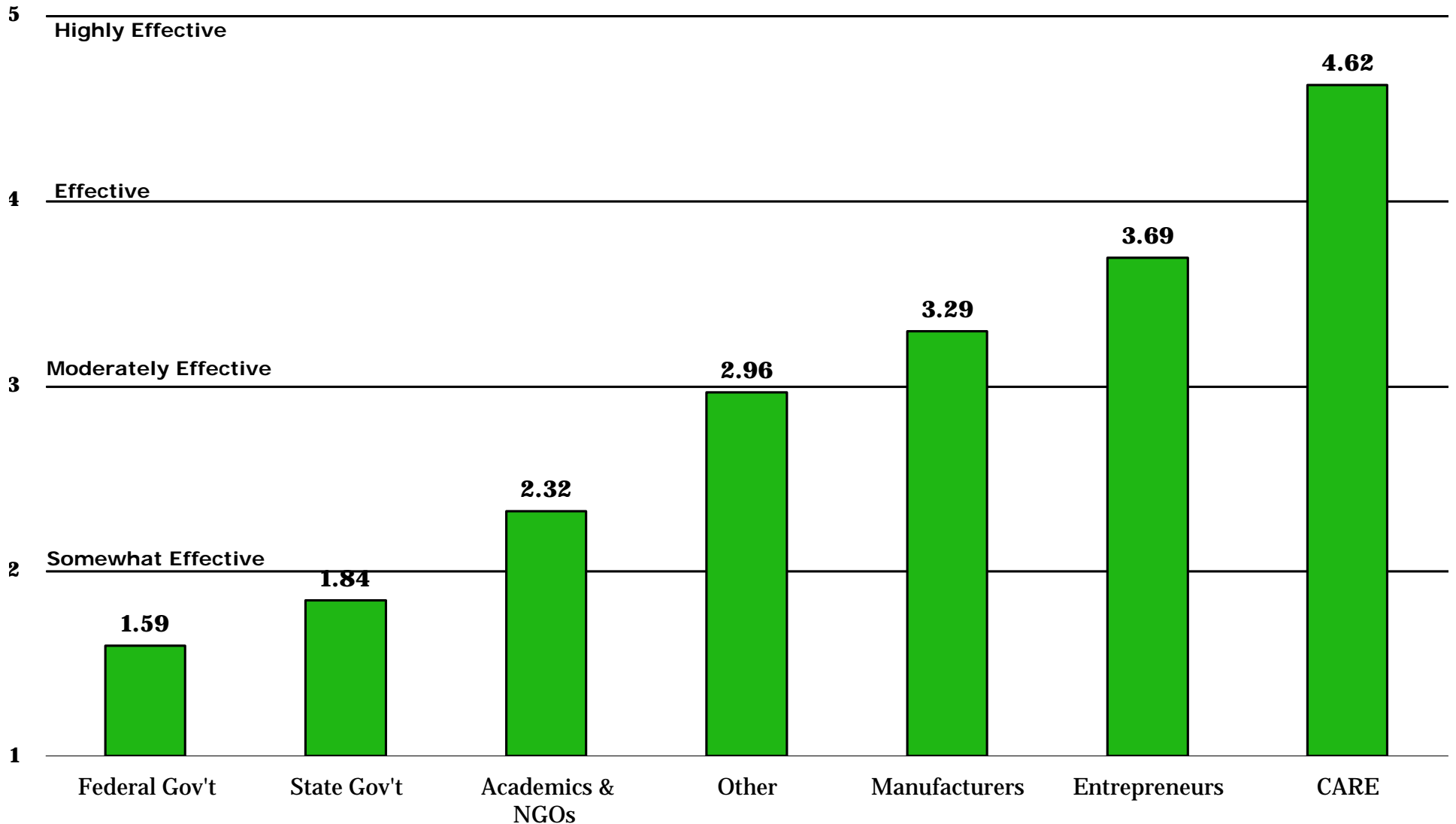


Barriers to Increasing PCC Diversion

- **Primary – lack of sufficient & diverse end markets**
- **Need to expand outreach, education & communication**
- **Collection economics and infrastructure**
- **Other barriers**
 - **Need more design for recycling**
 - **Processing challenges**
 - **Need more purchasing demand for PCC products**
 - **Policy & strategy**
 - **Inter-stakeholder relations**



Stakeholder Effectiveness



Stakeholder Efforts: Successes

- **Top successes:**
 - CARE up, running, & visible
 - Carpet ID tools
 - Diversion of PCC
 - Evolution of end markets
- **Other major successes**
 - Increased use of PCC by carpet-makers
 - Development of NSF 140-2007 standard
 - Coming back after setbacks



Stakeholder Efforts: Planned Future Efforts

- **Broader reclamation across fiber types**
- **Proprietary plans**
- **Develop non-US markets, new products**
- **Federal carpet procurement standard (?)**
- **Regional/nat'l carpet recovery networks**
- **Marketing NSF140**
- **New technology developments**
- **Sustainability initiatives (incl. green bldg)**
- **Expand usage of N6**



Environmental Benefits

Recycling nearly 700 million pounds of carpet to date has yielded a net reduction of about 650,000 MTCE, and about 2.4 million MTE of CO₂.

Material Recycled	MTCE/ Ton Recycled
Aluminum cans	-3.70
<u>CARPET</u>	<u>-1.96</u>
Mixed metals	-1.43
Corrugated cardboard	-0.85
Dimensional lumber	-0.67
Tires (re-treading)	-0.50



Observations Based on Survey Findings

- **Market development to create demand for end markets must be the top priority**
- **Enhancement of the flow of raw materials must accompany market development**
- **The majority of interviewees indicated that while CARE is doing a very good – even excellent – job, it could achieve much more with additional funding and resources**



Observations Based on Survey Findings (continued)

- **Additional outreach and education is essential to increase demand for products with PCC content**
- **Need to design carpet to be more readily recyclable and create two-way communication between recycler and manufacturer for improving design for recycling**



Recommendations by ZWA

#1: Market development for products made from PCC – top priority

- **Increase production and sales of carpet that contains PCC**
- **Foster development and production of a diverse set of products, made by diverse manufacturers, that incorporate PCC materials**
- **Increase marketing of products containing PCC, carpet as well as other products**



Recommendations by ZWA

#2: Enhanced flow of raw materials must accompany market development

- **Build a detailed and shared understanding of PCC market dynamics**
- **Aid the growth of the collection infrastructure, as processing infrastructure expands**



Recommendations by ZWA

#3: Develop sustainable and robust financing system for CARE

- **CARE's scope of services should be expand to include more staffing and granting capacity**
- **Provide funding through an industry membership fee program**



Recommendations by ZWA

#4: CARE organizational structure and reporting

- The Board should become more balanced between stakeholder groups
- Consider restructuring CARE as an independent organization – still closely tied to the carpet industry, but able to represent a broader group of stakeholder interests
- Various strategies for communications on data and goals



Recommendations by ZWA

#5: Additional tactical strategies

- **Seek ways to influence policy at Federal and state levels**
- **build upon and expand relationships with private sector players**
- **Greater involvement, identification, and interaction with the plastics recycling industry**
- **Follow development of cap-and-trade and other market instruments related to carbon and GHG reductions**



SWOT Analysis

- **Strengths:**
 - Strong leadership, great annual survey
 - Growth of diversion infrastructure
 - Great positive GHG impacts & job creation
 - NSF 140-07; CA Gold Standard
 - Rebuilding after setbacks
- **Weaknesses:**
 - CARE needs more resources
 - Immature end markets for PCC grades
 - Physical challenges in collecting PCC



SWOT Analysis

- **Opportunities:**
 - Build more & broader end markets
 - Use more PCC in new carpet; market this
 - Design for recycling for new carpet
 - Better understand plastic recycle markets
 - Leverage GHG reduction from recycling
- **Threats:**
 - Decentralized installation infrastructure hinders recovery (esp. residential)
 - PCC competing with virgin feedstock
 - Most landfill tip fees cheaper than recycling
 - Capital-intensive startup for carpet recycling



Brainstorm Sessions

- **December 2008, at request of Board**
 - **Facilitated by ZWA**
- **Held in Sacramento and Georgia**
- **Purpose: Get input & suggest plan**
 - **on the IA & SWOT**
 - **on strategies for moving forward**
- **Strategies sorted by short to long term**
- **Key areas of action...**



Key Areas of Action

- **Processing**
 - Invest in new technologies
 - Seek specific technical solutions to barriers, e.g., use a competition
 - How to decontaminate latex in processing?
- **End Market Development**
 - Open loop strategies, broadly
 - Understand plastics reclamation markets



Key Areas of Action, cont.

- **Stakeholder Relations**
 - Get all 50 states buying NSF 140 standard
- **Education & Outreach**
 - Stimulate demand from consumers for PCC products
 - Expand NSF
 - Learn more re plastic recycle markets
- **Invest in New Technologies**
 - Consortium approach



Key Areas of Action, cont.

- **Collection & Transportation**
 - Subsidy for collectors
 - Regional, decentralized processing centers
- **Design for Recycling**
 - Product stewardship paradigm
 - Shift to all thermosets
 - Upgrade resin ID codes
 - RFID track & identify
 - Recyclers talk to product designers



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