

# *The Future of Sustainable Materials Management*

## *Oregon's 2050 Vision for Materials Management*

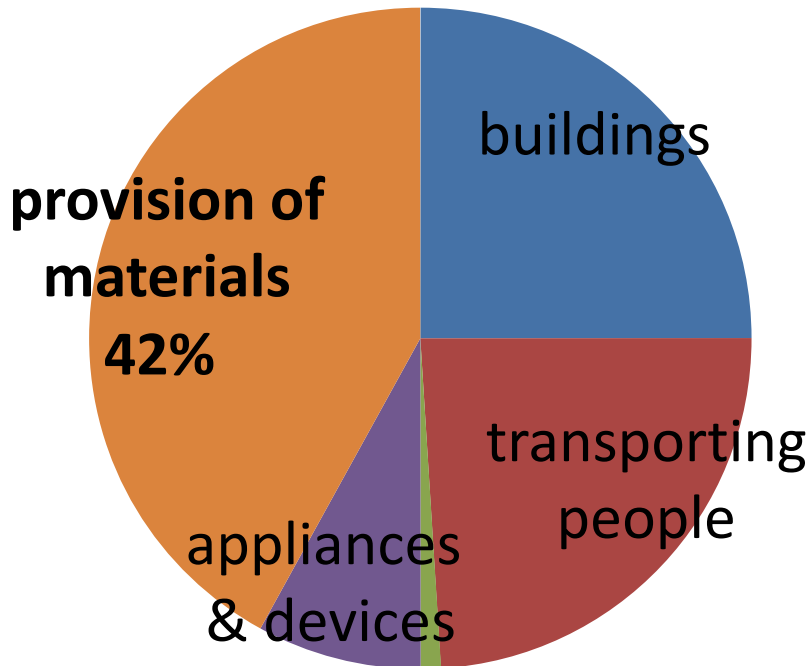
Shannon Davis, Oregon Department of  
Environmental Quality

*Recycling Today: 30 Years Later*  
NERC, Amherst, MA  
November 13, 2017

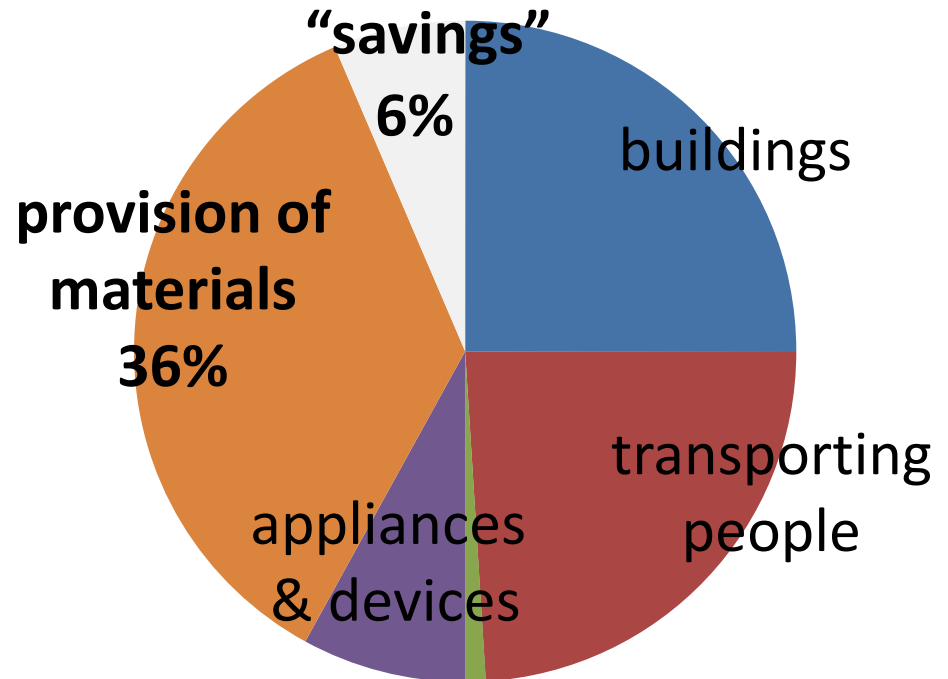
# Sustainable Materials Management: A “Life Cycle” View of Impacts and Actions



# Limitations of Optimizing “Solid Waste”



*2006 U.S. GHG inventory  
with 32% recovery  
(MSW)*



*2006 U.S. GHG inventory with  
very high recovery rate  
(~95% MSW + >70% C&D)*

# Oregon's *2050 Vision*

## Materials Management in Oregon

2050 Vision and Framework for Action

Adopted by the  
Environmental Quality Commission  
December 6, 2012



# Oregon's *2050 Vision*

*Oregonians in 2050 produce and use materials responsibly  
conserving resources • protecting the environment • living well*

# Strategies and Actions

- Preventing the Wasting of Food
- Materials Stewardship (includes recovery and recycling)
- Goals, Measurement and Metrics
- Reuse, Repair and Product Lifespan Ext
- Built Environment
- Sustainable Production & Consumption
- Business Initiatives

# Preventing the Wasting of Food

## Oregon DEQ Strategic Plan for Preventing the Wasting of Food



**Materials Management**

700 NE Multnomah  
Portland, OR 97232  
Phone: 503-229-5096  
800-452-4011  
Fax: 503-229-6762  
Contact: Elaine Blatt  
[www.oregon.gov/DEQ](http://www.oregon.gov/DEQ)



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# Preventing the Wasting of Food

## Strategic Plan for 2017 – 2021

### Near term projects

- Measurement study
  - Messaging research
  - Consumer campaigns and outreach
  - Commercial campaigns
  - Comparative analysis of prevention actions
  - Research on impacts of food rescue approaches
- Date labeling – initial research and tracking
  - Regional coalition





# Recovery (Recycling, Composting)

- Reducing contamination
- High-priority materials:
  - Plastics
  - Food
  - Carpet
- Multi-tenant recycling opportunity



Recycle if Clean & Dry

Store Drop-off

**PLASTIC**

BAGS / FILM / WRAP

[how2recycle.info](http://how2recycle.info)

**Recycle clean, dry plastic bags and film packaging**

Air Pillows

Grocery & Retail Bags (labeled #2 (HDPE) or #4 (LDPE))  
*Tip: Store in plastic bag until next trip to the store.*

Case Wrap

Newspaper Bags

Bread Bags (with staples removed)

Produce Bags

Food Storage Bags

Napkins, Paper Towel, Bathroom Tissue and Diaper Wrap Packaging

[plasticfilmrecycling.org](http://plasticfilmrecycling.org)

Look for this label on film products like these:

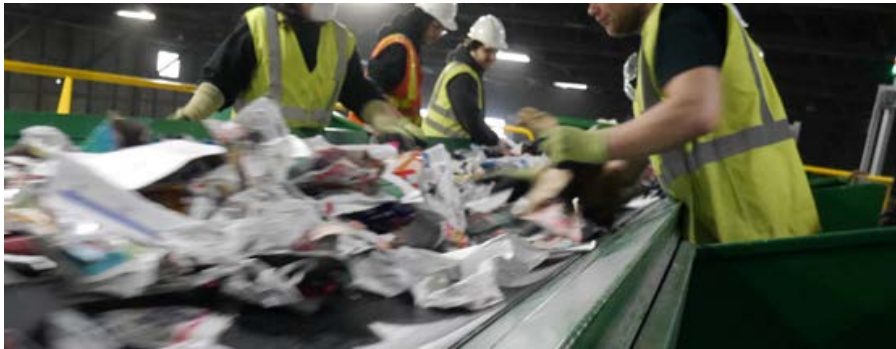
# Impacts of Material Flows in Oregon (IMFO)

- A new way of measuring recovery
- Compares the environmental outcomes of waste management --
  - In the past
  - For various future scenarios
- A life cycle analysis of the materials in Oregon's waste stream
  - Full life cycle, not only end-of-life
  - Ultimately will incorporate demand, not just waste
- Supports more and better recycling and waste prevention

# Reuse, Repair and Product Lifespan Extension



# Grants



# Attributes Research

Recyclable

Compostable

Bio-degradable

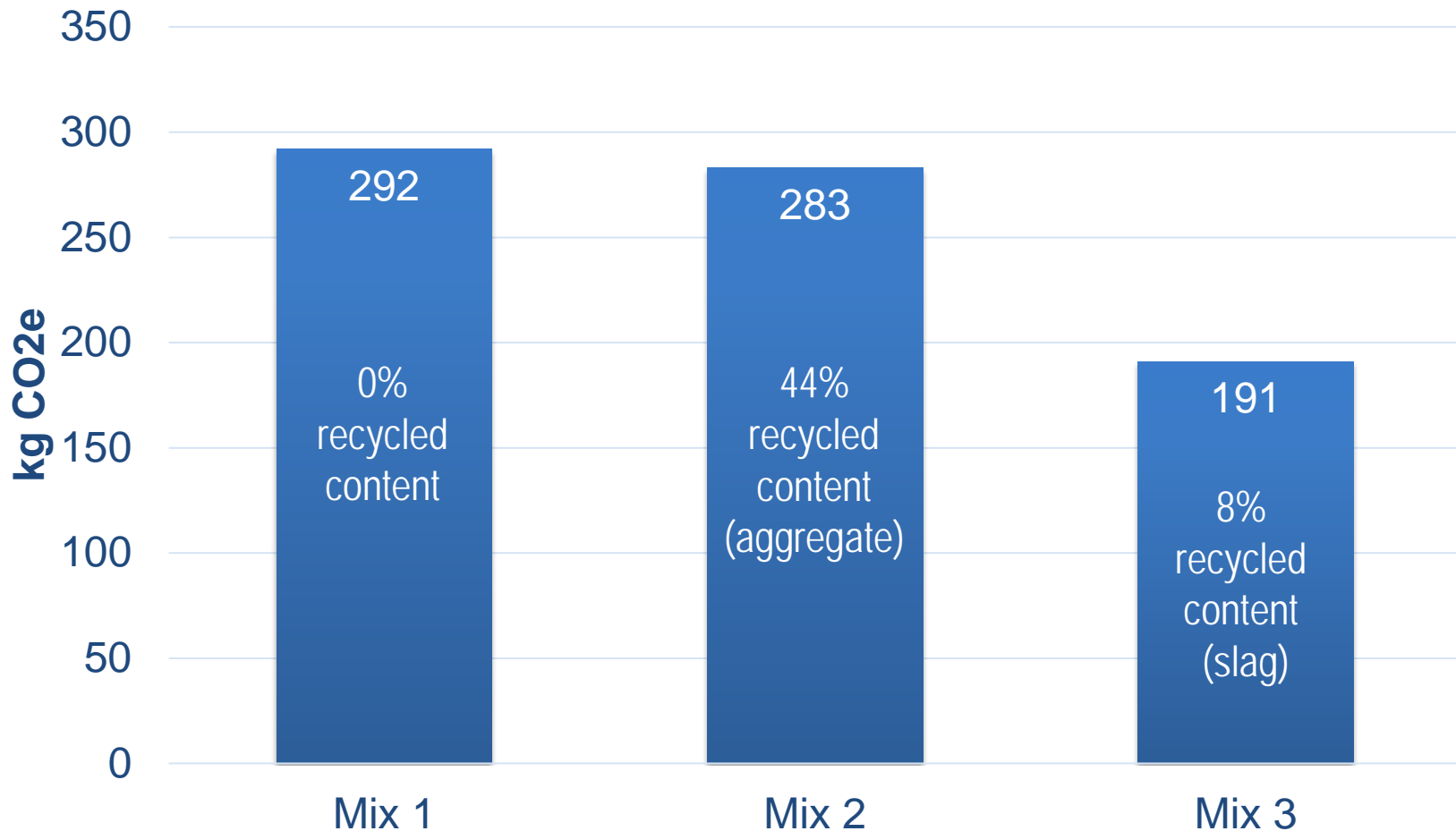


Bio-based

Planet Friendly

# Recycled Content Doesn't Consistently Predict Environmental "Goodness"

## Example: Concrete



# Environmental Product Declarations



## EPD “Nutrition” Label

### Your Building Product

Amount per Unit

LCA IMACT MEASURES	TOTAL
Primary Energy (MJ)	12.4
Global Warming Potential (kg CO <sup>2</sup> eq)	0.96
Ozone Depletion (kg CFC- 11 eq)	1.80E-08
Acidification Potential (mol H <sup>+</sup> eq)	0.93
Eutrophication Potential (kg N <sup>-</sup> eq)	6.43E-04
Photo-Oxidant Creation Potential (kg O <sub>3</sub> eq)	0.121

Your Product's Ingredients: Listed Here

# Oregon Concrete EPD Program

1. All concrete plants in Oregon get free access to a web based EPD tool that PCA developed
2. Limited technical support from DEQ
3. Reimbursement for 3<sup>rd</sup> party verified EPDs - \$2,500/plant
  - Not just EPDs using the PCA tool



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# Initial Observations

- SMM opens up huge new opportunities to conserve resources and reduce pollution.
- Upstream SMM is fertile and unplowed ground.
- SMM involves a new and more diverse set of partners.

# Initial Observations, continued

- “Landfill avoidance” frame is limiting and counter-productive.
- So is “everything must be recycled/recyclable”.
- How recycling is promoted may enable or inhibit prevention and other SMM.
- Significant potential to improve recycling and composting.

Thank You!

Shannon Davis

davis.shannon@deq.state.or.us

