# Sustainable Materials Management

EPA Region 4 Steve Smith



### What is SMM?

Sustainable materials management (SMM) is a systemic approach to using and reusing materials more productively over their entire life cycles. It represents a change in how our society thinks about the use of natural resources and environmental protection.





![](_page_3_Figure_0.jpeg)

### SMM Strategic Plan for FY2017 - FY2022

![](_page_4_Figure_1.jpeg)

# Advancing SMM in the Built Environment

![](_page_5_Picture_1.jpeg)

#### **Critical Action Areas**

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- Incorporate life cycle SMM concepts into the built environment marketplace.
- Support & advance climate adaptation and community resilience efforts.
- Improve and enhance data and measurement of C&D and industrial byproduct materials.

![](_page_6_Picture_5.jpeg)

### Single-Family Home Life Cycle Impact Analysis

![](_page_7_Picture_1.jpeg)

- Identifies materials, products, and services used in single-family homes that cast the greatest environmental impacts.
- Quantifies the life cycle environmental savings associated with example changes.
- Shows that increasing the recovery and reutilization of select building materials at the demolition of single-family homes can notably offset the life cycle impact of single-family homes.

![](_page_7_Picture_5.jpeg)

# https://www.epa.gov/smm/analysislifecycle-impacts-and-potentialavoided-impacts-associated-singlefamily-homes

![](_page_8_Picture_1.jpeg)

### **C&D** Debris Measurement and Data

- Included information on C&D debris generation in 2012 and 2013, in the U.S in the 2015 Advancing Sustainable Materials Management: Facts and Figures.
- Plan to continue to provide estimates for C&D debris generation.
- Estimates for C&D debris generation in 2014 are included in the new Facts and Figures report.

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#### Advancing Sustainable Materials Management: Facts and Figures 2013

Assessing Trends in Material Generation, Recycling and Disposal in the United States

June 2015

# Wasted Food in the US

![](_page_10_Picture_1.jpeg)

- Roughly one third of the food produced in the world for human consumption every year - approximately 1.3 billion ton gets lost or wasted. (UNEP 2011)
- Americans waste about \$1 per person every day, or \$1600 per year for a family of 4.
- Getting food to our table accounts for 10% of U.S. energy consumption, uses 50% of U.S. land, and 80% of fresh water consumed in the U.S.
- It costs more than \$17 million a year to landfill wasted fresh tomatoes alone and \$1.3 billion to landfill all household food waste.

![](_page_11_Picture_4.jpeg)

![](_page_12_Figure_0.jpeg)

#### **Critical Action Areas**

- 1. Develop an infrastructure to support alternatives to landfill disposal of wasted food.
- 2. Promote opportunities across food life cycle to reduce wasted food from landfills, with preference for approaches higher on EPA food recovery hierarchy.
- 3. Improve and standardize measurement of wasted food.

![](_page_13_Picture_4.jpeg)

![](_page_13_Figure_6.jpeg)

# **Sustainable Packaging**

![](_page_14_Picture_1.jpeg)

#### **Critical Action Areas**

- 1. Convene and foster partnerships around infrastructure development
- 2. Work with Federal Agencies as Strategic Partners.
- 3. Research, Data and Standards for Packaging.

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#### Wrap Recycling Action Plan (WRAP) • Working with the ACC and

- Working with the ACC and consultants
- Goal is to double polyethylene film recycling by 2020 to two billion pounds
- Reduce film contamination at MRFs

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![](_page_16_Picture_5.jpeg)

![](_page_16_Picture_7.jpeg)

![](_page_16_Picture_8.jpeg)

### **GROWING LIST OF PARTICIPANTS!**

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![](_page_17_Picture_2.jpeg)

![](_page_17_Picture_3.jpeg)

Flexible Film Recycling Group

![](_page_17_Picture_5.jpeg)

### Integrated Solid Waste Management

Three distinct Projects:

- Vision for 2030
- Updated full cost accounting for ISWM considers sustainability through recycling and recovery
- Limited set of spreadsheets to assist decision makers in estimating cost of doing five different things.

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#### Guide to Integrated Solid Waste Management Accounting and System Funding

- This is a guide to accounting intended for local government solid waste management officials, local government management and elected officials, and state agency staff who work with local government staff and officials.
- Guidebook will walk readers through:
  - Various ways to fund solid waste systems
  - Pros and cons of the various funding mechanisms
  - Operating and long-term costs
  - How to amortize capital
  - o How to recognize savings from landfill diversion

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#### Benchmarking Analytics for New Program Expansions

Spreadsheet- based ISWM Model designed for local governments to use to estimate the financial implications of making changes to their materials management programs

- Implementing a hub and spoke system
- Residential single-stream collection
- Residential dual-stream collection

ental Protection

- Transitioning a single-stream residential curbside program from collection using bins to using carts
- Implementing a comprehensive drop-off program

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## Status Update and Next Steps

- Combined Framework for Action and 2030 Vision was sent out last week .
- Webinar focusing on the ISWM Model to provide instruction, insight and collect feedback.
- Webinar with moderated panel to discuss system funding and accounting issues and how well the Handbook addresses these.
- Develop additional concepts for tools or other informational needs.

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# State Measurement Plan

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#### **2015 SMP Summary**

32 states and District of Columbia Participated 2015 Template

Disposed	Recycled	Composted
269.2 million tons with 225 million tons MSW	85 million tons	12 million tons
(32 states+ DC) 237 million people	(22 states + DC) 171 million people	(23 states + DC) 150 million people

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### National Measurement Summit

Who: 50 States, local governments, stakeholders, industry and anyone interesting in measurement & related performance. What issues?:

- Help each other, including States that are not reporting
  - Learn how materials move in SMP
  - How to use SMP to measure system performance
    - Hands on training on SMP
  - Face to face discussions on measurement and data

### National Measurement Summit

- Garner tips on enhancing data quality
- Create the business case for local governments
- Develop roles for local governments in the supply chain
- Learn what data collection is need to support your program
  - Learn how participant rates improve after optimizing collection program and data collection?
    - Help set standards for waste sorts, capture rates, characterization
      - Networking and building future collaborations

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### Questions?Thank You!

Steve Smith smith.steved@epa.gov 404-562-8501

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