What is Sustainable Materials Management

• SMM seeks the most productive use of resources through the entire life cycle, while waste management seeks to minimize and/or manage wastes or pollutants.

Sustainable Material Management’s Life-cycle Perspective. US EPA. 2018, August 14)
Typical Waste Management Hierarchy

- Source Reduction & Reuse
- Recycling / Composting
- Energy Recovery
- Treatment & Disposal

Most Preferred

Least Preferred
Project Phases

Phase I (Completed): What is SMM and should we do it?

Phase II (Active): Prioritization and timing of what we should do and how we should accomplish it

Phase III (Future): Ongoing Implementation
Phase I - Visioning

- Convened stakeholders
- Internal DNR Pondering
- Visioning effort
- Surveys

How important do you think it is for Iowa to transition from an integrated solid waste management policy to a sustainable materials management policy? (Aiming for the highest and best use of discarded materials and improved environmental protection)
Phase I (Completed)
Feasibility Results

Answer
1. Not at all likely
2.
3.
4.
5.
6.
7.
8.
9.
10. Definitely will happen
Phase II Goal

Establish a clear direction for implementing an SMM system with immediate, medium and long-term strategies
Process

Select specific material types within each category

Define specific strategies
  • Legislation
  • Policies
  • Programs
  • Infrastructure
  • Funding mechanism

Identify implementation timeline, responsible party, and performance metrics
Stakeholders Reviewed
Material Categories

- Plastics
- Metals
- Fibers
- Organics
- Glass
- Construction and Demolition Debris
- Household Hazardous Materials/Universal Wastes
- Durable Goods
- Renewable Energy Equipment
Criteria for Selection of Materials

Categories

Build on What's Already Working

Implementation Feasibility

Environmental Benefits

Phase I Recommended

Percent of Disposed Waste Stream
Materials Selected

Organics & Fibers
- Edible Food
- Pre-Consumer Spoiled Food
- Compostable/AD Paper, Food and Yard Waste

Plastics
- Single-Use PET Water Bottles
- Plastic Film/Bags
- Polystyrene (Styrofoam)

Renewable Energy Equipment
- Wind Turbines
- Solar Panels
- Storage Batteries

Construction & Demolition
- Interior Building Components
- Roofing Materials
- Drywall, Plaster and Gypsum Board
- Treated and Untreated Wood
Progress To Date

Two stakeholders meetings

Three subcommittee meetings

Focus on exchange of information
  • From Project Team to Subcommittee:
    • What is SMM?
    • How is it already occurring in Iowa?
    • What are other states doing – successfully or not?
  • From Subcommittee to Project Team
    • How Iowa entities operate
    • Existing programs
    • Challenges and road blocks

Presentations from subject matter experts

Research on existing Life Cycle Assessments

Evaluation of potential strategies for development and consideration

IOWA DEPARTMENT OF NATURAL RESOURCES
KAYLA LYON, DIRECTOR
Organics and Fibers

Immediate (0-3 years)
- Create smaller size options for menu items - K-12/Institutions
- Sell pre-measured ingredients for specific meals
- Advocacy campaigns to raise awareness and educate consumers about ways to prevent food waste and environmental effects
- Work with USDA to evaluate rules that minimize food waste and allow for unconsumed food to be taken home
- Education and outreach campaigns to reduce plate waste on buffets

Medium (4-10 years)
- Create smaller size options for menu items - restaurant
- Standardize food label dates to two phases (quality and safety risk)
- Optimize food packaging size and design for complete consumption
- Flat service rate for waste collection plus a charge by weight
- Explore curriculum that connects food waste with environmental challenges

Long-Term (11+ years)
- Change K-12 lunch programs (effort already performed)
Plastics

**Upstream Measures**
- Design for recycling or composting
- Survey public on viewpoints related to bans and fee incentives
- Research replacing plastic bottle vs. recycle plastic bottle
- Identify problematic packaging

**Immediate (0-3 years)**
- LCA - single use plastic bag vs trash bags
- Tax define, recyclable, compostable, biodegradable

**Medium (4-10 years)**
- Eliminate problematic and unnecessary packaging
- Provide incentives to use alternatives to plastic bags
- Fee for plastic bags, $ to education

**Long-Term (11+ years)**
- Local or statewide ban plastic containers
- EPR - producer responsibility program for packaging
- Monitor EPR policy framework for packaging in other states
- Consider adopting EPR policy framework for packaging

**Consumer Actions**
- Develop reuse and refill pilots and funding
- Encourage reusables for dine-in
- Research H&S codes on reusable containers
- Encourage reusables for take-out and delivery
- Encourage reusables for food distribution

**End of Life**
- Date on volumes of bottle bill vs MRF for collection
- Data on statewide single streams on labeling and requiring materials accepted - consistency
- Education and awareness campaign to reduce recycling programs
- Collection data on true destinations of materials in recycling facilities

**IOWA DEPARTMENT OF NATURAL RESOURCES**
KAYLA LYON, DIRECTOR
Renewable Energy Equipment

Next 5 Years

- Encourage policies to solve end of life challenges
- Encourage solutions that drive businesses and solutions to move to Iowa
- Consider re-establishing and expanding the renewable energy tax credit
- Promote the benefits of renewable energy
- Fair and equitable outcomes for all utilities
- Survey of installers on types of waste - residential or business and proper disposal

Beyond 5 Years

- Encourage research on recycling on RE materials
- Research what counts as recycling in Iowa - does burning?
- Review ordinances and determine if they should be standardized
Construction and Demolition Debris

C&D

Immediate (0-3 years)
- Conduct LCAs and waste characterization studies
- Increase building community's understanding of the impacts of building design, material use, and construction practices

Medium (4-10 years)
- Review and update building codes for government projects
- Reduce sales tax on recycled content construction materials

Long-Term (11+ years)
- Review and update building codes for commercial and residential projects

Upstream Measures
- Create multi-departmental task force on C&D

Incentivize building repurpose and material reuse
- Educate consumers on deconstruction principals and practices
- Educate contractors concerning deconstruction and reuse resources

LCA For C&D Waste Materials for
Construction and Demolition Debris

Consumer Actions
- Develop sample project bid language supporting green building practices
- Increase building community awareness and support of REE services

End of Life
- Support donation and deconstruction facilities - Root cause analysis of previous facilities in Iowa
- Pose the question to DOT of changing “May” to “Shall” for RAS 5%
- Remove barriers to development of C&D processing facilities
- Incentivize development of C&D facilities

Lumber yards (alternative outlets) outlets for reused materials
Builder/contractor certification program - tie to national
Implement green building practices
Communicate with cities on revising permits
LCA For C&D Waste Materials for public projects

Cities/Counties for commercial projects
Next Steps

Series of additional subcommittee meetings

Evaluate potential strategies
- Infrastructure
- Regulations
- Education
- Funding

Conduct additional research

Updates and recommendations to stakeholder group

End goal: Understanding of the strategies needed for SMM to be viable and beneficial in Iowa