

#1 Plastics

Subcommittee Meeting #1 Summary - Plastics June 9, 2021 2PM-4PM

Subcommittee meeting #1 of the Plastics Subcommittee (#1-Plastics) was convened virtually via Zoom on June 9, 2021 from 2-4 PM, CST. Committee membership and attendance for #1-Plastics is provided in Table 1 below.

Table 1. #1-Plastics Subcommittee Membership and Attendance

Name	Company	Attended 6/9/21
Harlan Buxbaum	Dee Zee, Inc.	Present
Michele Boney	West Liberty Foods	Present
Troy Willard	Can Shed LLC/ Iowa Recycling Association	Present
Merry Rankin	Iowa State University	Present
Julie Ketchum	Waste Management	Present
Mick Barry	Mid America Recycling	Absent
Scott Vander Sluis	Van's Sanitation and Recycling	Present
Bryce Stalcup	Waste Commission of Scott County	Present
Jennifer Horner	That's Not Trash, LLC	Present
Joe Bolick	Iowa Waste Reduction Center	Present
Sue Waters	Plastics Recycling of Iowa Falls, Inc.	Present
Nicole Crain	Iowa Association of Business and Industry	Absent
Laurie Rasmus	DNR Internal SMM Team	Present
Amie Davidson	DNR Internal SMM Team	Present
Tom Anderson	DNR Internal SMM Team	Present
Jennifer Wright	DNR Internal SMM Team	Present
Jennifer Reutzel Vaughn	DNR Internal SMM Team	Present
Michelle Leonard	Consultant – SCS Engineers	Present
Christine Collier	Consultant – SCS Engineers	Present
Karen Luken	Sub-Consultant – EESI*	Present

* Economic Environmental Solutions International

A. Subcommittee #1-Plastics Summary

The meeting began with introductions of the Iowa Department of Natural Resources (DNR) staff and their role, the consulting team, and the #1-Plastics Subcommittee members. The subcommittee meeting purpose and goals were then introduced, in addition to the decision making process to be utilized for these meetings. Modified consensus will be utilized for decisions to the extent possible, with members agreeing that although a decision may not be their personal highest choice, they can live with what has been selected. When this method fails, a vote will be taken with a quorum (majority of the total members, not just those present) required. In order for a vote to pass, a majority of the members must vote in its favor.

Background on both sustainable materials management (SMM) and the results of Stakeholder Meeting #1 were then presented. Additional detail on information presented in the Subcommittee Meeting #1 Plastics meeting is provided in the agenda (Attachment A) and PowerPoint presentation (Attachment B). Initial research was completed on subcategories and materials resulting from Stakeholder Meeting #1. Results of this research were presented to the subcommittee prior to taking a brief break.

Subcommittee members shared their perspectives on issues, challenges, and opportunities in the area of plastics.

Discussion on challenges and opportunities included the following:

PACKAGING

- Packaging is biggest challenge. Plastic bags have an outlet generally but Styrofoam is a problem, with not being able to find an outlet.
- Packaging can be dictated by OEMs (original equipment manufacturers), at end of product life (which could be 10 years down the road), durable foams used for transport becomes the manufacturers issue. Have 160 pallets of foam to get rid of in an environmentally responsible manner.
- Information in purchase agreements to manage packaging so it's not on end user

BOTTLES

- Priority: water bottles. Bottled water is the number one consumed beverage in America.
- Water bottles and sports drinks are not covered by the Iowa Bottle Bill, which currently only covers carbonated and alcoholic beverages. This needs to be expanded to cover all PET.
 - Expanding the Bottle Bill to include PET would be to the detriment of existing material recovery facility's (MRF's) as they rely on that revenue.

EDUCATION

- Focus should be... What is recyclable, what's not? What can we fix, what can't be fixed? How easy is that to fix?
- MN put together an extensive recycling guide for folks in the business... but there is still materials in the recycling stream that should not be there. The general public has questions
- Beyond the chasing arrow, there is packaging that is confusing. Work needs to be done on plastics education but it's a start that it should be 1, 2, and 5 and not other plastics in your cart. A unified front on this helps.
- Education is necessary to raise awareness of damaging consequences to resources and opportunities to reduce impacts.
- Education is also required on what is recyclable and belongs in the recycle bin versus what does not. The chasing arrow is confusing to general public.
- Targeted education is needed on what options are available.
- Education focuses on type of product rather than #'s.
- Resident's need to know where to recycle materials that say they can be recycled but don't have actual markets.

PLASTICS TYPES/ NUMBERS

- At WM Twin Cities MRF, they collect #s 1, 2, 5. There is no home for mixed plastics – 3, 4, 6, and 7.
- HDPE recovery is important with demanding a high price so we should look at that also.
- Food barrier films are not recycled but there are some coming out that are. This will still be an issue.
- Hard plastics are difficult to get rid of, sometime require incineration. For example, plastic aprons are used in the food industry.
- Biggest aspect is having outlet for film, plastics, Styrofoam.
- Need research on Styrofoam and packaging.
- Recycle all plastics except PVC, no Styrofoam.

GENERAL

- Recycling in rural Iowa can be challenging.
- Omaha has Hefty Bag program, which seems to be working well.
- What are the opportunities to recycle and manufacture new products in Iowa?
- Benefit is to have places to recycle and have products remade in Iowa rather than shipping across states or the nation.
- Need options that have a positive impact on the environment beyond single use plastics.
- Center for bioplastics and bioplastics... film, other containers. Utilize those resources.
- Smart Business Challenge – limited to international companies with other requirements they have to maintain. Reusable shipping containers and packaging where they receive packaging and then send it back.
- Unified recycling throughout state or education well communicated to avoid confusion throughout.
- Some retail stores are expecting labels on packaging to state how to recycle, but this varies by locations.
- Contamination is biggest issue.

Reoccurring points of discussion included strategies for improving education and outreach efforts concerning the use, reuse, and recycling of plastics; the need for a unified message throughout the state; importance of local end markets; focusing on plastics that have viable reuse options; and focusing on single use water bottles.

B. Recommendations

Based on the discussion during the #1-Plastics meeting, the following plastics have been recommended to be further evaluated for increased sustainability options:

- Single-Use Water Bottles
- Film/Plastic Bags
- Styrofoam

C. Research Request List

Through the discussions and in follow up discussions, various topics were identified for further research. These are provided below:

Iowa Waste Reduction Center Research Topics:

- How have other states incentivized manufactures to locate in state? Ex. Facility in Indiana (Brightmark) who will take all #3-#7 to generate a resin but they need all #3-#7 in the state to work. State provides loans and financing and other deals by the cities.
- Are there companies in Iowa using plastics to make new products? Are these companies working at capacity or can they take additional materials? What are their challenges? Plastics Recycling of Iowa Falls can use plastics with the exception of PVC and Styrofoam in their “cake mixes” for their end products.
- Lifecycle Analysis on single use PET water bottles, film, plastic bags, and Styrofoam.
- What are other states doing with film/plastic bags and Styrofoam?
- Compilation of information on states that have banned single use bags.
- Legislation in other states on takeout food containers.
- Waste Expo recently wrapped up. Contact pertinent presenters for additional information.

Research Topics to be Completed by Others:

- Which states have statewide education campaigns for recycling/materials management? How do they handle variability throughout the state – or do they work to establish markets, etc. to have a unified program? How are state campaigns funded and how much funding is dedicated to the statewide education campaign?

D. Other Notes

Other items of note from the #1-Plastics meeting are as follows:

- Bryce Stalcup, Waste Commission of Scott County, accepted the role of Subcommittee Chair and will represent the Plastics subcommittee at Stakeholder Meeting #2 in September.
- Next Plastics subcommittee meeting dates and times are:
 - July 28, 2021, 2PM-4PM CST
 - September 1, 2021, 2 PM-4PM CST
- Second Stakeholder Meeting will be held on September 30, 2021. Subcommittee members in addition to other interested parties are invited and encouraged to attend.

Attachments:

Attachment A: Agenda

Attachment B: PowerPoint Presentation

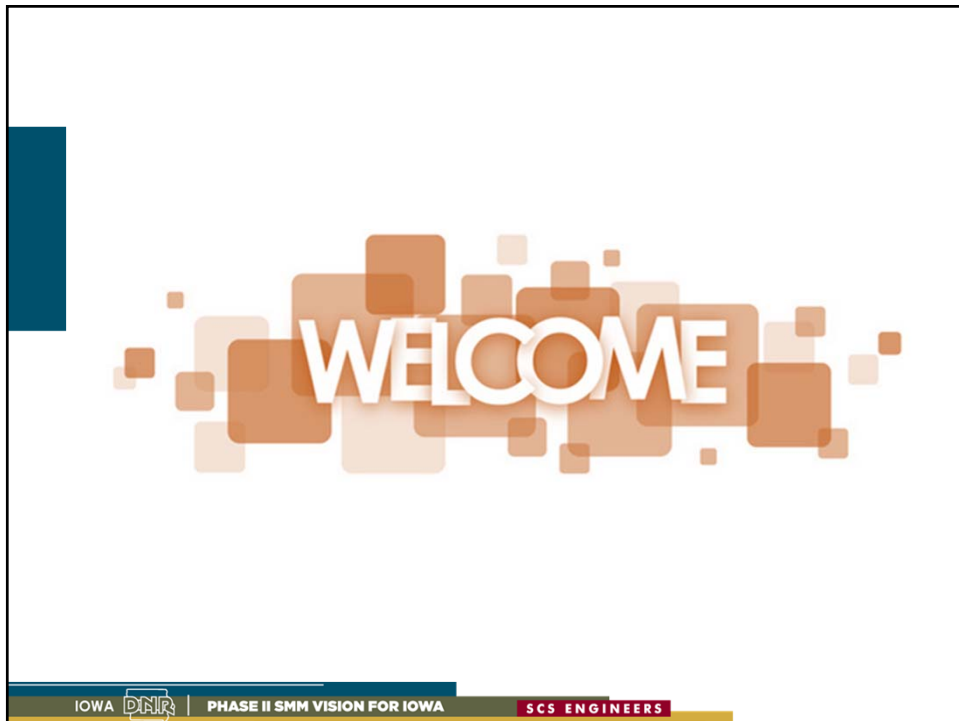
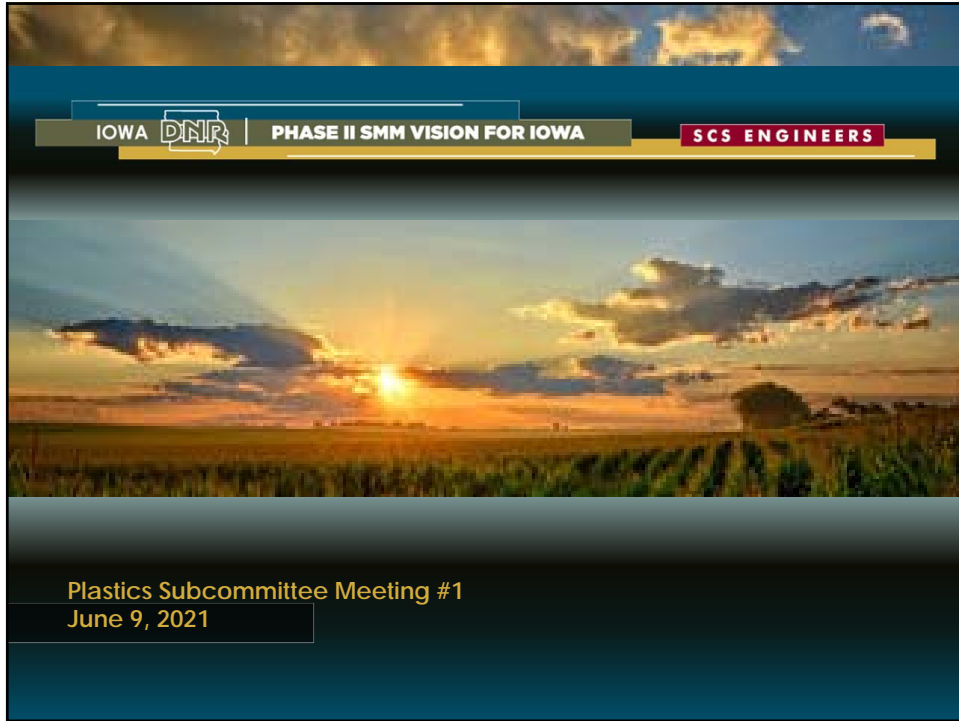
Attachment A
Agenda

Subcommittee Meetings #1

June 9-10, 2021

1. **Introductions**
 - a. Project Team
 - b. Subcommittee Members
2. **Subcommittee Meetings Purpose and Goals**
3. **Decision Making Process**
4. **Background**
 - a. Sustainable Materials Management
 - b. Stakeholder Meeting #1
5. **Material Category Research Conducted to Date**
6. **Prioritizing Materials**
7. **Next Steps**
 - a. Selecting a spokesperson
 - b. Future meetings dates and logistics

Attachment B
PowerPoint Presentation



Agenda

- **Introductions**
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 - Sustainable Materials Management
 - Stakeholder Meeting #1
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Introductions



Committee Introductions

Name/Nickname

Organization

Your Experience with Plastics

IOWA



PHASE II SMM VISION FOR IOWA

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Expectations

Share your expertise

Ask a lot of questions

Be open to new ideas and concepts

Share information and solicit input from your co-workers, friends, and family

Please keep participating

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SCS ENGINEERS

Communication Styles

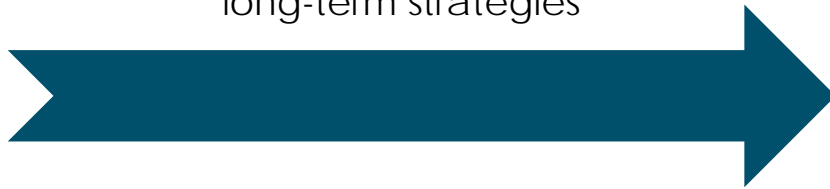
Director	Expresser
<ul style="list-style-type: none"> • Goal oriented • Tells it like it is • Makes decisions quickly • Always on the go • Speaks crisply • May be insensitive, intimidating 	<ul style="list-style-type: none"> • People oriented • Animated, easily excited • Makes expressive gestures • Entertaining • Thinks out loud • Speaks rapidly • May be imprecise
Thinker	Harmonizer
<ul style="list-style-type: none"> • Task oriented • Makes lists • Does things "by the book" • Speaks deliberately • Believes there's a right way and a wrong way • May procrastinate 	<ul style="list-style-type: none"> • Relationship oriented • Sensitive to others • Dedicated, loyal • Speaks softly • Avoids conflict • May over-commit

Communication Assessment

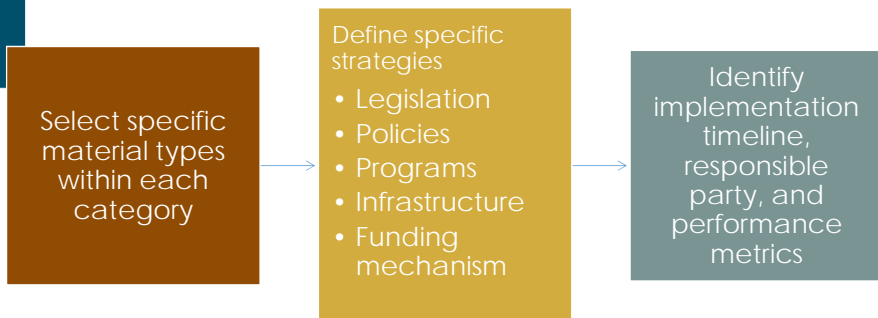


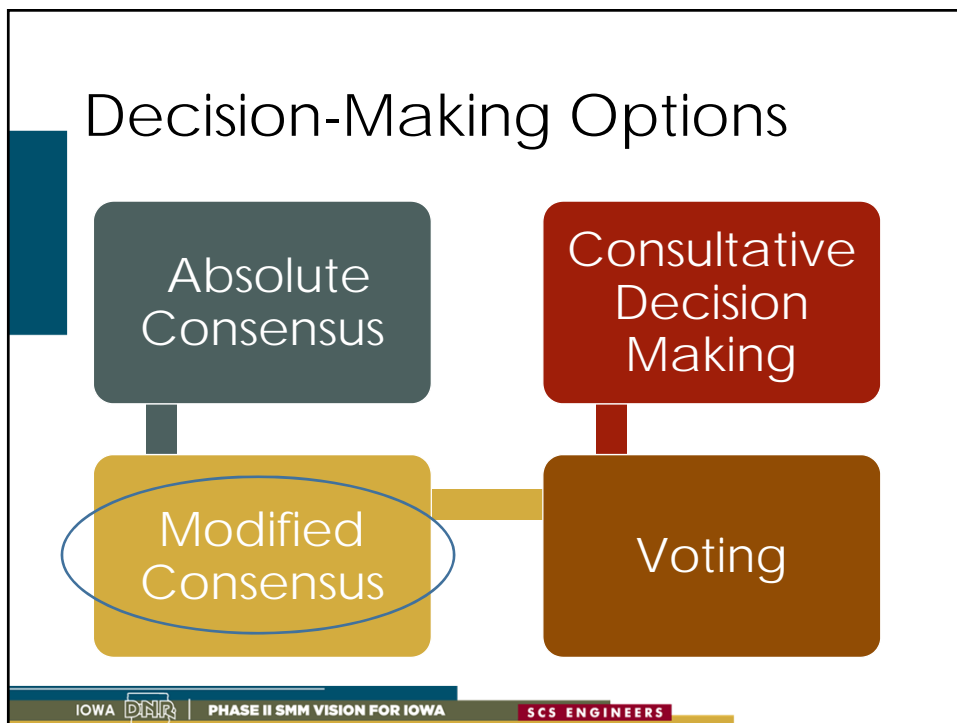
Goal

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



Process





Administrative

- A quorum is the majority of members
 - A quorum is required to conduct a vote
 - Only subcommittee members can vote
 - All motions will require a second and a vote of the subcommittee
- We will convene two more times before the next Stakeholder meeting
 - July 28
 - September 1
 - Subcommittee will elect a chair
 - Represents the subcommittee at Stakeholder meetings



Phase I

- Occurred between November 2018 and October 2019
- Included:
 - Initial strategy meeting
 - Planning meetings
 - Benchmarking study
 - Vision for Iowa Think-Tank
 - Surveys
 - Focus groups
 - Think Tank Report
 - SMM Vision Report

What is SMM?

"Sustainable materials management is an approach to using and reusing materials most productively throughout their entire life cycles"

It represents a change in how our society thinks about the use of natural resources and environmental protection

Source: USEPA

What Isn't SMM?

- Product Bans without LCA on alternative products
- Landfill diversion requirements without:
 - Strategies to reduce generation
 - Sufficient infrastructure and funding to collect and process
 - Assessment of impact on greenhouse gas emissions; especially at landfills with landfill gas to energy systems
 - Assessing the impact of GHG emissions from transporting recyclables across country/world
 - Viable off-take markets

SMM Need

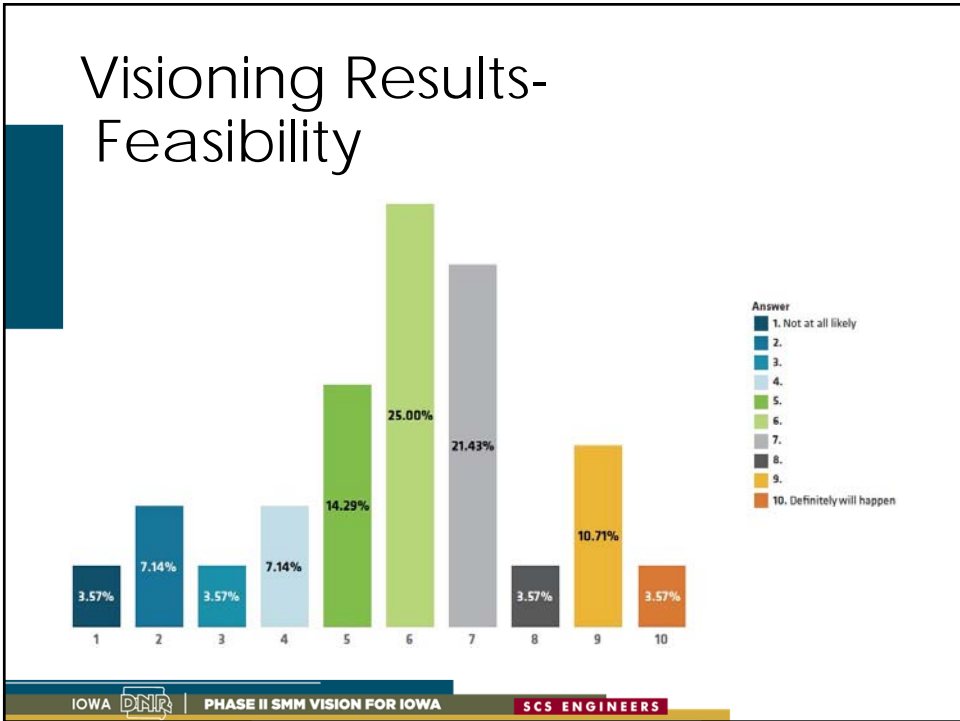
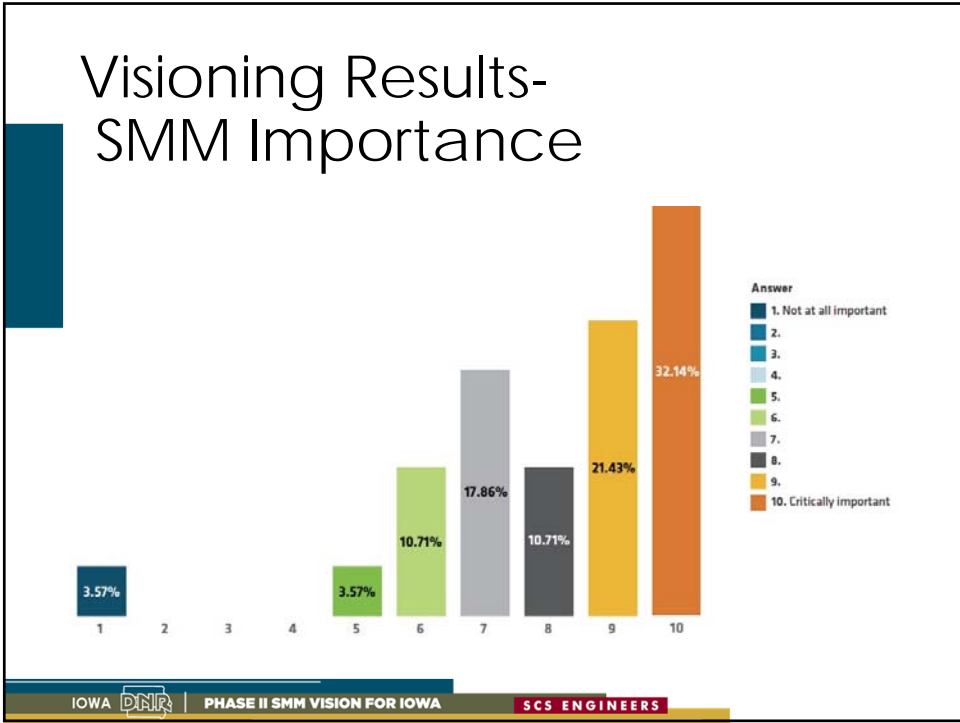


Global raw material use rose during the 20th century at about twice the rate of population growth



For every 1 percent increase in gross domestic product, raw material use has risen by 0.4 percent





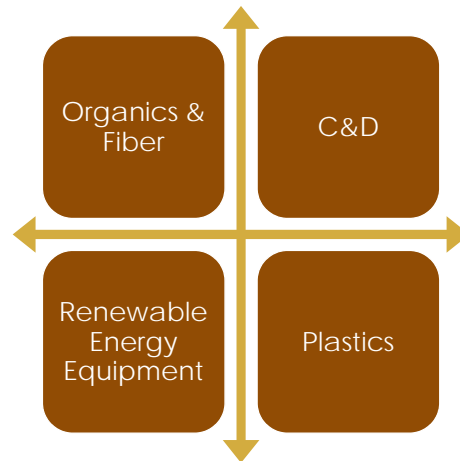
Phase II

- Began in late 2020
- Will end in 2022
- Contents
 - Stakeholder Workshops
 - Subcommittee Work Sessions
- First Stakeholder Workshop held on 3-25-21
- Approximately 50 Participated via Zoom
 - Business, waste industry, education, municipalities, consulting, and state government

Stakeholders Reviewed Material Categories for Iowa SMM



Material Categories Selected



Category Material Types

Plastics

- Rigid containers/bottles
- Other Single-Use Products
 - Food service ware
 - Straws
 - Plastic Bags
- Packaging
 - Styrofoam
 - Film



Phase I Benchmarking

State	Sustainable Materials Planning Document	Material Life Cycle Analysis	Recycling Market Development	Food Waste Management	Sustainable Materials Stakeholder (SMM) Education	Container Deposit Laws	Materials Stewardship
Minnesota	✓	✓	✓	✓	✓		✓
Vermont	✓	✓	✓	✓	✓	✓	✓
Maine	✓	✓		✓	✓	✓	✓
Oregon	✓	✓	✓	✓	✓	✓	✓
Tennessee	✓			✓	✓		

Phase I Benchmarking Conclusions



Many statewide SMM programs linked to waste reduction and diversion goals



State funding mechanisms not likely sustainable in the long-term



States transitioning to SMM system prioritize increased organics diversion and fostering materials stewardship

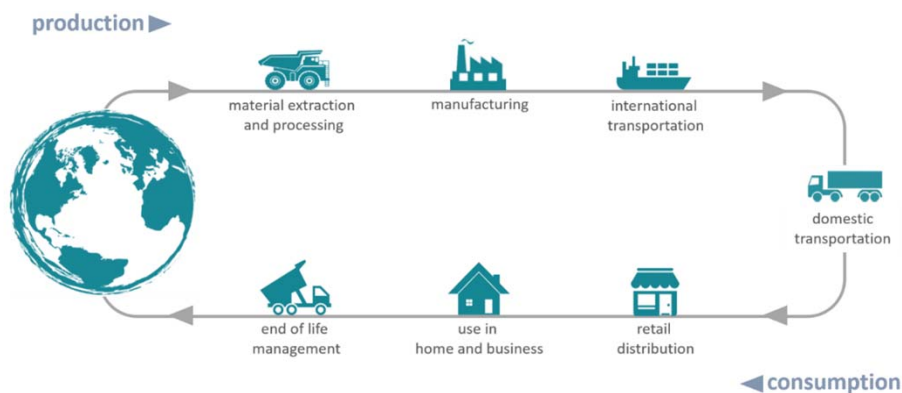
Phase II Research

- Iowa products and producers
- Existing LCA's
- State-driven extended producer responsibility
- Campaigns to change consumer behavior

Background-Plastics

Plastics in the environment	Iowa Beverage Container Control Law "Bottle Bill"	Existing Iowa Plastics Industry	Plastics Alternatives
<ul style="list-style-type: none"> • 18 % of disposed waste stream • Increased use for packaging and single-use products • China National Sword • Markets for #1,2 • Limited markets for #3-7 	<ul style="list-style-type: none"> • All carbonated and alcoholic containers • \$0.05/container • 71% recycled annually 	<ul style="list-style-type: none"> • Processing, manufacturing, marketing • Employs 14,000 people • 23rd in national employment • \$4.1 billion annual shipments (1% of nation) • 16 plastics manufacturers • Post-consumer processing and recycling 	<ul style="list-style-type: none"> • No existing manufacturers • Two organizations conducting bioplastics research

Life Cycle Assessment



Food Service Ware

- Type of material is not a consistent or reliable predictor of reduced impact.
- No “best” material among single-use options
- Paperboard items have lower carbon impact than some plastic resins (including bio plastics), but not statistically significant.
- Production-related impacts many times larger than end of life impacts
- End-of-life treatments (e.g., landfilling, composting, recycling, or incineration) can result in different levels of emissions (or in some cases, emissions reductions).
- Recycling reduces emissions, composting increases emissions.

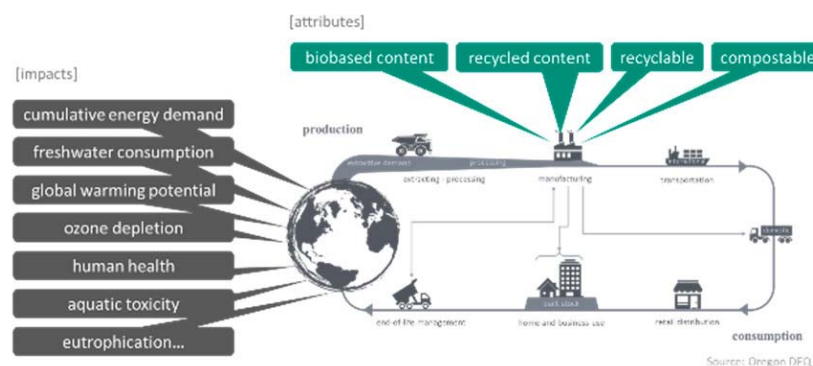
Food Service Ware

- Food service ware relatively small contributor to climate change.
- Food and beverages represent 13 percent of emissions.
- Preventing the wasting of food may be a more important area to focus.
- Food service ware are highly visible and sometimes unessential.
- Best approach is to avoid them

Water Bottles

- OR DEQ study compared environmental impacts of drinking water from the tap, 5-gallon reusables, and single-use bottles.
- The study confirms that while recycling bottles is environmentally preferable to disposing of them, buying bottled water and recycling the bottles is not the best environmental choice.
- Drinking water from the tap (waste prevention) typically has substantially lower impacts in most categories of environmental impact.

Packaging Attributes



Packaging

- Focus is on packaging waste or feedstock substitution.
- Literature review to determine whether recyclability, recycled content, compostability and biobased correlate with lower net environmental impacts
- Results identified that material attributes do not correlate with environmental benefits for packaging
- Material choice or mass of the packaging can have higher influence in determining life cycle impacts

Single-Use Plastic Bags

- Reusable PE bags have lower environmental impacts than single-use bags, but the results are sensitive to usage rates.
- SUPBs rank better than single-use paper bags and biodegradable bags in almost all environmental categories, except impacts of littering.
- Biodegradable bags have lower impacts on marine littering than PE bags and lower contribution to GHG emissions than paper bags
- Single-use LDPE or HDPE bags rank worse than other bags in terms of littering
- LDPE produced from recycled plastics has much less climate impact than fossil-based LDPE
- A reusable LDPE bag has lower climate impacts than conventional single-use plastic bags, if used 5-10 times more than the single-use bag
- The average reuse rate in the US is just 3.1 times
- Durable PP bags are heavier than reusable LDPE bags, but they are also more durable. In order for PP bags to be environmentally competitive with LDPE bags, they need to be used more times.



BREAK (10 Minutes)

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Discussion

Your perspective on plastics

Challenges

Opportunities

Material types to add?

- Rigid containers/bottles
- Other Single-Use Products
 - Food service ware
 - Straws
- Plastic Bags
- Packaging
 - Styrofoam
 - Film

Prioritization Mapping

