#5 Plastics | Subcommittee Meeting #5 Summary - Plastics March 29, 2022 9AM-12PM

Subcommittee Meeting #5 of the Plastics Subcommittee (#5-Plastics) was convened virtually via Zoom on March 29, 2022 from 9 AM -12 PM, CST. Attendance for #5-Plastics is provided in Table 1 below.

Table 1. #5-Plastics Subcommittee Membership and Attendance

Name	Company	Attended 3/29/22
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	Present
Scott Vander Sluis	Van's Sanitation and Recycling	Present
Bryce Stalcup	Waste Commission of Scott County	Present
Jennifer Horner	That's Not Trash, LLC	Absent
Joe Bolick	Iowa Waste Reduction Center	Present
Sue Waters	Plastics Recycling of Iowa Falls, Inc.	Absent
Nicole Crain	Iowa Association of Business and Industry	Present
Halil Ceylan	Iowa State University	Present
Gabe Claypool	Des Moines Industrial	Present
Marcus Brandstad	American Chemistry Council	Present
Samuel Sturtz	Iowa DOT	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	Absent
Michelle Leonard	Consultant – SCS Engineers	Present
Christine Collier	Consultant – SCS Engineers	Present
Rosa Cruz	Consultant – SCS Engineers	Present
Ketan Shah	Consultant – SCS Engineers	Present
Karen Luken	Sub-Consultant – EESI*	Present

* Economic Environmental Solutions International

I. Subcommittee #5 - Plastics Summary

The meeting began with the project consulting team reviewing the agenda for this meeting (see Attachment A), the overall objectives of the Sustainable Materials Management (SMM) – Vision for Iowa project, the process and goals of the project process, and the goals for today's subcommittee meeting. The Stakeholder Meeting #3 schedule and Subcommittee responsibilities were also discussed. The slides presented for this Subcommittee meeting are included in Attachment A.

During Subcommittee meeting #4 the project consulting team presented the results of an LCA performed for single use water bottles prepared by SCS Engineers. A baseline scenario was modeled to understand the environmental impact of each impact category. Impacts included global warming potential, ozone depletion, human health, eutrophication etc.

The parameters selected for the model were:

- Percent of plastic content of bottles
- Percent of plastic resin incinerated
- Percent of rigid plastics landfilled
- Percent of water bottles reused
- Process parameter

The percentages used to create a baseline model were:

- Recycled content = 0%
- Plastic resin incinerated = 20%
- Rigid plastics landfilled = 80%
- Water bottles reused = 30%
- Process parameter = Water loss is considered

Global warming potential was analyzed from the modeled results. The results concluded that 42% of the global warming potential came from PET bottle converting and another 40% was from the poly propylene cap resulting in about 80% of the global warming potential coming from the manufacturing of single use plastic water bottles.

Following the presentation of the model the consulting team discussed what scenarios could be run to model potential legislation or programs that could be implemented in Iowa to reduce the environmental impacts of plastic water bottles. Subcommittee members expressed that they would like to see a baseline model that is more representative of Iowa and offered suggestions to improve the model.

During Subcommittee Meeting #4 subcommittee members felt that using a base model with 0% recycled content was not representative of Iowa. During meeting #5 the consulting team presented results from various recycled content percentages. The base line vs alternative scenarios are shown in Figure 1. The results of the environmental impact of these various scenarios are shown in Figure 2 and Figure 3.

Figure 1 – Modeled Scenarios

Baseline	Alternative 1	Alternative 2	Alternative 3
0% Recycled Content	10% Recycled PET	50% Recycled PET	80% Recycled

Figure 2 – Global Warming Potential Comparison

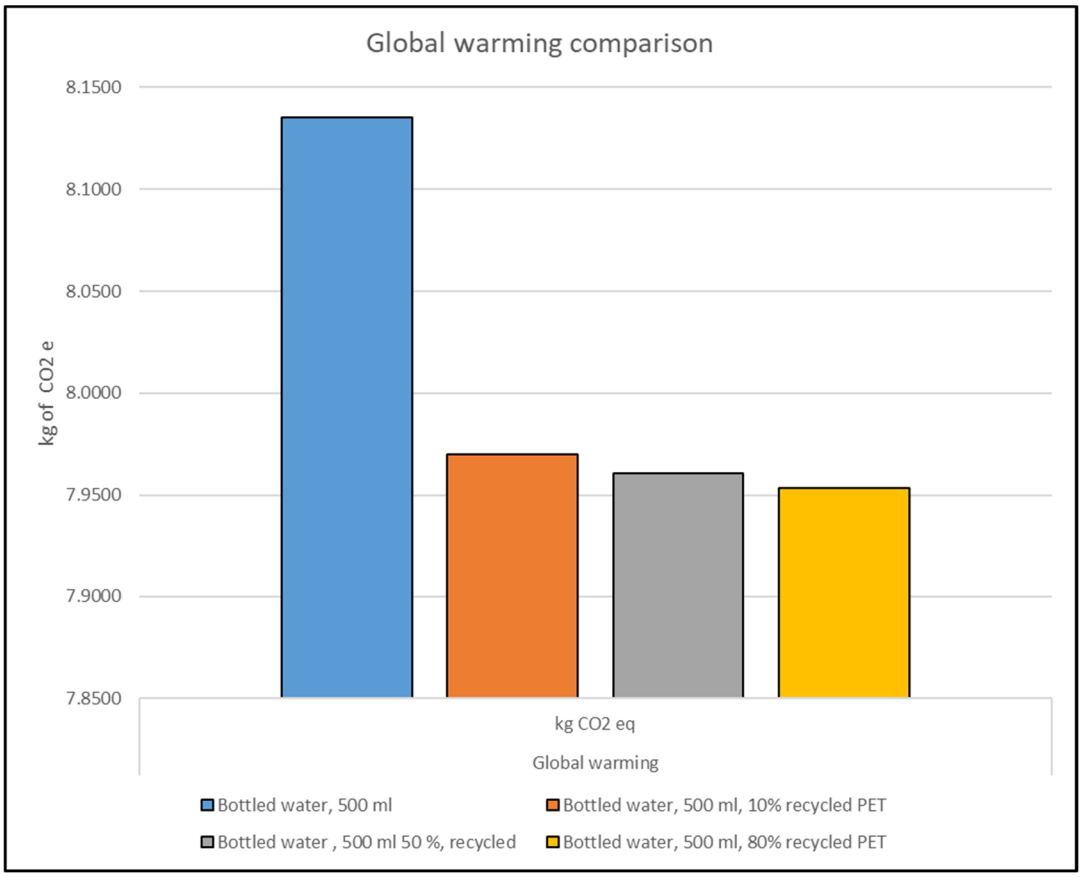
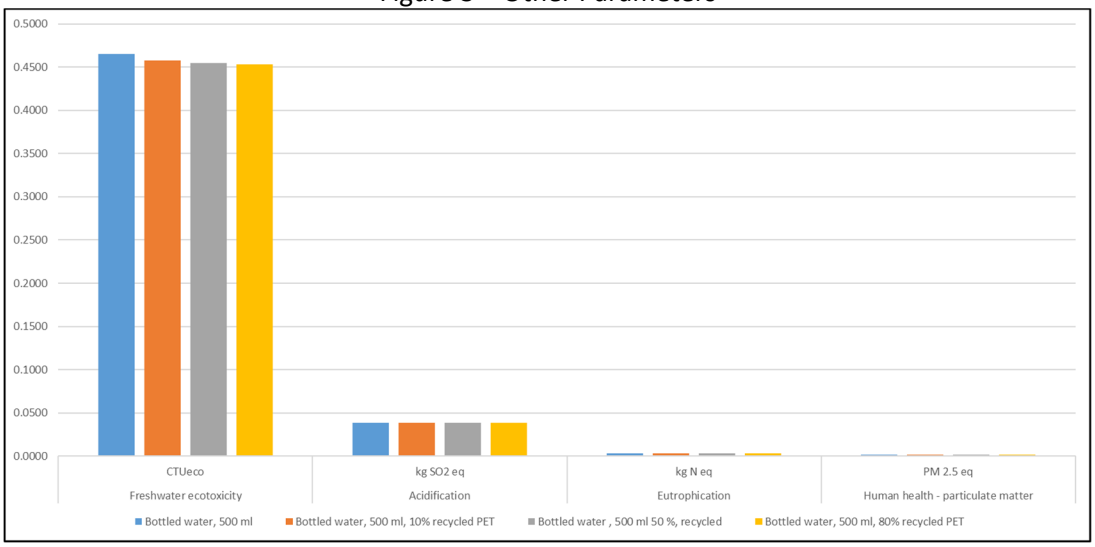


Figure 3 – Other Parameters



It was concluded that the less recycled PET the greater the global potential. This is due to the electrification for the mold to manufacture plastic water bottles, the energy use, and emissions that come along with producing a single use water bottle.

The goal for this meeting was to establish a clear direction for implementing an SMM system with immediate (0-3 years), medium (4-10 years) and long-term (11+ years) strategies. Implementation strategies were discussed for conducting research and education on plastics and implementing policies and programs to reduce plastic waste in Iowa.

A. OBJECTIVE 1: CONDUCT RESEARCH AND EDUCATION ON PLASTICS

STRATEGY: CONDUCT EDUCATION AND AWARENESS CAMPAIGNS ON LITTERING AND RECYCLING CONTAMINATION - SHORT TERM

Subcommittee Member Discussion

- The DNR is currently doing a social media campaign to encourage recycling.
- The goal for the DNR campaign is to increase education on recycling on a local level, every area has differences in what is accepted so the DNR directs people to their own planning area.
- Keep Iowa Beautiful has had litter campaigns in the past and has partnered with DNR.
    - Understand what KIB is currently doing in Iowa in terms of litter studies.
- Waste Commission of Scott County has educated the public on recycling through mail, ads and schools.
- Look into other states campaigns on recycling and assess if they would be viable in Iowa.
    - Example: Michigan
        - Home - Recycling Raccoons
- MRF's in Minnesota offer very detailed recycling education to its coordinators.

STRATEGY: IDENTIFY PROBLEMATIC PACKAGING AND OPTIONS FOR RECYCLING AND COMPOSTING - SHORT TERM

Subcommittee Member Discussion

- Thermoforms were identified as problematic for recycling.
- Plastic wrap can also be problematic but drop off locations for recycling are available.
    - Site to find plastic film and wrap drop off locations : The Wrap Recycling Action Program - Plastic Film Recycling
    - Marcus from American Chemistry Council will try and obtain Iowa specific statistics on plastic film and wrap recycling.
- ISU is conducting research on transportation engineering application for waste plastics.
- Halil Ceylan from Iowa State University has interest in working with other people to come up with ideas on how to use plastic in other products. Through his research he is looking for anything that will help strengthen the base subgrade layers and increase the bearing capacity so they can extend the life of the transportation infrastructure system without causing environmental issues. He is also looking at use of recycled plastics in products, for example, making perforated drainage pipes out of recycled plastics for subdrains to help in transportation systems. This is all in the initial stages and will develop further as work goes on.

Strategy: Research opportunities for Post-Consumer Recycling content purchasing for state and local agencies - Short Term

Subcommittee Member Discussion

- ACC plastics division has a goal and is supportive of recycled content, their goal is 30% recycled content in packaging 2030 (30 by 30).
- DNR used to have green committee that encouraged the purchase of more sustainable products but it was never mandated.
- VA has adopted legislation for PCR by 2030.
- State purchasing/procurement would go through Dept of Administrative Services.

Strategy: Conduct public opinion survey regarding bans, fees, incentives - Short Term

Subcommittee Member Discussion

- There have been many issues with using surveys in the past.
    - Hard to get agreement on how questions are framed.
    - If a survey is too long people are less willing to fill it out.
    - Sometimes they only capture a certain group while leaving others out.
- Efforts should go towards research, education and lastly surveying.
- Advance Iowa has partnered with ABI and DNR in the past to conduct surveys.
- The whole group should be involved in formulating questions for surveys not just one party.
- MRFs currently capture data that could help assess if education of the public is effective.
- This strategy may be optimal for medium or long term.

Strategy: Inventory recycling methods and facilities throughout the state - Long-term

Subcommittee Member Discussion

- MRFs can provide information on who they serve and what they recycle.
- MRFs can be involved in helping gather information.
- This strategy should be moved up in priority to medium term

Strategy: Monitor EPR policy framework for packaging in other states – Long-term

Subcommittee Member Discussion

- This strategy should be moved up to short term

B. Objective 2: Implement policies and programs to reduce plastic waste in Iowa

Strategy: Develop reuse and refill pilots and funding - Short term

Subcommittee Member Discussion

- Hy-Vee used to offer reusable bags for a dollar.
- Plastic water bottles are used because of their convenience.
- Expand refillable water stations in more public spaces.
    - Refill stations allow the ease of using refillable water bottles.

- Iowa State University has refillable water bottle stations in every building and students take advantage of them.

Strategy: Develop and adopt state definitions, standards and labeling for biodegradable, compostable and recyclable - Short term

Subcommittee Member Discussion

- Look at state definitions that already exist and then add these or adopt them into code.

Strategy: Research H&S codes regarding reusable containers - Short term

Subcommittee Member Discussion

- Look into current health and safety codes that exist.
- It was suggested to replace plastic containers with a compostable product or paperboard product but there is currently no infrastructure in Iowa for composting compostable products and paperboard is usually too contaminated to recycle.
- Delaware has gone beyond banning plastic bags and has considered banning other products such as single-use cups. A policy like this could pose a problem to businesses like Starbucks who would have to adjust their business depending on the region they are in.
- Is this strategy more appropriate for next phase of project?

Strategy: Develop and implement policies to reduce single-use food service ware in public spaces - Medium Term

Subcommittee Member Discussion

- The City of Boulder is piloting using reusable take out containers at restaurants, users will take the container home and return them when they return to the restaurant. Restaurants have a separate party cleaning and sanitizing the reusable containers.
- Blue Cross Blue Shield in Des Moines has reusable containers for employees.

Strategy: Develop and adopt incentives to use alternatives to single-use plastic bags – Medium Term

Subcommittee Member Discussion

- Can we tax using plastics bags?
- Before the pandemic Hy-Vee offered a five cent discount as an incentive for customers to bring in their own reusable bags. Five cents were taken off for each bag you had.

C. Research Request List

Through the discussions, various topics were identified for further research. These are provided below.

- Research KIB litter studies
- Research recycling education campaigns in other states and asses if they are viable in Iowa.
- Research opportunities for PCR content purchasing for state and local agencies.

- Research current state definitions, standards and labeling for biodegradable, compostable, and recyclable.

D. Other Notes

Other items of note from the #5 - Plastics meeting are as follows:

- Remaining objectives and strategies not discussed in Subcommittee #5 will be completed in Subcommittee #6 on April 26, 2022.
- The third Stakeholder Meeting will be held June 15, 2022. Subcommittee members in addition to other interested parties are invited and encouraged to attend.

Attachments:

Attachment A: PowerPoint Presentation

Attachment A
PowerPoint Presentation

Agenda

1. **Introductions**
   a. Project Team
   b. Subcommittee Members
2. **Background**
   a. Sustainable Materials Management
   b. SMM Vision for Iowa Project
   c. Process
3. LCA Update
4. Strategies Discussion

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

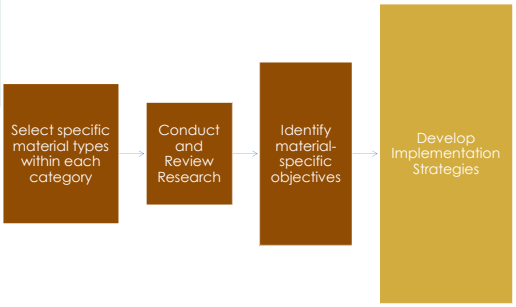
What Isn't SMM?

- 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

Project Goal

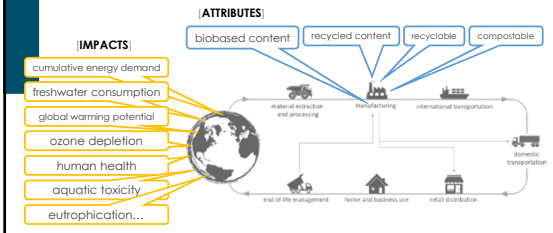
Establish a clear direction for implementing an SMM system with immediate, medium and long-term strategies

Process to Date



LCA Update

Study Process: Material Attributes and Life Cycle Impacts



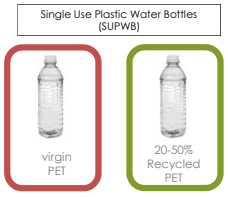
ODEQ, D. Allaway, 2019

Baseline Input Parameters Discussion…

- **Recycled content = 0% to 50% (selected 0%)**
- Plastic resin incinerated = 0% to 20% (selected 20%)
- Rigid plastics in landfill = 80%
- Water bottle reused = 30%
- Process parameter = water loss is considered

Discussion/Selection of Modified Scenarios

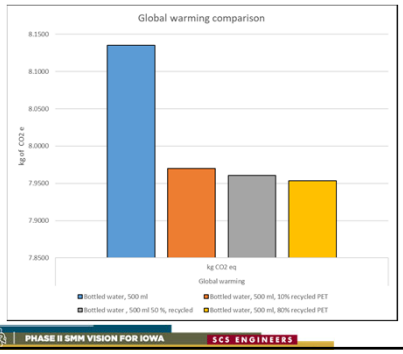
- Comparative LCIA of scenarios, different permutations for single use water bottle parameter analysis.
- Plastic resin; major contributor to the carbon footprint.
  - Recycling; estimated 30 to 70 percent decrease in GHG emissions
- Other environmentally friendly alternatives include:
  - Using less plastic for bottles,
  - Making a lighter bottle,
  - Reducing transportation distances, and
  - Other energy-intensive processes.



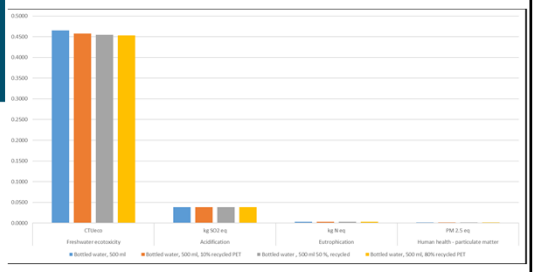
Comparative Analysis of Single-Use Plastic Bottle Pollutants

Baseline	Alternative 1	Alternative 2	Alternative 3
0% Recycled Content	10% Recycled PET	50% Recycled PET	80% Recycled PET

Global Warming Potential



Other Parameters



Strategy Discussion

Strategy Implementation Schedule

- Short (0 - 3 Years)
- Medium (4- 10 Years)
- Long (11+ Years)

Strategy Implementation Considerations

- Implementation Approach
- Legislation/Policies
- Infrastructure
- Funding Needs and Sources

Conduct research and education on plastics

- Conduct education and awareness campaigns on littering and recycling contamination
- Identify problematic packaging and options for recycling and composting
- Research opportunities for PCR content purchasing for state and local agencies
- Conduct public opinion survey regarding bans, fees, and incentives

Conduct research and education on plastics

- Monitor EPR policy framework for packaging in other states
- Inventory recycling methods and facilities throughout State

Implement policies and programs to reduce plastic waste in Iowa

- Develop reuse and refill pilots and funding
- Develop and adopt state definitions, standards, and labeling for biodegradable, compostable, and recyclable
- Research H&S Codes regarding reuseable containers

Implement policies and programs to reduce plastic waste in Iowa

- Develop and implement policies to reduce single-use food service ware in public spaces
- Develop and adopt incentives to use alternatives to single-use plastic bags
- Require post-consumer recycled content purchasing for government agencies
- Incorporate all non-carbonated beverage containers into Bottle Bill
- Reconsider Ban on Bans
- Develop and Implement EPR for plastic packaging

Implement policies and programs to reduce plastic waste in Iowa

- Develop and adopt policy to ban single-use plastic bags
- Develop and adopt PCR content requirements for packaging
- Establish producer registry and reporting for packaging

Support recycling, processing, and manufacturing technologies and facilities (end markets)

- Support research on methods to transform plastics into new products, fuels, etc.
- Incentivize development of facilities