

#1 C&D Debris Subcommittee Meeting #1 Summary – Construction & Demolition Debris June 10, 2021 2PM-4PM

Subcommittee meeting #1 of the Construction & Demolition Debris Subcommittee (#1-C&D) was convened virtually via Zoom on June 10, 2021 from 2 PM-4 PM, CST. Committee membership and attendance for #1-C&D is provided in Table 1.

Table 1. #1 C&D Subcommittee Membership and Attendance

Name	Company	Attended 6/10/21
Becky Soglin	Johnson County Planning, Development and Sustainability	Present
Tim Ruth	Home Builders Association of Iowa and Iowa City	Present
Brian Seals	Waste Commission of Scott County	Present
Hal Morton	Des Moines County Regional Solid Waste Commission	Present
Seth Shannon	SCHEMMER	Absent
Richard Graves	NA	Absent
Damion Sadd	Continental Cement Co.	Present
Kerry Dixon	Engie North America	Present
Les Stohs	Greater Des Moines Habitat for Humanity/Re-Store	Present
GC/CM	TBD	NA
Nick Wylie	J Pettiecord	Present
Cindy Kuhn	Habitat for Humanity Restore in QCA	Present
Reid Bermel	DNR Internal SMM Team	Present
Laurie Rasmus	DNR Internal SMM Team	Present
Jeff Fiagle	DNR Internal SMM Team	Present
Tom Anderson	DNR Internal SMM Team	Present
Jennifer Wright	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-C&D Summary

The meeting began with introductions of the Iowa Department of Natural Resources (DNR) staff and their role, the consulting team, and the Construction & Demolition Debris Subcommittee members. Two subcommittee members were absent as noted in Table 1. 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 #1-C&D 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. Upon reconvening, subcommittee members shared their perspectives on issues, challenges, and opportunities in the area of construction & demolition debris.

Discussion on challenges and opportunities included the following:

TREATED AND UNTREATED WOOD

- Untreated and treated wood are one of the hardest materials for which to find a viable end market.
- Unpainted/untreated lumber accepted with brush for grinding but it typically comes in with plywood, OSB, etc. and it is hard to do quality control.
- Wood chips are mixed with brush (mostly pallets) and used on site once they are ground
- Previously made available to public but emerald ash borer and overspray issue made it questionable to provide product to the public. Now use it all on site for erosion control, etc. but if larger quantities came in would need to sell to public again.
- Tip fee at some landfills for clean wood is a lower rate than MSW.
- Habitat for Humanity used to have dumpsters sitting on jobsites but no longer do this as they were getting other waste from the neighborhood put in them.
- Construction debris produced goes back to main office (East Euclid Restore) and into a dumpster there for landfill disposal.
- Had a wood dumpster on site for some period of time but it is no longer there, not sure why.
- Treated wood difficult because you cannot make mulch out of it.
- Untreated wood (pallets) ground and used in erosion control socks on DOT and private projects.
- 2020 Derecho ground cover well over 1 million cubic yards of material
 - Coloring mulch and working on compost
- There have been previous markets for untreated wood but those have gone away.
- There are opportunities for clean/used wood with current lumber prices that could be developed for small quantities to go through buy/sell/trade or Restore settings, but not in public landfill/recycling entities.

ROOF SHINGLES

- Asphalt shingles challenge is oil is down in price and it is a hassle for asphalt plants to use it so not much motivation.
 - One landfill has probably 100,000 tons that needs to find a home
- Scott County Landfill has had a successful roofing shingle recycling program since 2004 but synthetics in felt paper could be a barrier in getting clean shingles.

ASPHALT PAVING

- Easiest materials to get rid of are clean asphalt and concrete going to a local Manatts plant for free.
- Asphalt paving is being crushed with concrete, which cannot be sold as modified subbase for DOT but is great for parking lots, keeping dust down.
- Asphalt paving, bricks, rocks, and concrete markets are established locally so do not see much at the landfill.

BRICKS, ROCK, CONCRETE

- Easiest materials to get rid of are clean asphalt and concrete going to a local Manatts plant for free.
- Bricks are tough to recycle but labor intensive and labor market is tight right now and it is dangerous which makes workers compensation insurance rates go up.
- Asphalt paving, bricks, rocks, and concrete are established locally so do not see much at the landfill.

DRYWALL, PLASTER, GYPSUM BOARD

- Drywall/plaster/gypsum board can be a challenge to find viable end markets for.
- Drywall/plaster/gypsum definitely cheaper to load into a truck and take to the landfill.
- Drywall produces hydrogen sulfide when mixed with moisture and organics, which is a challenge in landfills.
- US Gypsum will take drywall but they prefer paper out because they use the inside but the process is very labor intensive.
- While US Gypsum will take the material, the virgin material is better for their use.

GLASS

- Challenge recycling glass (windowpane) so it ends up being thrown away – are there any good alternatives?
- Glass pulverized at a landfill in Burlington, Iowa but not centrally located within the state – can do panes but have to separate them from frames and avoiding more modern glass with plastic layer in the middle, wire mesh, or light builds but ceramic tile is okay – and use onsite for landfill activities.
- Some glass that is received is bottle glass and sparkly that can be sold for top dressing in landscaping once pulverized.
 - Use cat litter buckets to sell smaller quantities or in bulk
- Opportunities for other landfills to pulverize glass?
- Pulverizing on site avoids transportation and sorting colored glass.

GENERAL

- Armstrong will take commercial ceiling tiles if you can verify they are lead and asbestos free.
- Carpet had become an industry because they have realized they can control their cost by recycling their own carpet on a commercial sector base.
- Scott County did carpet recycling for a while but the market went away.

- EDPM rolls can be easy to sell in strips/rolls, however the problem for state institutions is that if the contractor is not the one to get rid of a material it becomes an asset and has to go through asset recovery.
- Overall, dealing with construction waste from the state institution structure is a challenge due to needing to carry all the liability insurance on whomever comes in to harvest so Habitat for Humanity or similar entities cannot come in and clean out a building
- Put recycling/reuse requirements in specifications but no guarantee on where materials end up unless it is a LEED certified building.
- State universities have a 75% recycle goal for C&D waste in specifications – easier to do with larger buildings/projects than smaller office remodels where contractors are not used to the process.
- Would be much easier to recycle C&D materials if there were regional sorting centers.
- Smaller contractors find it is cheaper to take materials to the landfill than to recycle.
- Discussion on what if any permits are required for C&D recycling; since it is recycling, likely no permit is required.
- Can find end uses for metals and used to be able to for wood, although not any more but glass has never been an option.
- ReStore ends up with materials that don't work when they were told they did, or they experience illegal dumping so they do sorting/recycling for higher value/useable materials, such as metal, etc., with remainder landfilled.
- The concept of recycling is great but there has to be a cost-benefit analysis done because if a demo contractor is required to recycle everything the cost is exponentially more.
- With the challenges in handling these materials, are there alternatives to C&D materials that can be used to avoid getting to the end life with a lack of viable management options?
- Challenge with the C&D items on the list is if there is a market for it and it makes economic sense, landfills want to divert as much as they can from their facility and landfilling, but there is often not markets or markets change.
- Materials need to be sorted prior to coming to the landfill – too labor intensive to be done at landfills.
- Landfill wants to divert as much as they can but cognizant of making changes that affect staff and staff time and the education when programs stop and start – did vinyl siding for a period of time but the market went away which causes frustration with customers not knowing what is accepted or not.
- Continuity is a big deal, especially with public facilities so programs need to have longevity.
- Public education on intermittent programs is challenging.

B. Recommendations

Based on the discussion during the #1-C&D meeting, the following materials have been recommended to be further evaluated for increased sustainability options:

- Interior building components
- Roofing materials (non-shingle) and roof shingles
- Drywall, plaster, gypsum board
- Treated wood and untreated wood

A second tier of materials was identified for future considerations including:

- Glass panes
- Vinyl siding
- Carpet

C. Research Request List

Through the discussions and in follow up discussions, various topics have been identified for further research. These are provided below, divided by responsibility.

Research to be Completed by Others

- What types of programs exist in other states to manage C&D Debris? Are they public or private programs? Are there multiple programs within a state or city? How is this managed in rural areas?
- Are there viable alternatives to these materials for construction that have a market for an end life?
- Are there long-term markets in other states for these materials?
- How is education handled when markets change?
- How are barriers overcome for removing interior building components – labor need, insurance, time, markets, etc.?
- Are there end markets for asphalt shingles that are reliable besides grinding and paving? Success of this program has varied across the state.
- Are there successful programs for drywall/plaster/gypsum board? What makes them successful? Where are they located? Is it a model that could be duplicated?
- What solutions/programs are available for untreated wood? Details? Program/infrastructure need? Viable end markets?
- What solutions/programs are available for treated wood? Details? Program/infrastructure need? Viable end markets?

D. Other Notes

Other items of note from the #1-C&D meeting are as follows:

- Brian Seals, Waste Commission of Scott County, accepted the role of Subcommittee Chair and will represent the Construction & Demolition Debris subcommittee at Stakeholder Meeting #2 in September.
- Next Construction & Demolition Debris subcommittee meeting dates and times are:
 - July 29, 2021, 2 PM – 4 PM CST
 - September 2, 2021, 2 PM – 4 PM 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





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Construction and Demolition Debris Subcommittee
Meeting #1
June 10, 2021



WELCOME

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Agenda

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

Introductions



Committee Introductions

Name/Nickname

Organization

Your Experience with C&D Debris

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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

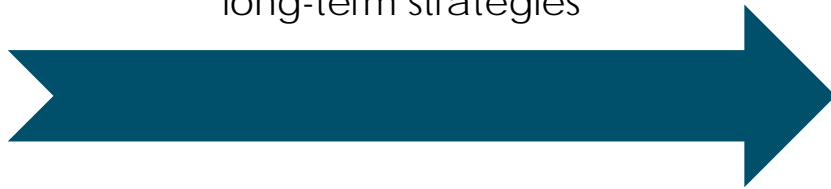
Director	Expresser
<ul style="list-style-type: none"> • Goal oriented • Tells it like it is • Makes decisions quickly • Always on the go • Speaks crisply • May be insensitive, intimidating 	<ul style="list-style-type: none"> • People oriented • Animated, easily excited • Makes expressive gestures • Entertaining • 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

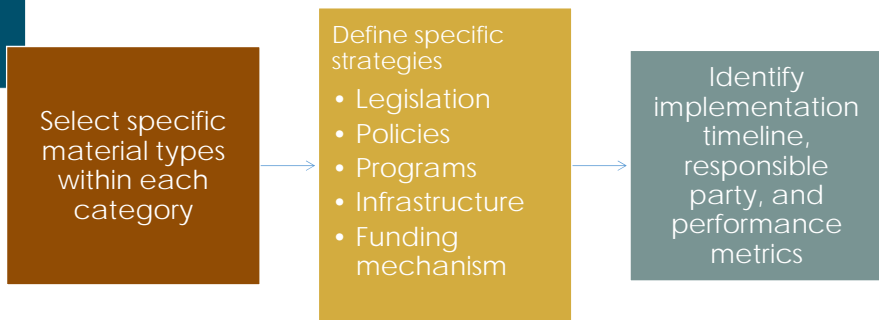


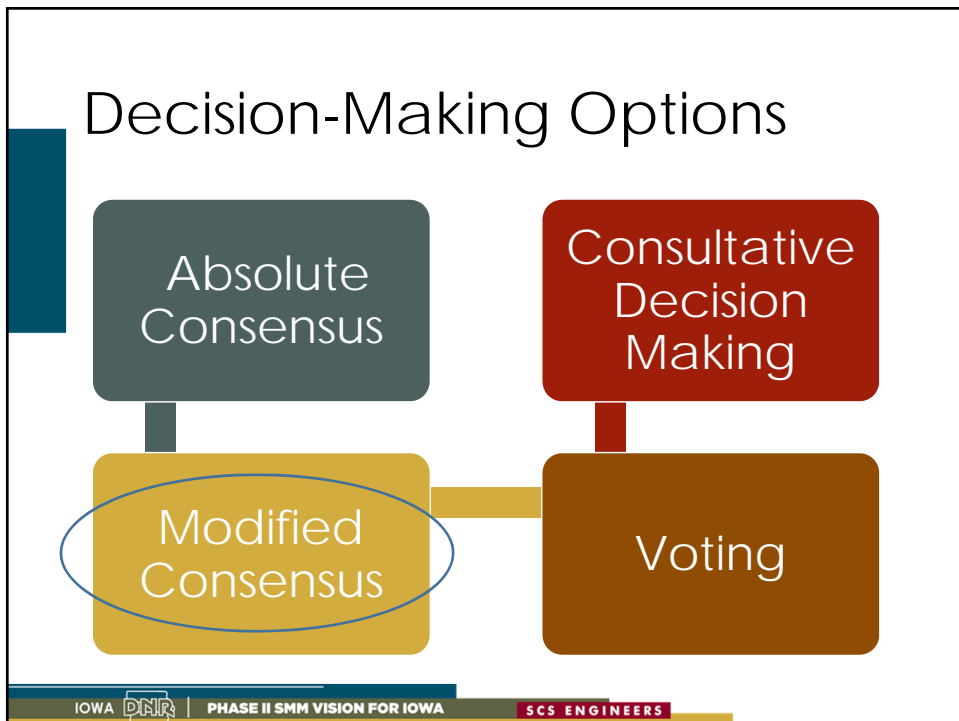
Goal

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 29
 - September 2
 - 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

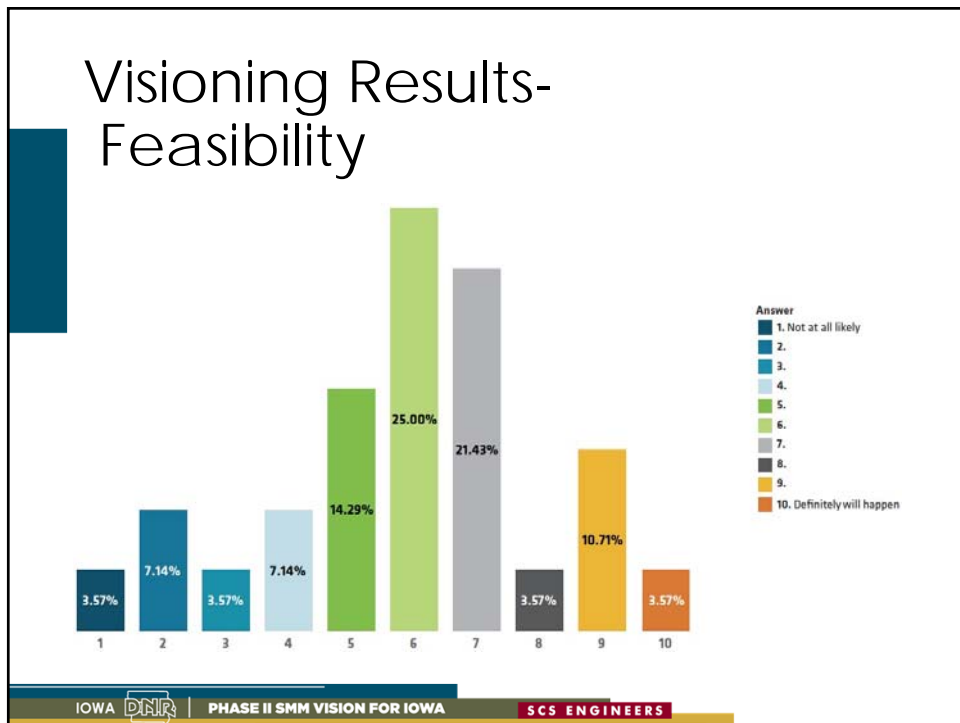
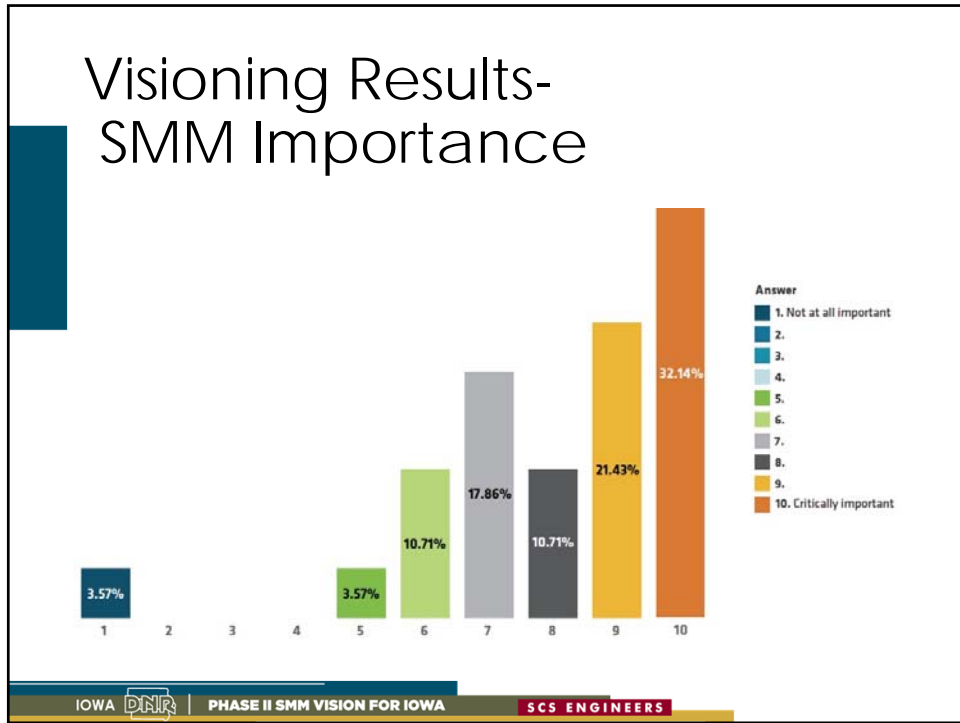


Global raw material use rose during the 20th century at about twice the rate of population growth



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



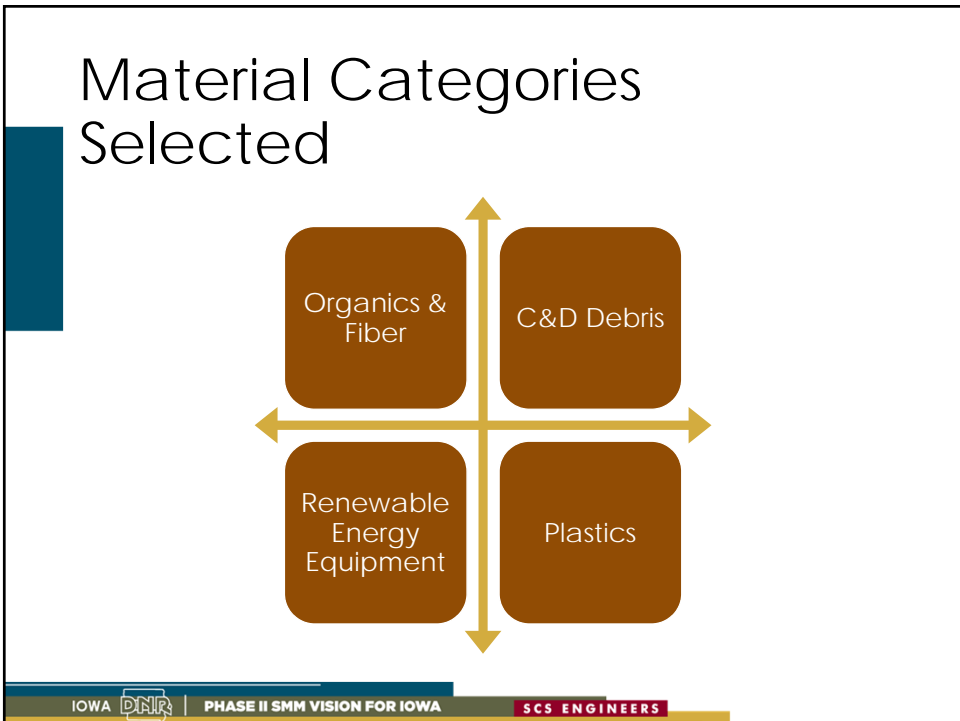
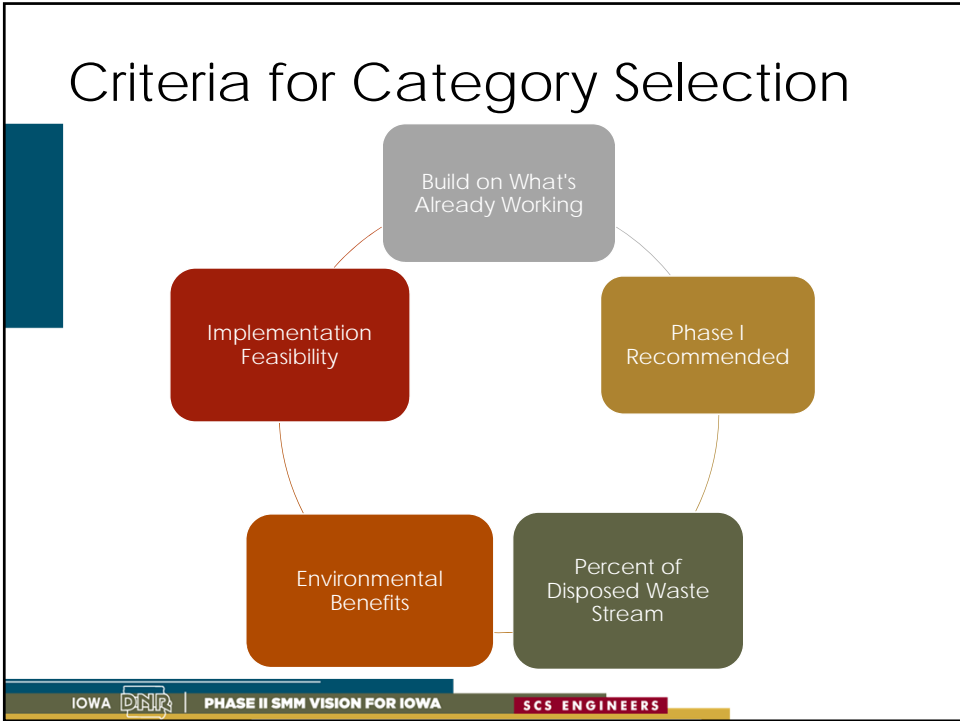


Phase II

- Began in 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

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



Category Material Types

C&D Debris

- Treated Wood
- Untreated Wood
- Roof Shingles
- Asphalt Paving
- Bricks, Rocks, Concrete
- Drywall, Plaster, Gypsum Board



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

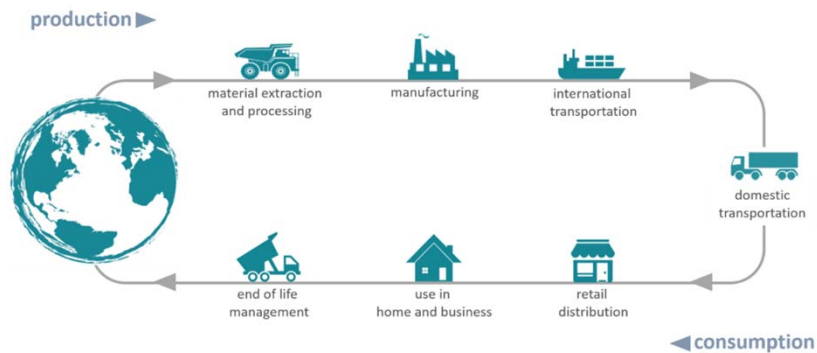
Background

- 5.4% of disposed waste stream
- Construction industry = 5% of employment
 - Trade contractors
 - Building construction
 - Civil and heavy engineering construction
 - Employment has decreased recently
- Some construction material manufacturing
- No alternative building material manufacturing
- LEED certified buildings: UI 15 LEED Building

Background

- DNR Derelict Building Program
 - 3rd highest concentration of dilapidated housing stock
 - 50% of rural Iowa homes meet criteria for dilapidated housing
- Correll Contractors - Aggregate recyclers
- Salvage Barn - Deconstruction and Reuse

Life Cycle Assessment



LCA of Buildings-Stages

- Material Manufacturing
- Construction
- Use and Maintenance
- End of Life

GHG Emissions

- Buildings account for 39 percent of global GHG emissions
 - 28% from operations
 - 11% from building materials and construction
- Structural systems comprise up to 80% of a building's carbon emissions

Construction Materials

Traditional Materials

- Concrete
- Steel

- Synthetic insulation

Replacements

- Green concrete
- Recycled steel
- Cross-laminated timber
- Low-carbon insulation
- Bio-insulation

Demolition and Deconstruction

- Using existing infrastructure via redevelopment decreases emissions
- Design for material efficiency
- Select materials for waste reduction and reuse



BREAK (10 Minutes)

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Discussion

Your perspective on C&D Debris

Challenges

- Treated Wood
- Untreated Wood
- Roof Shingles
- Asphalt Paving

Opportunities

- Bricks, Rocks, Concrete
- Drywall, Plaster, Gypsum Board

Material types to add?

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Prioritization Mapping

