

PRODUCT STEWARDSHIP DECISION MATRIX



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Completed by the Statewide Product
Stewardship Committee

Summary of the development of a system to identify which products are best suited for product stewardship in Minnesota and the results of testing that system.

EXECUTIVE SUMMARY

Product Stewardship is a waste management technique that can help address toxic and problem materials that end up in the waste stream. This report details a process that was developed to collect information from Minnesota solid waste professionals in order to identify and prioritize possible products for product stewardship efforts.

There are many hazardous wastes and problem materials that cause environmental and waste management problems in Minnesota. Collection programs and management methods for waste vary across the state resulting in differing priorities for management of hazardous wastes and problem materials. Toxic products with human health concerns tend to have the most priority because these products cause harm and must be managed with care, yet there are many non-toxic products that cause problems within the waste management system.

In order to address these concerns, it was determined that a prioritization process was necessary in order to arrive at a consensus within Minnesota's public solid waste community, on a shortened list of products that would be feasible to work towards a product stewardship effort.

The process identified was a Decision Matrix. The Matrix was developed to encompass issues identified in many earlier product stewardship efforts from across the country, while also addressing how to prioritize products which was not always a part of the earlier efforts. Once the Matrix was finalized, work groups were set up across the state, with members selected based on interest in product stewardship and an understanding of solid waste management in order to work through the Matrix process. This process consisted of two surveys and three work group sessions.

The top products identified for product stewardship efforts, out of this Matrix process by the work groups were:

1. Electronics
2. Mercury Lamps
3. Pharmaceuticals
4. Sharps
5. Electronics Non CED

The following report details how the Matrix Process was set up, who participated, and how they decided on these five products as the top products to work towards a product stewardship solution within the State of Minnesota.

BACKGROUND

The Minnesota Product Stewardship Council coordinated the creation of a sub-committee, based on a suggestion in the Minnesota Pollution Control Agency's (MPCA) 2015 Solid Waste Policy Report as well as a Product Stewardship session at the 2016 Solid Waste Administrators Association (SWAA) Conference. The committee, called the Statewide Product Stewardship Committee¹ (SPSC) was formed to develop a process that would allow Minnesota governmental units to:

1. Determine a system to identify which products are best suited for product stewardship.
2. Define a framework for product stewardship programs that will work for local government while collaborating with key partners.
3. Be proactive on product stewardship initiatives which may include current materials and future identified materials.

To address the first committee objective, the committee developed an evaluation tool - the Decision Matrix, to guide the determination of priorities for current and future product stewardship initiatives in Minnesota.

A Decision Matrix is a qualitative technique frequently used in engineering, to evaluate and prioritize a list of options. Its advantage is that subjective opinions about one alternative versus another can be made more objective. The scope of the evaluation for this effort, was limited to managing a product at the end of its useful life. The Matrix includes:

1. Criteria by which to evaluate each product
2. Weighting of each criteria (by greatest importance, mid-range importance, least importance)
3. Ranking of each product (by greatest importance, mid-range importance, least importance, and no importance)

The Matrix is a spreadsheet: down one side is the list of products currently considered to be candidates for product stewardship, and across the top are the series of criteria that ask critical questions that these products are judged against. The Criteria are weighted according to their importance in a product stewardship effort. The products and criteria were gleaned by the committee from numerous product stewardship reports, papers and articles (see APPENDIX A), which identified products and criteria, but offered no system for prioritization, whereas the Matrix offers a way.

The Criteria by which possible product stewardship products are judged against are:

- Negative human and environmental health impacts
- Generation and percentage of overall waste stream
- Cost
- Abandonment or dumping issues
- Problem for waste processing and management facilities
- Recyclability

¹ Lisa Thibodeau, Chisago County; John Helmers, Olmsted County and SWAA; Leslie Wilson, Carver County, Metro Area and HHW RPM's; Julie Moore, city of Shorewood and ARM; Mallory Anderson, Hennepin County and Metro Area; and Tina Patton, John Gilkeson, and Amanda Cotton, MPCA

- Waste prevention or reparability
- End markets available
- Collection Infrastructure
- Other programs to model after
- Awareness or political will to support a product stewardship effort
- Local government interest from commissioners and boards

After the Matrix was developed, the SPSC members individually scored products through the Matrix, creating their own priority list. They then came together and worked through the Matrix as a group, comparing and discussing, and coming up with a group ranking. When rating products individually the user may not feel knowledgeable in all areas, but in the group setting - some will be experts in one area and some in other areas. The sharing of information is the real value of the Matrix, and consensus can be forged with this discussion. The product with the highest score may not be the one ultimately chosen, but the discussion will lead to more informed decisions across the board going forward.

After the SPSC completed this exercise, it was determined that the process should be taken out to a larger group in order to test and improve the process.

EXTENDED WORK GROUPS

Before the roll-out to the larger group, it was determined by the SPSC that the Matrix evaluation process should be simplified, and so the Matrix spreadsheet was transformed into a survey monkey and the number of products reviewed was limited².

The SPSC selected public sector professionals for the larger Extended Work Groups, inviting those engaged in solid waste issues across the state of Minnesota, and who had interest in product stewardship. The goal was to have a diverse group from around the state with varying perspectives. Three work groups were set up, and invited to each group was someone from each of the following entities: MPCA, county, city, and a nonprofit. Conversation is easiest in small groups, therefore seven to ten people were recruited for each group. City and nonprofit representatives were challenging to recruit for various reasons and were missing from all but one of the work groups.

Figure 1 represents the locations of Counties who took part in the Extended Work Groups.

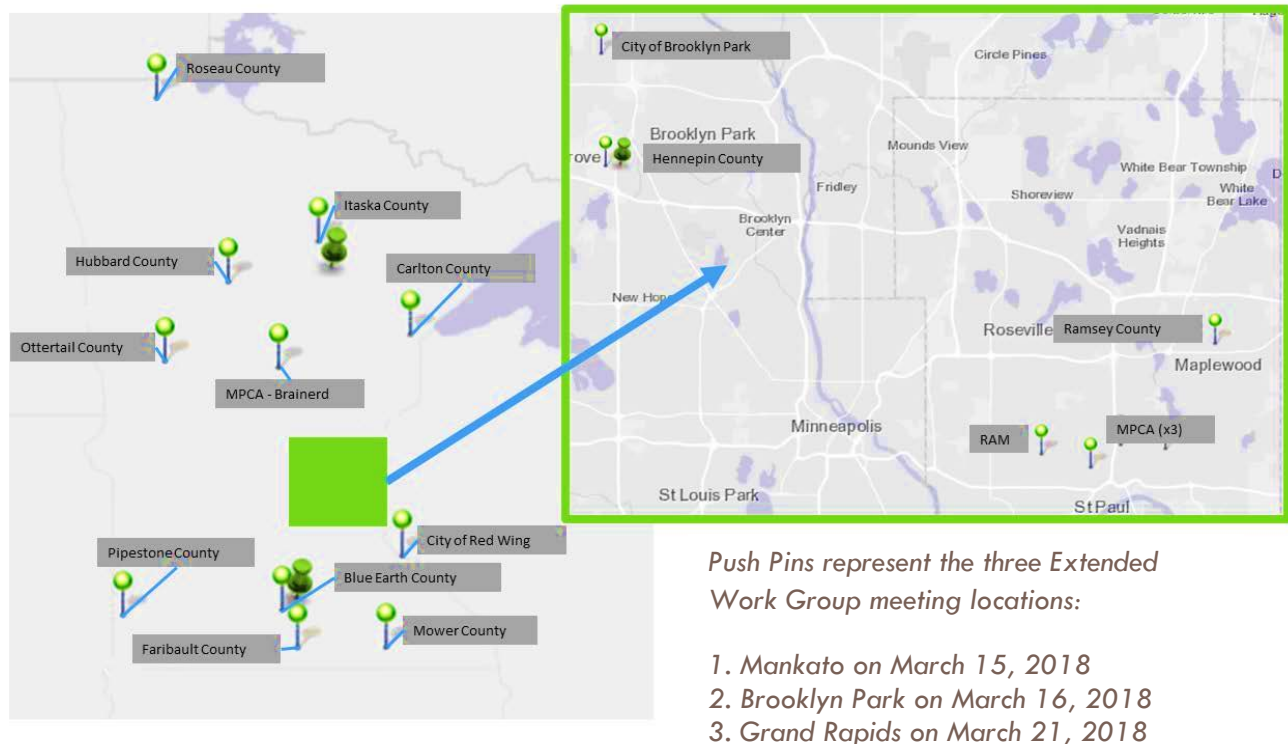


Figure 1. Map of pins, which represent counties who participated in the Extended Work Groups

² Additional products recommended by Extended Work Group participants to be considered in the future: other problematic plastics, Plastics 3-7, Styrofoam; C&D, clean wood (demo), shingles; Tires; Compost, food waste; Plastic bags/film; Furniture; Industrial Waste; Automotive waste; Aerosol paint cans; Fire extinguishers; Li-Po and button batteries

Process for Extended Work Groups – the First Matrix Survey

The Extended Work Group participants were asked to call in on Tuesday, February 27 at either 10am or 3pm to receive a walk-through of the survey. The call was limited to 20 minutes and covered:

- basic concept and design of the survey (decision matrix)
- how criteria were ranked and weighted
- how to input answers for the Extended Work Group meetings in March 2018

Participants were then asked to review a background document to explain the methodology of the process, and to complete the Matrix survey³ to the best of their knowledge prior to the work group meeting.

These results were stored in survey monkey and Mallory Anderson applied the weighting to the scores prior to the meetings. These scores were then provided to the Extended Work Groups for discussion at the group review meeting (see APPENDIX B).

During the group review sessions, a facilitated conversation walked through each product and the criteria they were ranked against, to allow for a group discussion of each person's rationale for the scores. The group discussion appeared to be one of the most valuable parts of the process, as there were different experts in the room with varying background experiences with the products. During the discussion, the participants with more experience with a product could share, and thus the group was educated on the list of products by their peers, and was able to make a more informed new group score at the end of each session.

Not all work group participants participated in the entire process as seen in Table 1. To do all the tasks an estimated time commitment was between 5-7 hours including:

- Introduction call
- Reviewing documents
- Taking the survey
- Attending the meeting

Table 1. Participation by extended work group

	Attended and completed survey	Completed second survey	Total invited		
				Attended work group meeting only	Completed survey only
South Mankato	4	5	7	6	4
Central Brooklyn Park	6	7	10	7	7
North Grand Rapids	3	6	10	4	7

³ Both surveys remain open. The original is at: <https://www.surveymonkey.com/r/PSMatrix> and the second survey is available at: <https://www.surveymonkey.com/r/PSmatrix2>

Second Matrix Survey

After the three tandem Extended Work Group sessions were completed, a second Matrix survey was sent out to all participants to further refine the Matrix process based on feedback provided by the extended work groups (see APPENDIX C). Based on feedback, the Matrix was edited to include clarity through providing product definitions (see APPENDIX D) and improvement of question wording (see APPENDIX E). In addition, to address the concern that toxicity was dominating the score over potential feasibility, the criteria questions were split into the following two groups to balance the weighting:

1. Criteria questions related to the impact of the problem material or the toxicity
2. Criteria questions related to the feasibility and momentum of a product stewardship effort

In the initial Matrix survey of individual work group participants: electronics, pharmaceuticals, sharps, household hazardous wastes, and mercury lamps came out as the top five, and you'll see that in the second Matrix survey after the work group session discussions, the same five have again been identified as priority.

Four Takeaways from the Extended Work Groups

The Extended Work Group meetings were hosted to cover the southern, metro, and northern parts of the State: Mankato, Brooklyn Park and Grand Rapids. The following takeaways from the meetings were noted:

1. People use filters when completing the survey that impacted the results.

The following were deemed the most important:

- Local management of product waste varies for most products
- Interpretation of law varies
- Collection and processing costs and options vary for most product(s)
- Level of processing will impact answers (i.e.: incineration vs. landfill impacts cost and management options).

Regional differences make consensus across the state a challenge. For example, in the southern part of the state some counties and cities have collection of sharps for the general public (including at a grocery store), where in other parts of the state collection is non-existent. For electronics there is high density of collection sites both for-profit and public sites in the metro, but out-of-state drop offs are few and far between. Mercury lamps have high levels of cost effective or free collection in certain areas of the State, and this depletes political will to help other areas who do not benefit from this program.

2. Criteria may too strongly reduce the value of “momentum” for some products

Certain wastes scored low despite current passion. Voluntary programs with a lot of steam like agricultural wrap and boat wrap collection cannot compete against an expensive, potentially hazardous, and challenging waste streams like electronics. Despite the fact that the criteria are set to prioritize based on “facts” it was questioned if there was a strong enough emphasis on political will and stakeholder momentum in the Matrix.

Therefore, the criteria question groups were split into two, a problem/toxicity section, and a feasibility/momentum section.

3. Provide a consistent and clear definition of product being examined

The primary battery definition was unclear and interpreted many different ways. Are “electronics” all electronics or just electronics covered under the Electronics Recycling Act? Are references for singular products or groups of similar products? Questions such as these were not answered prior to the participants taking the survey and left participants to come up with their own definitions resulting in inconsistent rankings. Therefore a definitions section was added to the Matrix for the second survey.

4. The process needs to be consistent or the rankings are affected

Conversation and group discussion is critical to the process however it is difficult to arrange the group. There was a concern that those who took the survey but did not participate in the work group make the survey results invalid or sway the group ranking. See tables on Page 9 for example at the Brooklyn Park work group pharmaceuticals were the second highest ranking product and after the work group they dropped out of the top 6. Thus, working through the whole matrix process was critical, even though it takes considerable time to do it.

Despite being some of the highest ranked products, the categories of Electronics, household hazardous wastes, pesticides, and mercury lamps caused confusion for participants when completing the Matrix, due to the many sub-products within these categories. Discussion of each of these categories and those removed is below.

Retained Product Categories

Electronics-CED

Some electronics are covered for collection by the Electronics Recycling Act (referred to as covered electronics) with an existing policy and framework, causing confusion during the Matrix review as to if the focus was solely on covered electronics or all electronics. Therefore, electronics were split into two groups, with the addition of all non-CED electronics being ranked in the Matrix as well as covered electronics.

Despite already having policy and collection methods, it was clear that this product should remain on the Matrix list as many Counties still want to see benefits from the current policy before any new effort begins.

Minnesota is one of many states with an electronics recycling law. Televisions were banned from landfills in 2006, and the Minnesota's Electronics Recycling Act followed in 2007. Through this law, over 30 million pounds of e-waste is kept out of Minnesota landfills every year. Lead and other hazardous materials contained in e-waste are recycled. Minnesota has one of the highest e-waste recycling rates in the nation and the Minnesota's Electronics Recycling Act focuses on households, not businesses. At first manufacturers shared the costs, however, each year since, manufacturers have been paying a smaller share of the total costs while Minnesota taxpayers are paying the difference as electronics recycling is not free. CRT recycling has a large negative market value. Costs of recycling CRTs are increasing, while the weight of e-waste that manufacturers are responsible for recycling is decreasing.

There are 21 states that have a product stewardship law on electronics: Connecticut, Michigan, Hawaii, Illinois, Indiana, Maine, Maryland, Missouri, New Jersey, New York, North Carolina, Oregon, Rhode Island, Texas, Vermont, South Carolina, Virginia, Washington, West Virginia, and Wisconsin.

Electronics Non CED

Other miscellaneous electronics not included in CEDs but may include communication equipment (telephones, office equipment, fax machines, stereo and audio equipment), circuit board items or “anything” with a cord. Definition was modified from the State Electronics Contract H-90.

Mercury lamps: This category could change to include all lighting

Mercury Lamps was another highly ranked category, but due to its declining market share, there is a potential need to re-define this category as “lamps” to more broadly include LEDs as well as future lighting products.

Compact fluorescent lights (CFLs) which were an early alternative to incandescent bulbs have mercury in them making them unsafe when broken in a home or when thrown away. Thus, they have been banned from being put in the trash or recycling at home or at work. There is a required collection system through any public utility that provides electric service to 200,000 or more customers, which at this time only applies to Xcel Energy in the eastern part of the State of Minnesota. Many hardware stores have opted to collect CFLs as well as many counties in this area of the state. Since this portion of the state has management for this product, there is limited political capital to push this product forward because of fear they would lose existing benefits.

Pharmaceuticals

Discarded pharmaceuticals are both a human health and environmental concern and should be properly managed to reduce this risk. At this time only law enforcement agencies operated by government agencies and pharmacies licensed with the Minnesota Board of Pharmacy and authorized by the Drug Enforcement Administration can collect unwanted pharmaceuticals. The current collection sites cannot accept sharps with these items and may not be able to accept inhalers or liquids. Drugs disposed of range from out of date over-the-counter products, to controlled substances that require a prescription and can be dangerous in the wrong hands or when not brought to a collection site where they are then taken to be destroyed.

Four states have laws: California, Massachusetts, New York, and Washington.

Sharps

Sharps are syringes, needles, and lancets used to self-inject medication and are generated in high quantities and cause harm to others when they are not properly disposed of. There are limited collection programs at clinics and hospitals and many people are left to dispose of sharps in a heavy duty plastic container with the cap screwed on and clearly labeled with “Do Not Recycle: Household Sharps”. Sharps continue to cause a health risk to sanitation workers and at disposal and recycling facilities when people have not understood how to properly dispose of them.

Only California has a law that includes sharp collection.

Removed Product Categories

Household hazardous waste

Household hazardous wastes (HHW) have a very well established collection system in Minnesota. Despite the toxicity of these products and the high ranking in the Matrix, the complexity of approaching a category as broad and complex as HHW made it a non-starter with many. Further, collection cost of paint is covered through Paint Care, which is considered HHW. It was suggested that this category be broken out to look at individual products in the future.

Pesticides

Pesticides are already largely managed by the Minnesota Department of Agriculture where funding covers all disposal cost for local government collection centers.

The average of scores from the work groups are below, if pesticides and HHW are removed the resulting list or priority products are:

Matrix Results

Table 1 Scores from initial individual surveys pre-Extended Work Groups

Electronics	353
Pharmaceuticals	318
Sharps	249
HHW	211
Mercury Lamps	187
Textiles	176
Mattresses	172
Pesticides	171
Solar Panels	163
One pound propane tanks (cylinders)	160
Ag/Boat Wrap	147
Two-Part Foamers	97
Electronics (miscellaneous not covered)	66
Primary batteries	65
Carpet	35

Table 2 Scores from post-Extended Work Group second surveys

	Feasibility total	Priority total	TOTAL
HHW	94	278	371
Electronics	120	239	359
Mercury Lamps	103	218	321
Pharmaceuticals	97	200	297
Sharps	102	186	288
Pesticides	71	193	264
Electronics Non CED	85	129	214
Ag/Boat wrap	83	116	199
Mattresses	76	110	186
Two-Part Foamers	34	152	186
Batteries-primary cell	79	98	177
One Pound Propane Tanks (cylinder)	53	114	166
Carpet	63	85	148
Solar Panels	57	88	145
Textiles	51	56	106

RESULTS AND NEXT STEPS

SWAA has initiated a subcommittee to investigate needs for changes to the Electronics Recycling Act, and will be working with the MPCA to determine how and when changes will be made.

The results of this effort will be brought to the SWAA executive board to determine if there is further outreach to be done within any of the SWAA districts, or if they can agree that these priorities represent the needs of the counties within their district. If any of the representatives on the SWAA executive board feel further outreach should be completed, members of the SPSC will present the results and facilitate a discussion on priorities with those counties.

Once that is complete, the SPSC will outline a framework and begin research into two or more of the products identified as priority. This will be done in concert with the MPCA, and with the intention of developing a product stewardship program to improve management of these products.

In the future, priorities will be re-evaluated to ensure any items of emerging concern are considered. A mechanism to define and categorize what products should be evaluated will be developed, and a way to include new products or remove those which are no longer deemed relevant.

APPENDIX A

References for matrix

2015 Solid Waste Policy Report, MPCA, January 2016

ASTSWMO Product Stewardship Framework Policy Document, October 28, 2009

ASTSWMO Product Stewardship Program Evaluation Tool, September 2014

Advancing Local Government's Interests Through EPR for Packaging, Upstream, November 2014

Appendix A, Framework Principles for Product Stewardship Policy, Northwest Product Stewardship Council, May 19, 2008

Attachment 1: Overall Framework for an Extended Producer Responsibility System in California, California Integrated Waste Management Board, January 23, 2008 Board Meeting

Attachment 3: Analysis of Priority Product Selection, California Integrated Waste Management Board, September 19, 2007 Board Meeting

CalRecycle Extended Producer Responsibility (EPR) Legislation Checklist, draft February 2016

Connecticut Extended Producer Responsibility Program Evaluation: Summary and Recommendations, Product Stewardship Institute, October 21, 2016

Design for Environment Incentives: Opportunities within Oregon's Product Stewardship Framework, Oregon Dept. of Environmental Quality /Eco Stewardship Strategies with Rifer Environmental, March 18, 2009

Extended Producer Responsibility in the United States: Full Speed Ahead?, Jennifer Nash/Christopher Bosso, Mossavar-Rahmani Center for Business & Government - Harvard Kennedy School, May 2013

Producer Responsibility: Overview of Policy Considerations, California Integrated Waste Management Board Background Paper Strategic Policy Committee June 5, 2007

Product Stewardship in the United States: the Changing Policy Landscape and the Roll of Business, Vesela Veleva, Sustainability: Science, Practice, & Policy, Wall/Winter 2008, volume 4, issue 2

Product Stewardship & Extended Producer Responsibility Towards a Comprehensive Packaging Recycling Strategy for the US, Natural Logic Inc., October 25, 2010

Product Stewardship Recommendations Report, MPCA, January 2009

APPENDIX B

Results from initial survey and work group

Results from the initial surveys and work groups after products were scored individually and averaged and then rescored as a group with a facilitated group discussion.

Averages from all			
Surveys		Work Groups	
Electronics - covered	318	Electronics - covered	353
HHW	296	Pharmaceuticals	318
Pharmaceuticals	274	Sharps	249
Pesticides	232	HHW	212
Mercury Lamps	226	Mercury Lamps	187
Sharps	204	Textiles	176
Ag/Boat Wrap	171	Mattresses	172
Mattresses	161	Pesticides	171
Primary Batteries	161	Solar Panels	163
Solar Panels	144	Propane 1-lb tanks	160
Propane 1-lb tanks	144	Ag/Boat Wrap	147
Textiles	132	Two-part foamers	97
Carpet	128	Electronics – misc	66
Two-part foamers	113	Primary batteries	65
		Carpet	35

Mankato			
Surveys		Work Group	
Pharmaceuticals	256	Electronics	435
Mercury Lamps	238	Pharmaceuticals	397
Electronics	235	Sharps	276
Sharps	219	Mercury Lamps	222
Pesticides	211	Two-Part Foamers	220
HHW	201	Solar Panels	205

Brooklyn Park			
Surveys		Work Group	
Electronics	385	Propane 1-lb tanks	274
Pharmaceuticals	362	HHW	264
HHW	353	Two-Part Foamers	255
Pesticides	264	Electronics - covered	249
Mercury Lamps	237	Ag/Boat Wrap	237
Sharps	223	Sharps	234

Grand Rapids			
Surveys		Work Group	
Electronics	345	Electronics - covered	375
HHW	314	Pharmaceuticals	345
Pharmaceuticals	231	Sharps	237
Pesticides	223	HHW	205
Mercury Lamps	218	Mercury Lamps	154
Primary Batteries	196	Pesticides	150

APPENDIX C

Extended work group Matrix process questions follow-up

Participants were asked the following four questions with the post matrix survey:

Q1: After completing the review of 14 different products, how many would you expect to review in this way in the future? 15 people responded, 1 did not.

Responses: All potential products should be reviewed despite the total (1 or 7% of respondents); 5-9 potential products (5 or 32% of respondents); 10-15 potential products (9 or 60% of respondents).

Q3: Do you have any questions about how products are ranked?

Responses: 15 responded no, and one commented on the need for a “stays the same” relating to the question about generation of the material increasing or decreasing.

Q2: What other products would you have expected to see on this list? 8 people did not respond; 8 wrote in.

Responses: plastic bags/ films, many other problematic plastics, Furniture, Plastics 3-7, C&D, Industrial Waste, Styrofoam, tires, compost, shingles, clean wood (demo), tires, food waste, automotive waste, Aerosol paint cans, Fire extinguishers, Li-Po and button batteries, smoke detectors, fire extinguishers, ALL lighting

Q4: Do you have any concerns about how the criteria are weighted?

Responses: 15 responded no, and one comment on the double-barreled questions (multiple questions built into one).

Post-survey question

Participants were asked the following five questions after the work group meetings to compile feedback on the experience:

Q1: How likely are you to support the matrixes top waste streams?

Responses: were scaled from 0 (unlikely to support) to 100 (strongly support). Of 12 responses the range was 50-100 and the average of all was 83. Leaving the confidence of participants half way between neutral and strongly support.

Q3: Has your mind been changed by this process?

Responses: Of 12 responses only one said no, because of disagreement of provided product categories.

Q2: Could you get your peers to support?

Responses: were scaled from 0 (unlikely to support) to 100 (strongly support). Of 12 responses the range was 50-95 and the average of all was 78. Leaving the confidence of participants half way between neutral and strongly support.

Q4: What worked well with the process?

Responses: Each respondent commented on the success of the conversations among others, and most commented on the two-step process of first completing the survey and then learning from others in the group discussion and coming to a consensus.

Q5: What could be improved in the process?

Responses: three people responded they were unsure or nothing. One commented that no significant change other than reviewing the product categories. Three comments related to questioning the criteria weighting, for example that the criteria doesn't account for "low hanging fruit" where the industry may be more willing to go along with policy or when a policy shows up in the legislator but it's not on our state priority list. Two comments were related to the double-barreled question issue, and the lack of flexibility of the questions to relate to specific products and that some questions didn't make sense if they should add to the score or deduct from a score, for example should having infrastructure in place to manage it a positive or a negative on the score?

APPENDIX D

Definitions of products

Ag/Boat Wrap

Agricultural film plastics, boat storage wrap and greenhouse and ground covers.

Carpet

Carpet means a manufactured article that is used in commercial or residential buildings affixed or placed on the floor or building walking surface as a decorative or functional building interior feature and that is primarily constructed of a top visible surface of synthetic or natural face fibers or yarns or tufts attached to a backing system derived from synthetic or natural materials. Carpet includes, but is not limited to, a commercial or a residential broadloom carpet or modular carpet tiles. Carpet does not include a rug, pad, cushion, or underlayment used in conjunction with, or separately from, a carpet. Definition from California AB 1158.

Electronics

Household-generated video display devices (television or computer monitor that contains a cathode-ray tube or flat-panel screen) and covered electronic devices including computers (including laptops and tablets), computer peripherals, fax machines, DVD players and VCRs covered under Minnesota's E-waste law.

Definition from Minn. Stat. § 115A.1310 – 115A. 1330.

Electronics-Non CED

Other miscellaneous electronics not included in CEDs but may include communication equipment (telephones), office equipment, fax machines, stereo and audio equipment), circuit board items or “anything” with a cord. Definition modified from the State Electronics Contract H-90.

HHW

Waste generated from household activity that exhibits the characteristics of or that is listed as hazardous waste under agency rules, but does not include waste from commercial activities that is generated, stored, or present in a household. (definition from Minn. Stat. § 115A.96, subd. 1 (b)).

Hazardous waste includes materials in solid, semisolid, liquid, or contained gaseous form which because of its quantity, concentration, or chemical, physical, or infectious characteristics may (a) cause or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness; or (b) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed. Categories of hazardous waste materials include, but are not limited to: explosives, flammables, oxidizers, poisons, irritants, and corrosives. Hazardous waste does not include source, special nuclear, or by-product material as defined by the Atomic Energy Act of 1954, as amended. Definition from 116.06, subd. 11.

Mattresses

"Mattress" means any resilient material or combination of materials that is enclosed by ticking, used alone or in combination with other products, and that is intended for or promoted for sleeping upon. "Mattress" includes any foundation and any renovated mattress. "Mattress" does not include any mattress pad, mattress topper, sleeping bag, pillow, car bed, carriage, basket, dressing table, stroller, playpen, infant carrier, lounge pad, crib bumper, liquid or gaseous filled ticking, including any water bed and any air mattress that does not contain upholstery material between the ticking and the mattress core, and any upholstered furniture that does not otherwise contain a detachable mattress. Definition from State of Connecticut House Bill 6437, Public Act No. 13-42.

Mercury Lamps

Electric lamps, bulbs, tubes or other devices sold at retail to provide functional illumination in homes, businesses, and outdoor stationary fixtures to which mercury is intentionally added during the manufacturing process; including, but not limited to, linear fluorescent, compact fluorescent, black light, high-intensity discharge, ultraviolet, and neon lamps. Definition derived from Washington mercury-containing lights PS program and MN statutes.

One Pound Propane Tanks (cylinder)

A small gas cylinder (containing a nominal 1 pound of propane) or tank that is a pressure vessel used to store propane at above atmospheric pressure.

Pesticides

"Agricultural Pesticide" means a pesticide that bears labeling that meets federal worker protection agricultural use requirements established in Code of Federal Regulations, title 40, parts 156 and 170.

"Household Pesticide" means a pesticide that does not bear labeling that meets federal worker protection agricultural use requirements established in Code of Federal Regulations, title 40, parts 156 and 170.

Pharmaceuticals

Prescription drugs that are prepared, compounded, or dispensed by or under the supervision of a pharmacist. Definition derived from Board of Pharmacy statute: Minn. Stat. § 151.01, subd. 2.

Primary Batteries-primary cell

Is a battery that is designed to be used once and discarded, and not recharged with electricity and reused like a secondary cell (rechargeable battery). In general, the electrochemical reaction occurring in the cell is not reversible, rendering the cell unchargeable. As a primary cell is used, chemical reactions in the battery use up the chemicals that generate the power; when they are gone, the battery stops producing electricity and is useless. In contrast, in a secondary cell, the reaction can be reversed by running a current into the cell with a battery charger to recharge it, regenerating the chemical reactants. Definition from Wikipedia.

Sharps

Items that can induce subdermal inoculation of infectious agents, including needles, lancets, scalpel blades, pipettes, and other items derived from human or animal patient care, blood banks, laboratories, mortuaries, research facilities, and industrial operations; and discarded glass or rigid plastic vials containing infectious agents. Definition from Minn. Stat. § 116.76, subd. 18.

Solar Panels

"Solar energy system" or "photovoltaic panel" means any device or combination of devices or elements that rely upon direct sunlight as an energy source for use in the generation of electricity. Photovoltaic panels are those panels, which provide non-thermal generation of electricity from solar energy. Definition derived from Washington and California laws.

Textiles

The term "fiber" or "textile fiber" means a unit of matter which is capable of being spun into a yarn or made into a fabric by bonding or by interlacing in a variety of methods including weaving, knitting, braiding, felting, twisting, or webbing, and which is the basic structural element of textile products.

Two-Part Foamers also known as 2-part Foam Insulation Cylinders

This two-component quick-cure polyurethane foam is used in sealing and insulating architectural structures. Often found as a two part kit, foam systems will begin to expand rapidly upon the chemical interaction of the "A" component (a polymeric isocyanate) and "B" component (a polyol blended) chemicals. This expansion can be up to 3-5 times the dispensed volume. The end result is a semi-rigid foam. Definition from Jamison and JV assistance.

APPENDIX E

Second Survey Content

Introduction

A decision matrix is used to evaluate and prioritize a list of options. Its advantage is that subjective opinions about one alternative versus another can be made more objective. It is a qualitative technique frequently used in engineering, but is being used in this case to evaluate and rank products best suited for a successful product stewardship effort. It is used when:

- A list of options must be narrowed down to one choice
- A decision must be made on the basis of several criteria
- One problem must be selected to work on
- Only one approach can be implemented

The Matrix

The survey is based on a decision matrix spreadsheet where products are individually evaluated against a series of criteria. The criteria ask a question critical to creating a product stewardship effort, and are weighted according to their importance. The end result of the survey will be two scores for each product. One score related to how problematic a product is, and the second score is how much political will and momentum is behind a product that makes it a more feasible candidate to move forward to address with product stewardship.

Each product listed are those currently considered to be candidates for product stewardship initiatives. Each is ranked by the following criteria:

Section 1: Problem material score Toxicity

- Negative human and environmental health impacts
- Generation and percentage of overall waste stream
- Abandoned or dumped
- Problem for waste processing and management facilities
- Recyclability
- Waste prevention or reparability
- An additional, pre-set criteria will be added to everyone's results. The criteria: "Could a stewardship program for the product lead to a reduction in GHG emissions?" which was evaluated by the MPCA.

Section 2: Feasibility and momentum to start or improve product stewardship Collection options for residents

- End markets available
- Other programs to model
- Awareness or political will to address Recyclers or processors who support
- Local government interest from commissioners and boards

What's next?

When rating products you may not feel knowledgeable in all areas, but answer to the best of your knowledge. These scores will be evaluated and will be used to revise and finalize the scores generated in the work groups to select top products.

1. What is your first and last name?
2. Organization

Questions pertaining to the level of concern and degree that a product is problematic in the waste stream.

How toxic is the product or its components if it is mismanaged or improperly disposed of at the end-of-life of the product?

- Highly toxic [9]
- Toxic [3]
- Low levels of toxicity [1]
- Nontoxic [0]

Are there negative human health impacts and environmental health impacts from the product during use and end of life if improperly managed?

- Yes [9]
- Potential impacts [3]
- Limited or unlikely impacts [1]
- No impact [0]

Considering the overall waste stream, is there increasing generation of this product in the waste stream?

- Increasing rapidly [9]
- Increasing [3]
- Decreasing [1]
- Decreasing rapidly [0]

How expensive is this product for a County to manage considering the labor cost of handling, processing, storage, shipment, and disposal or recycling cost

- Very costly [9]
- Costly [3]
- Affordable cost [1]
- No cost [0]
- We do not collect it [0]

Is this product frequently “dumped” or “abandoned” whether it be in ditches or at commercial properties?

- Yes [9]
- Sometimes [3]
- Rarely [1]
- No [0]

Are you aware of the product being problematic for material recovery facilities, and is it a problem at landfills and waste to energy facilities?

- Problematic and banned [9]
- Problematic, but not banned [3]
- A problem for one, but not all [1]
- Not a problem [0]

Could this product be recycled at higher volumes or is it being recycled in other places of the country (or in other countries) that you are aware of?

- Yes [9]
- Limited [3]
- Unlikely [1]
- None [0]

What is the potential for feasible waste reduction or reuse of this product, for example, can it be repaired or easily prevented by consumers who understood its impacts?

- Yes [9]
- Limited [3]
- Unlikely [1]
- None [0]

Questions pertaining to how feasible it is to address the product and what the current environment for better managing the product.

To what degree are there collection options for the product(s)?

- Poor or no infrastructure [9]
- Limited and barely available [3]
- Available, but limited [1]
- Many options [0]

Are there stable and diverse end markets for product or components or a proper end of life management option?

- Many options [9]
- Available, but limited [3]
- Limited and barely available [1]
- Poor or no infrastructure [0]

Are there models from other Counties, States, or Countries that you could use in your programs to promote better collection or product stewardship of this product?

- Yes [9]
- Limited [3]
- Unlikely [1]
- None [0]

Is the product featured in local media, community associations, advisory councils, or environmental groups as a product of concern that would lead you to believe there is public interest in improved management of the product?

- Yes, it's a hot topic [9]
- Yes, but not recently [3]
- Rarely [1]
- None [0]

Product stewardship decision matrix

Are there recyclers or manufacturers that are going above and beyond to manage this product, and could that be used to build out improved collection or product stewardship for your County or organization?

- Yes [9]
- Limited [3]
- Unlikely [1]
- None [0]

Consider existing interest at the different governmental levels, the multitude of issues managed by Counties and the legislator, do you believe you could make a strong case to prioritize this product to be considered for product stewardship?

- Yes [9]
 - Limited [3]
 - Unlikely [1]
 - None [0]
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