Packaging Extended Producer Responsibility (EPR) Advisory Board

Monday, November 2, 2026

1:00 p.m. - 4:30 p.m. CT

MS Teams | **Phone conference ID: 414 815 001#** | **Call in (audio only) +1 651-395-7448**

Meeting Location: Room 100, MPCA St Paul Offices, 520 Lafayette Road North, St. Paul, MN 55155

If attending in person, RSVP to packaging.mpca@state.mn.us by noon CT on Wednesday, October 28, 2026.

Agenda

Time	Topic	Speaker	Type	Page
1:00 p.m.	Call to order Roll call / attendance Meeting logistics Approve agenda Approve October 22 meeting summary	Chair Reinhardt/PSI	Action	2
1:10 p.m.	Public comment *Individuals emailed in advance to be added to the queue. Comments should be no more than 2 minutes.*	Chair Reinhardt/PSI		
1:20 p.m.	Updates from Circular Action Alliance (CAA)	CAA	Information	
1:30 p.m.	Updates from MPCA	MPCA	Information	
1:40 p.m.	Draft Needs Assessment: 2nd Round review of consolidated comments *This is a continuation of the review from the October Advisory Board meeting.*	Vice Chair Holsinger		5
2:45 p.m.	Break			
3:00 p.m.	Draft Needs Assessment: 2nd Round review of consolidated comments (cont.)	Vice Chair Holsinger		5
4:10 p.m.	Draft Needs Assessment: Finalize and vote	Chair Reinhardt/PSI	Action	
4:30 p.m.	Adjourn			

Packaging EPR Advisory Board

Meeting Summary

Virtual via Microsoft Teams or in-person at the MPCA St. Paul Office | 3.5 hours

Thursday, October 22, 2026 | 9:00 a.m. - 12:30 p.m. CT

Recording available at: https://www.pca.state.mn.us/events-and-meetings/packaging-extended-producer-responsibility-advisory-board-meeting-2026-10-22

Attendance

Board Member Attendance

Present *(8 members required for quorum)*				**Absent**
Sara Bixby	Megan Daum	Sam Holl	Miriam Holsinger	Gabrielle Batzko-Conley
Bill Keegan	Mary Kosuth	Kirk Koudelka	Gregory Melkonian	Kate Davenport
Shoshana Micon	Shannon Pinc	Victoria Reinhardt	Maggie Schuppert	
Mac Sellars	Jon Steiner			
Gabrielle Batzko-Conley and Kate Davenport had excused absences.				

Guest Presenters: Kris Coperine, CAA; Travis Pate, CAA

Agency Staff: Mallory Anderson, Annika Bergen, Molly Flynn, Quinn Carr, Colleen Hetzel, Aubrey Sondrol, Tina Patton, Elizabeth Kuzila

PSI Staff: Darla Arians, Jennifer Schultz

Participants: Laura Hann, Peter Hargreave, Ryan O'Gara, Zachary McCarty, Cathy Jeannotte, Walter Reiter, Julie Ketchum, Tony Kwilas, Taylor Loeber, Suna Bayrakal, Astrid Torres, Bethany Bethke, Bahareh Kokabian, Emily Sisk, DeNeile Cooper, Mel Jung, Matt Herman, Alicia Cafferty, Bridget Anderson, Susan Bush, Apurupa Gorthi, Grace Altier, Sally Hopley, Sonia Dattaray, Norman P. Soberano, Cole Reiter, Leah Batstone-Cunningham, Alejandro Torres, Carol Patterson, Shayna Petit, Andrew Morley, Tim Wilkin, Garth Hickle, Dan Donkers, Melissa Finnegan, Dylan Reisig, Sonya Ewert, Megan Sullivan, Janell Schroeder, Lauren Scott, Katie Perrin, Kyla Fisher, Teresa Conner

Note: Participants attending virtually who choose not to list their names have been left off.

Meeting notes

Call to order

Chair Reinhardt called the meeting to order. Darla Arians conducted a roll call.

Present: Bixby, Daum, Holl, Holsinger, Keegan, Kosuth, Koudelka, Melkonian, Micon, Pinc, Reinhardt, Schuppert, Sellars, Steiner

Absent: Batzko-Conley, Davenport

Approve September meeting summary

Jon Steiner motioned and Sara Bixby seconded. Darla Arians conducted a roll call vote.

Yes: Bixby, Daum, Holl, Holsinger, Keegan, Kosuth, Melkonian, Micon, Pinc, Reinhardt, Schuppert, Sellars, Steiner

Nonvoting: Koudelka

Approve agenda

Gregory Melkonian requested that Sections 5 (covered materials), 11 (state requirements and performance targets), and 14 (responsible end markets) of the draft Advisory Board comment be added to the discussion. Sara Bixby requested review of places where the Advisory Board was advancing a policy recommendation. The Advisory Board discussed and agreed more time for review and agreement on draft comments was needed.

Megan Daum motioned to approve the agenda as amended and Bill Keegan seconded. Darla Arians conducted a roll call vote.

Yes: Bixby, Daum, Holl, Holsinger, Keegan, Kosuth, Melkonian, Micon, Pinc, Reinhardt, Schuppert, Sellars, Steiner

Nonvoting: Koudelka

Public comment

No members of the public signed up in advance to provide public comment. Chair Reinhardt called three times for public comment from those in attendance; none was offered, and the public comment period was closed.

CAA update

Presented by Kris Coperine and Travis Pate, CAA

Kris Coperine introduced the update from CAA's Producer Services team, noting that the Producer Portal is open until December 8, 2026. Travis Pate reported that Minnesota has a little over 3,600 registered producers, about 185 more (roughly 5 percent growth) than at the July update. He described CAA's recruitment model, which pairs national resources with Minnesota-specific outreach to identify, engage, and onboard prospective producers, and noted that a brand management portal opened in October. CAA's priorities through the end of the year include continued Minnesota-specific marketing and direct outreach, prospective producer referrals, a brand update sprint for registered producers, and monitoring of participation gaps. There were no questions.

MPCA update

Presented by Mallory Anderson, Aubrey Sondrol, and Kirk Koudelka, MPCA

Board and outreach updates. Mallory Anderson reported that two 2027 Advisory Board vacancies still have no applications: the retailer/retailer association seat and the statewide environmental nonprofit seat. The MPCA held four public information sessions on the draft Needs Assessment; the slides and recordings are available online through the end of the comment period, and comments submitted through the new comment platform are posted regularly. Clarifications on several statutory definitions and interpretation issues were included in the Board Packet, and the 2025-2026 statewide waste characterization study has been posted.

Needs Assessment next steps. MPCA is re-surveying the six large material recovery facilities identified in the report on a broader set of materials, verifying drop-off location data (recyclables, organics, hard-to-recycle items, household hazardous waste, and retail drop-off sites), and continuing to review feedback with Eunomia as the report is finalized.

Discussion. Assistant Commissioner Koudelka described implementation of the EPR for packaging and paper program as an iterative process. Given the December 31, 2026 deadline, there is not time to build a new model, so the focus is on reviewing and adjusting assumptions within the existing model. He noted further opportunities for input, including the rulemaking public comment period and hearing and CAA's review of its plan with the Board. In response to member questions, MPCA staff encouraged members to help recruit applicants for the open seats through their networks and noted that applications remain open on a rolling basis, with appointment decisions expected by December. Staff shared preliminary observations of participation in the information sessions, and a full summary will be included in the final Needs Assessment.

Reminder of context for Advisory Board review and comment

Presented by Darla Arians, PSI

Darla Arians reiterated the most useful feedback format and the four areas of focus for the Board's review of the draft Needs Assessment. She also reviewed the timeline ahead, noting the Advisory Board's primary focus is to finalize and vote to approve its comment on the draft 2026 packaging Needs Assessment at the November 2, 2026 meeting ahead of the November 13, 2026 close of the public comment period.

Draft Needs Assessment: First round review of consolidated comments

Led by Vice Chair Miriam Holsinger

Vice Chair Holsinger led the Board through the discussion points document, which highlighted draft comments where members were not yet aligned, as well as Sections 5, 11, and 14 of the full consolidated comments, which were added at Gregory Melkonian's request. This was a working session; no vote was taken.

Topics discussed included producer reporting by application, waste reduction modeling and the limits of lightweighting, reuse, mixed waste processing, waste reduction and post-consumer recycled content targets, the toxic substance review, covered material categories, and responsible end markets.

Jen Schultz captured notes in the working documents during the review. Mary Kosuth followed up with two publications to consider related to the toxics discussion:

- Vincoff, Sophia, et al. "The known and unknown: investigating the carcinogenic potential of plastic additives." Environmental Science & Technology 58.24 (2024): 10445.
- Monclús, L., et al. "Mapping the chemical complexity of plastics." Nature 643.8071 (2025): 349-355.

Next steps and closing

Vice Chair Holsinger will incorporate the discussion into the full consolidated comment document. The revised document will be included in the November Board Packet. By Tuesday, October 27, 2026 members should identify priority topics for the October 30, 2026 subcommittee meetings to the Chair, Vice Chair, subcommittee chairs, and MPCA staff. Changes from the subcommittees will be summarized and introduced at the November 2, 2026 meeting for review and further refinement if needed.

The next Packaging EPR Advisory Board meeting is Monday, November 2, 2026, from 1:00 p.m. to 4:30 p.m. CT, where the Board will finalize and vote to approve its comment. The meeting adjourned at approximately 11:57 a.m.

Notes compiled by: Jennifer Schultz

Minnesota's Packaging Extended Producer Responsibility Advisory Board

Advisory Board Draft Needs Assessment Consolidated Comments: Round 2

DRAFT

Consolidated Comments

The Needs Assessment will have significant consequences for implementation. The findings from and recommendations included in the Needs Assessment serve as the baseline for statewide requirements and inform performance targets, investments, collection lists, measurement methodologies, reimbursement rates, toxics education, and responsible market requirements.

Across these comments, our central recommendations are to improve the accuracy and transparency of the data; strengthen waste reduction, reuse, recycling and composting requirements; ensure equitable access and responsible end markets; and align investments and reimbursement with verified outcomes.

We appreciate the extensive analysis contained in the draft. However, we believe several recommendations should be strengthened or revised before the Needs Assessment is finalized.

1. **Introduction**

Terms and definitions should be consistent throughout the report and with Minnesota Law

We recommend that the Needs Assessment use consistent terminology throughout the report and ensure that definitions align with Minnesota law. Several terms are used inconsistently or without sufficient explanation, creating confusion about how facilities, materials, and services are categorized.

For example there are terms for Commercial Composting Facility and SSOM composting facility but no indication if these two terms are interchangeable. Although the definitions are slightly different (Page ii - Commercial composting facility: A facility that is actively composting organic materials including yard waste, food scraps, and compostable packaging to produce compost. Page viiii - SSOM compost facility: A composting facility that receives and processes SSOM.) it isn't clear where they overlap or do not overlap.

Quantities that are not numerical need to have clear definitions. An example of this is Table 59 on page 193 which lists "Few" and "Many" mrfs as accepting material. How many MRFs is "many"? and why not all? How many mrfs are "few"? We recommend providing actual numbers or percentages rather than subjective descriptions, particularly when evaluating the availability of recycling infrastructure and end markets.

Finally, the report seems to use the terms "town" and "township" interchangeably. A "Town" is generally an incorporated, organized small city that functions mainly like a City. A "Township" is a 6-mile by 6-mile unincorporated, unorganized subdivision of a County characterized by low population density spread over large areas of land. Most "Towns" have collection services, most "Townships" do not. We

recommend using terminology consistent with Minnesota law and clearly distinguishing between cities and rural townships where differences in population density, collection infrastructure, and recycling service availability are relevant to the analysis.

2. **Community Profile:** No Comments
3. **Interested Part Consultation:** No Comments
4. **Data Collection**

The Needs Assessment appropriately acknowledges significant limitations in the data available to establish Minnesota's current system baseline. In several areas, the analysis relies on incomplete survey responses, modeled estimates, assumptions, extrapolation from other jurisdictions, or limited facility-level data. These approaches may be necessary to complete the first Needs Assessment, but they make transparency and consistency particularly important because these data form the foundation for the modeling, statewide requirements, performance targets, infrastructure needs, and other recommendations that follow.

Throughout our review, we identified instances where data presented in different tables do not appear to align, references are unavailable or difficult to trace, or the assumptions underlying estimates cannot be readily verified. Additionally, many tables were missing totals columns either on the right or the bottom that make it easy to reference and understand the data in relation to the bigger picture. Most significantly, estimates of the amount of covered material generated, recycled, and disposed at covered and non-covered entities rely on an underlying spreadsheet that does not include the formulas necessary to understand or reproduce the calculations and assumptions used to develop those estimates.

Flexible plastics provide one example of why this matters. The Needs Assessment estimates substantially more flexible plastic generation than glass and estimates residential flexible plastic generation at approximately 171 pounds per household per year. Yet the discussion on page 127 cites three other estimates of residential film generation ranging from approximately 28 to 86 pounds per household per year. The report does not adequately explain how these substantially different data points were reconciled or why the much higher estimate used in the model is the appropriate baseline. When an estimate is inconsistent with other information presented in the report, the methodology and assumptions used to arrive at that estimate should be clearly documented and justified.

It is also frequently unclear whether differences between tables or sections reflect intentional ranges, different data sources or assumptions, or inconsistencies in the analysis. For example, the report lists three different figures for composting material being processed: 4,235 (pg 169) is what they estimate is currently being processed while 4,700 (pg 348) and 3,184 (pg 6) are contradictory projections of future captured tons, with the latter being lower than what is currently collected. Another example is Table 28 states the SE generates 1,170 pounds per dwelling unit but the following paragraph states this generation of 1,231 pounds.

The Needs Assessment also reports substantially different recycling generation rates for national parks compared with state and regional parks, without adequately explaining the reasons for these

differences. We recommend clarifying the underlying data sources and assumptions, including whether differences in facility operations, visitor activity, or material generation account for the variation.

The Needs Assessment also contains unclear classifications and assumptions regarding metal containers. For example, it appears to use Minneapolis waste composition data to assume that 31% of ferrous cans are aluminum, even though aluminum is a nonferrous metal. The report should clarify whether this calculation refers to all metal containers, ferrous metals, or nonferrous metals, and how it was used to adjust SCORE data. Additionally, Table 22 does not clearly identify aluminum and ferrous aerosol cans, making it unclear whether they are included in the categories labeled "steel other" and "aluminum other" on page 114. We recommend clarifying these classifications and consistently documenting how material acceptance and recycling quantities were estimated.

The underlying model and the tables and figures derived from it should be based on clear, traceable assumptions that can be followed from source data through the analysis to the final recommendations. This should include how access and participation are measured by area and covered entity, collection method, and other variables. Where different reasonable inputs or assumptions produce materially different results, the Needs Assessment should present multiple scenarios or sensitivity analyses and clearly explain how those assumptions affect the outcomes.

We recommend that the final Needs Assessment clearly distinguish throughout the report between measured Minnesota-specific data, modeled estimates, extrapolated data, and assumptions. Where data limitations or alternative assumptions materially affect statewide requirements, performance targets, collection-list decisions, reimbursement rates, infrastructure needs, or other program decisions, those limitations and their effects should be explicitly identified.

These uncertainties are particularly important because the Needs Assessment will establish the baseline against which future program performance is evaluated. Estimates developed because better information is currently unavailable should not become permanent assumptions embedded in future stewardship plans. The final Needs Assessment should identify priority data gaps that the PRO, producers, service providers, or MPCA should be required to address during the first stewardship plan so that future program decisions can rely increasingly on verified Minnesota-specific data. Data gaps or inconsistencies that materially affect the proposed statewide requirements, performance targets, or other major program recommendations should be addressed before the Needs Assessment is finalized, rather than deferred to future stewardship plans.

5. Covered materials

Covered material categories reflect meaningful differences in recyclability, processing requirements, and end-market opportunities. Grouping materials with substantially different recycling outcomes can obscure important limitations and lead to unrealistic performance targets. The Needs Assessment lumps together several materials in tier 3 that should not be put together:

- Colored PET should be separated into two categories

    - Transparent colored PET (such as green or brown soda bottles that you can see light through) are more difficult and unlikely to be recycled into bottles but can be made into low-grade strapping.
    - Opaque colored PET (such as white eyewash bottles or solid white PET bottles) are not accepted by end markets.
- White PP should be categorized with the colored PP and Clear PP should be in its own category, similar to HDPE.
- Aluminum cans should have a subset for wrapped cans, such as from local breweries, energy drinks, and cat food cans. While there is a low tolerance for this type of material in un-wrapped can bales, too much of it increases the dross in the aluminum recycling process and reduces their yield so there should be incentives for businesses not to use this material and for MRF's to remove as much as they can into their lower grade aluminum bales.
- There has been significant data and effort to move most tubes to be HDPE and ensure they are recyclable yet it is unclear where they fall in this report (but PP tubes are mentioned despite them being a small portion of the tubes).
- Identification and classification of packaging components is unclear. For example it mentions rubber bands and corks but not twist ties or clasps. These type of materials need to be clearly classified and tracked in a way that isn't excessively cumbersome.

The Needs Assessment does not adequately address covered materials that may have multiple management pathways, beyond a brief reference on page 442. Materials such as pizza boxes, paper bags, coffee cups, and molded paper may be managed through recycling or composting, depending on the material, local collection programs, and facility acceptance. We recommend that the Needs Assessment clarify how these materials are categorized, how their collection and processing are accounted for across different pathways, and whether the modeling assumes a default management pathway. Materials should be evaluated based on demonstrated collection, processing, and end-market outcomes, with clear accounting to avoid double counting and ensure that recycling and composting performance accurately reflect what happens to these materials.

6. Current State Programs

Significant data and context gaps lead to lack of confidence regarding current state program analysis

The Needs Assessment relies on broad assumptions rather than Minnesota-specific data to estimate recycling participation and set-out rates. There is no documented research on actual participation and set-out rates in communities with subscription recycling, and available survey information appears to have been minimally used. Instead, the report applies a formula based on national data for subscription programs and information from only one or two communities for organized collection. Given Minnesota's extensive recycling infrastructure and diverse collection systems, these assumptions raise concerns about the accuracy of the analysis. While it may be too late to collect this information for the final Needs Assessment, we recommend that the MPCA and PRO prioritize gathering actual Minnesota participation and set-out data to inform the first stewardship plan.

Multifamily recycling requires further analysis.

Multifamily recycling presents distinct challenges, including contamination, resident turnover, and different education and outreach needs. Appendix A.09 indicates that multifamily tonnage was estimated using Eureka Recycling data. However, Eureka only collects recycling, not trash, and it is unclear how Eunomia estimated covered materials remaining in the waste stream. The report also does not adequately address differences in material generation and recycling by region or demographics.

Given the significant number of Minnesotans living in multifamily housing, we recommend clarifying the methodology used and prioritizing additional research, if it cannot be completed before finalization, to establish accurate baselines, realistic capture rate targets, and effective strategies for improving multifamily recycling.

Rural recycling access and collection assumptions need greater scrutiny.

The Needs Assessment makes several assumptions that may significantly distort recycling access and collection estimates in rural Minnesota. Section 6.3.1.1 assumes that communities without available curbside recycling data have no curbside access, even though data collection focused on cities and towns with populations over 10,000. This approach may disproportionately affect rural regions with few communities of that size.

The report also fails to adequately acknowledge the limited availability of curbside recycling in unincorporated rural areas or explain how this was reflected in regional projections. Additionally, it assumes biweekly single-stream collection outside the Twin Cities metropolitan area where collection frequency is unknown, without adequately accounting for less frequent collection.

The analysis should also clarify whether smaller cities and townships are adequately represented, given the reliance on secondary research focused primarily on communities with populations greater than 10,000.

We recommend that the final Needs Assessment clarify the information and assumptions used to estimate rural recycling access, subscriptions, and collection frequency, and evaluate how these assumptions affect regional projections and future service needs.

Recycling access must be distinguished from actual collection and participation.

Table 17 estimates that 115,840 households in the Twin Cities metropolitan area and 636,314 statewide lack curbside recycling collection, but does not adequately explain why. Households that do not subscribe, lack access, or rely on drop-off recycling have different service needs and require different solutions. Without these distinctions, the Needs Assessment cannot accurately identify what investments or program changes are necessary to increase recycling.

We recommend that the report clarify how these estimates were developed and distinguish between access, subscription, actual collection, and participation.

Drop-off information should provide more guidance and details.

The Needs Assessment should clarify how its analysis of recycling drop-off access accounts for the requirements in Minn. Stat. § 115A.1451, subdivision 8, including differences in county population,

population density, and city classification. We recommend identifying where existing drop-off infrastructure may be insufficient to meet these requirements and what additional investments may be needed, particularly in rural communities.

Environmental justice findings should inform EPR program decisions

We support the Needs Assessment's analysis of environmental justice impacts, including disparities in recycling access, proximity to waste management facilities, and potential impacts on workers.

We recommend that the final Needs Assessment consistently apply Minnesota's statutory definition of environmental justice areas when evaluating environmental justice impacts and disparities. The analysis in Section 6.3.4.1 appears to rely on county-level poverty data rather than the full statutory criteria, potentially overlooking communities identified through other qualifying factors, including Tribal lands, race, and language. Poverty data may provide useful additional information about affordability, but it should not substitute for the statutory definition. The final Needs Assessment should clarify its methodology, correct any resulting misclassification, and evaluate how these limitations affect its findings and recommendations.

The Needs Assessment finds that 21 percent of households in environmental justice areas are located in counties where only 0 to 50 percent of households have curbside recycling access. It also finds overlap between environmental justice areas and disposal infrastructure, including that approximately 18 percent of environmental justice areas are within one mile of a landfill and approximately 4 percent are within one mile of a waste-to-energy facility.

The Needs Assessment should also more accurately account for existing recycling infrastructure and services in Tribal communities. For example, Tribal recycling drop-off programs in northwestern Minnesota appear to be missing from the infrastructure inventory because they do not hold MPCA permits, while the Polk County MRF is classified as a waste processing facility despite processing single-stream recyclables. These omissions may lead to inaccurate conclusions about recycling access and infrastructure gaps. The analysis should distinguish between communities that lack recycling infrastructure and those that have existing infrastructure but lack the funding, staffing, or resources needed to expand services. This distinction is important for identifying appropriate investments and ensuring equitable recycling access.

The Needs Assessment should go beyond identifying proximity to waste management facilities and provide additional analysis of potential environmental and public-health impacts, including facility operations, pollution sources, exposure pathways, and cumulative impacts. This analysis should recognize differences among facilities and communities while ensuring that limitations in available data do not prevent the identification of potential environmental justice concerns or recommendations to reduce disproportionate burdens.

The Needs Assessment also appropriately recognizes environmental justice concerns for recycling workers, including potential exposure to particulate pollution and other hazards and the disproportionate representation of workers from environmental justice communities at these facilities.

However, these findings should do more than describe existing conditions. They should inform the recommendations that will shape Minnesota's EPR program, including decisions about infrastructure investments, expansion of covered services, responsible end markets, collection methods, and strategies for waste reduction and reuse. They should also inform how the program protects workers, particularly temporary, transitional, and other workers who may be more vulnerable to unsafe working conditions.

This is particularly important in light of Minnesota's cumulative impacts law. While the specific permitting requirements of Minn. Stat. § 116.065 do not govern every decision made under the EPR program, the same cumulative-impact framework should inform decisions about where and how Minnesota's EPR system develops infrastructure and manages covered materials.

This consideration should extend throughout the downstream chain. Minimizing adverse impacts to environmental justice areas is part of the statutory definition of a responsible market, so environmental justice cannot be treated solely as a consideration in siting Minnesota infrastructure.

We recommend that the final Needs Assessment identify how environmental justice and cumulative impacts should be incorporated into EPR program decisions. Investments and program changes should reduce existing disparities, avoid adding pollution or public-health burdens in communities already experiencing disproportionate environmental impacts, and improve job quality and worker health and safety throughout the system. Responsible end market verification should likewise ensure that Minnesota does not simply shift the environmental and public-health impacts of managing its covered materials to other communities.

Environmental justice and cumulative impacts should be factors in how Minnesota designs and evaluates the EPR program, not simply separate analyses of the system that exists today.

Plastic film and Flex data seem to be misrepresented in the report

On pages 116–118, the Needs Assessment indicates that most recycling drop-off locations in the Twin Cities metro area accept plastic film. However, it does not adequately explain that these programs typically require film to be clean, dry, and collected separately from other recyclables. The report also does not adequately account for retail collection programs or distinguish between the collection of plastic film and its successful processing into recycled materials.

These limitations, combined with the concerns about the estimated volume of flexible plastics generated in Minnesota identified in Section 4, raise questions about the accuracy of the report's baseline for plastic film generation, collection, and recycling. We recommend that the final Needs Assessment more clearly distinguish between the types of flexible plastics accepted through existing collection programs, the quantities actually collected and recycled, and the materials that lack viable recycling pathways.

Materials that are not currently recycled or recyclable in Minnesota need to be identified as such

The Needs Assessment uses data from King County, Washington, to develop assumptions about Minnesota SCORE reporting for plastics categorized as #3–#7. However, these categories include materials with fundamentally different recycling outcomes. Plastics #3, #4, #6, and #7 are not accepted through Minnesota's conventional curbside recycling system, while certain #5 plastics have established

collection, sorting, and recycling pathways. Grouping these materials together obscures the amount of plastic packaging that is actually recyclable and risks overstating Minnesota's current recycling performance.

Similarly, the Needs Assessment repeatedly references plastic film and flexible packaging without adequately acknowledging how much of this material consists of multilayer packaging or contains other properties that prevent it from being recycled. Much of this packaging cannot be successfully sorted and recycled through existing systems, and the report needs to distinguish these materials from flexible plastics that have demonstrated recycling pathways.

By failing to identify and quantify covered materials that are not currently recyclable, the Needs Assessment understates the extent of packaging redesign necessary to meet the goals of the Act. We recommend that the final Needs Assessment clearly identify these materials and account for the changes producers will need to make over the next five years, including redesigning or eliminating packaging that cannot be recycled, and how those changes will affect recycling rates, infrastructure needs, and the broader EPR program.

7. Current State Costs

When the current program data is unclear or incorrect it leads to concern about the accuracy of current costs. Below are areas in Section 6 that need to be clarified in order to ensure that current costs are accurate.

- In subsection 6.3.1.1, there are areas of ambiguity about the scope of covered entities that may skew system costs. According to Table 13 for secondary schools, universities, and colleges, the unit measured is “tons per student living on campus per year.” However, this leaves a significant amount of students and staff who do not live on campus unaccounted for. It is unclear whether national parks and other federal government property are considered covered entities. Furthermore, the report assumes a 40% rate for on-campus housing, yet it also states the University of Minnesota on-campus housing figure is only 23%. These examples create uncertainty with the number of entities and tonnages that will be subject to reimbursement.
- The Needs Assessment should clarify how public spaces and facilities are accounted for in its estimates of covered entities and recycling generation. Subsection 6.3.1.2 does not clearly address locations such as playgrounds, athletic fields, event venues, community pools, public water access sites, wildlife refuges, and campgrounds. We recommend clarifying which of these locations qualify as covered entities, how their material generation is accounted for, and whether their omission could affect estimates of covered services and reimbursement costs.

In subsection 7.2.1, Table 51 includes a 7% profit margin for collection costs but not for other activities. While the report provides some context for this assumption, it is unclear why 7% was selected or why a profit margin was applied only to collection. It is also unclear how the model accounts for publicly operated collection services, which incur administrative, capital, and operating costs but do not necessarily include a profit margin. We recommend clarifying and justifying these assumptions to ensure accurate cost estimates across different service providers.

On page 180, the Needs Assessment assumes that MRF tipping fees represent the net cost of processing, with some profit margin included. However, tipping fees alone do not necessarily reflect the full cost of processing. MRFs also generate revenue from the sale of recyclable materials, which fluctuates considerably with market conditions. Tipping fees may also be based on outdated contracts or may not fully cover operating costs, particularly for publicly operated MRFs or facilities supported by other lines of business. Relying on tipping fees from a single year may therefore misrepresent actual processing costs. We recommend that the Needs Assessment clarify how commodity revenue, market fluctuations, contractual arrangements, and differences in MRF operating models are accounted for to ensure accurate estimates of processing costs and future reimbursement needs.

8. Collection Lists

We support the Needs Assessment's recognition that collection lists should evolve as packaging and Minnesota's recycling system change. However, we are concerned that the report places too much emphasis on future investment and emerging technologies as pathways for moving difficult-to-recycle materials onto collection lists.

This is particularly concerning for flexible plastic packaging. The Needs Assessment identifies uncertainty regarding end-market capacity for flexible plastics and other difficult-to-recycle plastic formats, while also identifying chemical and non-mechanical recycling as potential future end markets for PP, PE, and flexible packaging. No chemical recycling facilities accepting covered packaging materials were identified in Minnesota.

Potential future technologies should not establish that a material is recyclable today. The possibility that pyrolysis or another chemical recycling process could eventually provide an outlet for flexible plastics is not evidence of an effective recycling pathway. The Needs Assessment itself describes chemical recycling as developing and identifies limitations related to feedstock quality, contamination, material recovery, verification, and downstream outcomes.

We recommend that placement on the required commingled or alternative collection list depend on demonstrated collection, processing, and responsible end-market pathways, not simply the technical possibility that a material could be collected or processed. The availability of EPR funding should not transform an otherwise ineffective recycling pathway into an appropriate long-term strategy.

If pyrolysis, depolymerization, or another chemical recycling technology is proposed as an end market, it should first demonstrate meaningful collection and capture, sufficient processing capacity, conversion into usable recycled material, compliance with minimum yield requirements, transparent downstream material accounting, and compliance with Minnesota's responsible end market requirements. The same principle should apply to gasification or another thermal conversion technology if proposed in the future.

Where a covered material cannot demonstrate an effective collection, processing, and responsible end-market pathway, producers should be expected to redesign the packaging, transition to reusable systems where appropriate, or eliminate unnecessary packaging rather than require the recycling system to accommodate it.

EPR should not preserve every existing packaging format by finding some process capable of accepting it. It should drive producers toward packaging that can be effectively reduced, reused, recycled, or composted in practice.

9. Future State Programs

9.1 Approach

The Needs Assessment does not account for projected population growth in its future-state material flow analysis, despite anticipating approximately 3% population growth over the modeled period. While holding population constant may help isolate the impacts of EPR interventions and compare performance against the baseline, population growth could affect the total volume of covered materials generated, collected, recycled, and disposed, as well as future infrastructure needs and program costs. We recommend that the final Needs Assessment includes a supplemental analysis showing how projected population growth could affect material volumes and system costs, while maintaining consistent percentage-based performance measures.

We support the Needs Assessment's recommendation that households receiving trash collection should also have access to convenient recycling collection - in fact it is required under the law. Expanding equitable access to recycling is a fundamental goal of the Act. While implementation may require different approaches depending on local conditions, including rural collection routes, collection frequency, and other logistical considerations, these challenges should not be used to justify lower service expectations. We recommend that the final Needs Assessment recognize the need for flexibility in how services are delivered while maintaining consistent statewide requirements for convenient and equitable recycling access.

9.1.1 Scope and methods common to waste reduction and reuse analyses

In general, all covered material types need to share in burden of meeting statewide requirements, and those that have already conducted waste reduction and PCR may merit recognition for their prior effort. On page 244, it is stated that paper products are excluded from the waste reduction analysis due to lack of information. However, packaging should not be expected to cover waste reduction obligations alone under the Act. The exclusion of paper products from the waste reduction analysis represents a significant limitation in the modeling. We recommend that the final Needs Assessment address this data gap and evaluate waste reduction opportunities across all covered materials rather than using incomplete analysis to justify less ambitious statewide requirements

Eunomia proposed on page 245 that the PRO require producers to report packaging by “application” (product type, such as soft drink, milk, shampoo, etc). While tracking success movement towards benchmarks is required, tracking methods to be used are not specified. Some board members are concerned that tracking by application poses an added burden for producers and the PRO for every single format of packaging. An alternative could be for the PRO can project the general application based solely on the industry of the producer without obligating new reporting burdens. However, tracking does need to be done in a manner that allows the PRO to measure capture rate targets, if the best manner to

do this is by application, we recommend they work with producers to identify the best way to do that balancing accuracy with efficiency.

9.1 Waste Reduction

The Needs Assessment's waste reduction modeling focuses primarily on material reduction through packaging redesign and lightweighting. While we recognize the limitations of available data, this approach does not fully capture the range of strategies available to prevent waste and reduce toxicity. These include eliminating unnecessary packaging, reducing reliance on single-use products, changing how products are packaged and distributed, and reducing hazardous substances in packaging. We recommend that the report acknowledge these limitations and identify additional waste prevention strategies that producers could implement to achieve the Act's goals.

In subsection 9.2.1, the modeling relies on assumptions about producers' future adoption of lightweighting and other packaging reduction strategies, including extrapolating from case studies and pilot programs. While these assumptions may be appropriate for estimating likely adoption under current market conditions, they should not limit expectations for what producers can achieve under EPR. We recommend that the Needs Assessment clearly document the basis for these assumptions, evaluate how different adoption rates affect modeled outcomes, and identify the producer actions and investments necessary to achieve more ambitious waste reduction targets.

In the opinion of some board members the modeling in the report leads to aggressive conclusions, such as that all producers will adopt a “best-in-class benchmark.” They believe this is unrealistic and modeling should be adjusted to account unknowns such as producers who prove that lightweighting would have significant negative unintended consequences such as additional material breakage in transit.

9.2 Reuse

9.3.4: On page 313, the report states that most stadium and event-venue applications are excluded from the reuse analysis. This is a significant gap, especially since these facilities are some of the ones that are most reuse-ready and experienced. Given that the waste reduction modeling relied on case studies and extrapolation, it is not clear why a similar level of analysis was not attempted here.

9.3.4: The HHW analysis on page 320 anticipates the Act will necessitate eight more sites to cover every county. However, this may be understating the amount if any counties have more than one site already and thereby underestimating the future needs. Eunomia should check whether any of the facilities are in the same county and readjust the estimate accordingly.

On Page 336, the report states, “The ten-year reuse scenario was used when determining the reduction in material available for waste reduction.” Some board members believe this is an aggressive assumption that leans heavily into the high end of reuse capacity and can in turn undercut the waste reduction potential because many reusable items need to use heavier materials in order to be used again and again. Eunomia should be clearer about when and why they are using various assumptions and what the impacts are compared to using other assumptions.

9.3 Recycling

In subsection 9.4.2, the increase in the overall recycling rate is relatively modest over the 15 years modeled. Eunomia described to the Advisory Board that this is in part due to the analysis focusing on covered materials and noted that there is still an increase in recycled material tonnage. However, it would be helpful to have data to inform how cost-effective the resultant system improvements are, especially compared to other EPR states. All stakeholders want to ensure Minnesota is getting an adequate return on investment in a modernized system while avoiding putting a lot of resources and service changes that may not meaningfully improve the system but that also increase impacts. The report should therefore include data on the additional cost per ton recycled at the baseline and under the fifth and tenth year.

At page 331, the report relies on data reported from just one MRF to model capture rates at all MRFs. This does not seem like a reliable basis to use to extrapolate to all facilities, since they all are at different starting points. Facilities that are already significantly upgraded will likely not achieve as high of gains in capture. Eunomia should examine performance at MRFs in other states or technology ratings in general to inform this area. Otherwise, there is a risk of misjudging what investments can achieve.

Alternative collection programs should demonstrate actual recovery

We support establishing clear convenience and access requirements for alternative collection programs. The Needs Assessment recommends standards based on proximity, site density, and operating hours, including that 95 percent of residents be within specified distances of alternative collection locations.

However, convenient access alone does not demonstrate that an alternative collection program is effectively recovering covered materials. A network of drop-off locations could satisfy geographic access requirements while collecting only a small percentage of the material producers introduce into Minnesota.

This is particularly important for materials such as flexible plastic packaging, where alternative collection may be proposed as a pathway to recyclability. The existence of collection locations should not be treated as evidence that a material is being recycled at meaningful scale.

We recommend that the final Needs Assessment include performance measures for alternative collection programs in addition to access standards. These should include the amount of material introduced, amount collected, capture rate, contamination, amount delivered to responsible end markets, and recycling yield.

These performance measures should inform whether a material remains eligible for alternative collection over time. If an alternative collection program consistently achieves low capture or recycling yields, the appropriate response may be packaging redesign, reuse, or elimination rather than continued producer investment in an ineffective collection pathway.

Alternative collection should provide a demonstrably effective recycling pathway, not simply the opportunity for highly motivated residents to return a material.

9.4 Composting

Composting needs to be valued and evaluated appropriately

Composting is fundamentally different from recycling, reuse, and refill, and the Needs Assessment should recognize those differences in how it evaluates composting systems and their costs and benefits.

Throughout the report, composting is treated more as a supporting pathway than as a primary system for managing covered materials. This framing risks applying recycling-oriented measures to a system whose success should be evaluated using different metrics, including finished compost quality, contamination levels, beneficial soil use, feedstock quality, processing capacity, curing space, retention time, disintegration, screening residuals, pathogen reduction, chemical testing, and marketable finished compost.

Evaluating composting primarily based on collected tonnage or commodity revenues fails to capture its broader environmental and agronomic benefits. For example, on page 164, the Needs Assessment uses a conservative organics collection opt-in rate of 20%, despite data indicating that participation in some higher-performing areas is 50% greater, because the report concludes that the assumption makes very little difference.

Similarly, in Section 6.5.1.1, the Needs Assessment assumes that the split between drop-off and curbside organics collection can be calculated in the same way as recycling. Given that organics recycling is a less mature system and manages fundamentally different materials, we recommend using organics-specific data to estimate collection methods and participation rather than relying on assumptions developed for recycling.

We are concerned that the Needs Assessment undervalues the environmental benefits of compostable packaging and composting. While limitations in available data and the statutory framework may contribute to this issue, the final Needs Assessment should more fully recognize the environmental and agronomic benefits of composting. A more balanced analysis should distinguish between gross operational costs, residual management costs, finished compost revenues, and broader public and environmental benefits.

Compostable packaging should be aligned with Minnesota's organics recycling system

We support the Needs Assessment's recognition that compostable covered materials must be managed within clean source-separated organics systems and that contamination can affect processing, compost quality, and the marketability of finished compost. Nearly all composting facilities responding to the Needs Assessment identified contamination as an operational challenge.

The Needs Assessment also demonstrates that Minnesota's current ability to manage compostable packaging is limited. Collection is heavily concentrated in the Twin Cities metropolitan area, and compostable packaging represents only a small portion of the overall organics stream.

We are concerned, however, that the future-state analysis largely assumes these limitations will persist. The Needs Assessment assumes no change in composting costs in the five- or ten-year scenarios and concludes that EPR reimbursement will be too small to incentivize expansion of source-separated organics collection or infrastructure. Instead, it assumes that other state or local policies and investments will be needed to expand the system.

The EPR program should not encourage producers to shift toward compostable packaging without ensuring that those materials can actually be collected and composted in Minnesota. At the same time, current limitations in organics collection should not automatically determine the long-term role of compostable packaging.

We recommend that the final Needs Assessment more clearly identify the conditions under which compostable covered materials should be considered an appropriate packaging strategy, including access to source-separated organics collection, acceptance by composting facilities, demonstrated compostability, contamination impacts, and viable markets for finished compost. Producer investments should support these systems where compostable packaging provides a demonstrated benefit, rather than expanding compostable packaging independently of the infrastructure necessary to manage it.

As with recyclable materials, technical compatibility with a processing method should not, by itself, determine whether a covered material represents an effective circular pathway. On page 192, the report emphasizes the importance of distinguishing between compostable covered materials that are incorporated into the composting process and those that are screened out at the facility. We recommend additional clarity about this screening process, including when materials are screened out, how they are evaluated, and how facilities determine whether a material requires additional time to decompose or cannot be successfully composted. Compostable packaging should have demonstrated collection, processing, and end-market pathways and should not impair the quality or marketability of finished compost.

In Section 9.5.1, the report states that collection interventions for organics recycling are modeled based on a provision in the Metropolitan Solid Waste Management Plan. However, the Act requires collection services to be as convenient as waste collection, including for organics. We recommend that the Needs Assessment more fully incorporate this requirement and adjust its modeling if the current assumptions do not adequately account for expansion of organics collection.

Ultimately, compostability should mean that a covered material can actually be collected and successfully composted within Minnesota's organics recycling system, not simply that the material is technically capable of composting under certain conditions.

The full costs of composting covered materials should be represented

Compostable packaging requires an appropriate mix of food scraps, plant matter, and other organic materials to compost successfully. However, the Needs Assessment assumes that reimbursement would be proportional to the amount of covered material in the organics stream, without adequately accounting for the collection and processing of the other organic materials necessary for a viable composting process.

We recommend that the Needs Assessment more fully evaluate these costs, including the investments necessary to expand organics collection and composting infrastructure.

On page 170, the Needs Assessment states that including compostable covered materials on the required commingled collection list is not advised until organics recycling collection programs are more

established across the state. Rather than simply identifying the current limitations of the system, we recommend that the final Needs Assessment evaluate what would be required to expand collection and processing capacity.

Composting facilities should retain the ability to determine whether to accept certified compostable products. However, the Needs Assessment should further evaluate the barriers to acceptance and whether additional funding could help address them. Specifically, we recommend examining:

- What types and levels of funding would encourage composting facilities to accept, or expand their acceptance of, certified compostable products?
- What operational or infrastructure barriers currently prevent acceptance, and would funding address those barriers?
- Could facility expansions, new equipment, separate processing areas, longer curing times, or reintroducing screened materials into a second composting cycle enable facilities to successfully manage additional covered materials?

Answering these questions would help establish the true cost of composting covered materials. Some changes may require significant upfront investments, while ongoing costs may decrease once the necessary infrastructure and operational improvements are in place. These distinctions should inform reimbursement rates and other EPR-funded investments.

Contamination and compost quality need greater attention

Contamination is a significant cost and operational challenge for composting facilities. Glass, conventional plastics, and other non-compostable materials are among the contaminants of concern.

The Needs Assessment states that "non-certified compostable plastics may be more likely to cause contamination issues due to consumers misunderstanding what is considered a compostable plastic," but does not provide evidence supporting this assertion. The term "non-certified compostable plastic" is also not defined in the glossary and appears in the report's discussion of materials accepted by composting facilities.

We recommend that the Needs Assessment clarify or remove this terminology and ensure that its discussion is consistent with Minnesota's compostable product labeling requirements, including applicable certification requirements and exceptions for untreated wood and uncoated paper. Products that do not meet Minnesota's labeling requirements should not be presented as an appropriate category of compostable materials without further explanation.

The Needs Assessment should also more fully evaluate the sources and costs of contamination and identify strategies to reduce contamination at the source. This should include education about which products are accepted, where residents and businesses can obtain compliant certified compostable products, and how to distinguish compostable products from conventional plastics.

State procurement contracts for food serviceware could also support this effort by clearly identifying products that comply with Minnesota's requirements. Minnesota municipalities can already access the

state's procurement system, providing an opportunity to improve access to appropriate products while reducing contamination.

Strengthen markets for finished compost

Another important way to address the costs of composting is to ensure consistent demand for finished compost.

On page 174, the Needs Assessment identifies a lack of "consistent end markets for finished products, specifically for food waste derived compost." We recommend expanding this analysis to identify specific actions that could support market development and strengthen Minnesota's composting industry.

For example, the state could establish specifications and purchasing requirements for food waste-derived compost in appropriate transportation, construction, landscaping, horticultural, and other public projects. Incorporating compost into state procurement and project requirements could help create consistent and expanding end markets for composting facilities.

A stronger analysis of market development would help identify investments and policy changes needed to support a financially sustainable composting system.

The report should include recommendations on how to address “new technology”

On page 171, the Needs Assessment states that it “does not consider anaerobic digesters as a facility type, since their capacity to manage compostable packaging specifically is undefined.” However, anaerobic digestion is an established technology, and there are plans for facilities in Minnesota that may accept compostable covered materials.

We recommend that the Needs Assessment further evaluate the potential role of anaerobic digestion in managing covered materials, including which types of compostable packaging can be successfully processed, how these materials are managed, and whether they contribute to beneficial end products or are removed as residuals. This analysis should also consider contamination risks and the implications for compost quality when digestate is used as a soil amendment. A clearer understanding of AD's capabilities and limitations would help inform future infrastructure investments and determine where it may be an appropriate management pathway for covered materials.

On page 173, the Needs Assessment references de-packaging equipment without adequately addressing its potential impacts or role within the EPR program. While de-packaging equipment can separate food waste from packaging, it can also introduce plastic fragments and microplastics into organic material destined for composting or other processing.

The Needs Assessment should evaluate these contamination risks, the effectiveness of de-packaging technologies, and how separated packaging is ultimately managed. We also recommend clarifying when investments in de-packaging equipment would be eligible for EPR funding. Equipment primarily used to remove non-compostable packaging from food waste should not automatically qualify for funding simply because it processes material containing covered packaging. Any proposed investment should

demonstrate that it supports the effective management of covered materials without compromising compost quality.

10. Future State Costs

Future cost projections depend on accurate data and realistic infrastructure assumptions.

Cost modeling assumptions: The Needs Assessment relies on assumptions that may not adequately reflect variation across producers, materials, and regions. For example, on page 340, sales estimates for an average SKU are based on data from a single brand, raising questions about whether those estimates are representative across different sectors. Similarly, Table 127 uses average freight distances and transportation costs that may not reflect differences in geography, transportation methods, and material types. We recommend that the Needs Assessment provide greater justification for these assumptions, incorporate additional data where available, and evaluate how variations in these inputs affect projected costs.

Future MRF infrastructure investments: The Needs Assessment should provide more detailed estimates of the infrastructure investments necessary to meet future collection and recycling requirements. While some MRFs have recently upgraded their equipment, others, particularly smaller facilities, may require significant investments to accept and sort additional materials. We recommend providing estimated investment costs or ranges by region and facility type, including scenarios for specific upgrades such as separating PET thermoforms from PET bottles or adding the ability to sort cartons. The analysis should also distinguish whether materials are not currently collected or sorted because of equipment limitations, insufficient volumes, or lack of responsible end markets. These details are necessary to understand the scale of future investment needs and inform the stewardship plan.

Accuracy of recycling facility inventories and classifications: We remain concerned that the Needs Assessment's facility classifications may not accurately reflect existing recycling infrastructure and processing capacity. For example, page 145 identifies seven MRFs in the Twin Cities metropolitan area and none in other regions, despite the report describing recycling processing activity elsewhere in the state. The report should clarify how facilities are classified and whether facilities such as Pope Douglas, which has been identified as processing single-stream recycling at approximately 20 tons per hour, are appropriately represented. We recommend reviewing facility classifications and inventories, including facility size, processing capabilities, ownership, and survey participation, to ensure that infrastructure gaps and future investment needs are accurately identified.

Transfer station infrastructure: The Needs Assessment should provide greater detail on the role of transfer stations in Minnesota's recycling system and how their capacity and operations may need to change under EPR. We recommend clarifying the distinction between conventional transfer stations and hybrid recovery/transfer facilities, identifying regional gaps in transfer capacity, and providing information about the types and prevalence of operational challenges. This would help determine where additional infrastructure or operational investments may be necessary to support expanded recycling services.

The PRO should share the costs of building reuse, refill, and composting systems across producers

The Needs Assessment recognizes that reuse and refill systems require significant upfront investment and may have higher costs while infrastructure, participation, and scale are developing. However, it does not adequately address how those system-development costs should be allocated among producers.

If the costs of building reuse and refill infrastructure are assigned only to producers already using reusable or refillable packaging, those producers could bear disproportionately high costs for building systems Minnesota needs to achieve its broader reuse goals. This could create a financial disincentive to move away from single-use packaging.

The same concern applies to compostable packaging. Expanding collection and processing will require investment before those systems reach scale. Those system-building costs should not fall exclusively on the relatively small number of producers initially using compostable packaging.

We recommend that the final Needs Assessment distinguish between material-specific management costs and shared system-development costs. Appropriate costs of building and scaling reuse, refill, and composting systems should be spread across the broader producer base when those investments are necessary to achieve statewide requirements. The cost-allocation methodology should encourage, rather than penalize, producer transitions toward higher-priority management methods.

The Needs Assessment is under-representing the cost of investing in MRF infrastructure.

The needs assessment only cites the cost of specific equipment and not the cost to install that equipment into a MRF. In addition to the equipment, costs include additional conveyers to and from the equipment, bunkers to store the material sorted by the equipment, other retrofits needed to fit the equipment, bunker, and conveyers in, and if there is significant downtime, the cost to ship material from the MRF elsewhere while the MRF is not running. For example, Eureka Recycling recently completed an installation of 4 optical sorters that cost over 10 million – so assuming one optical sorter is $750,000 is extremely unrealistic.

Infrastructure investments should be tied to demonstrated system needs and performance

The Needs Assessment identifies investments needed to maintain and improve existing infrastructure, expand recycling access, and establish and expand reuse services. We support using EPR funding to strengthen Minnesota's existing recycling infrastructure and build the systems necessary to achieve higher waste reduction, reuse, and recycling performance.

However, the final Needs Assessment should provide a clearer framework for prioritizing investments. The relevant question should not simply be whether an investment could recover additional covered material, but whether it represents an effective use of producer funds compared with alternative investments capable of achieving the same or better outcomes.

Investment decisions should consider the additional amount of covered material actually reduced, reused, recycled, or composted; cost per additional ton; improvements in capture and recycling yield; quality and marketability of recovered material; access to responsible end markets; equitable service access; environmental, public-health, worker, and environmental justice impacts; and consistency with

Minnesota's waste management hierarchy. Investments should also be evaluated for the potential to lock Minnesota into expensive or lower-performing infrastructure over the long term.

This framework should apply to investments in existing MRFs. Funding should be tied to demonstrated needs and measurable improvements in throughput, capture, material loss, contamination, output quality, processing capacity, or the ability to effectively manage materials on Minnesota's collection lists. Facilities should have an opportunity to demonstrate their specific infrastructure needs rather than relying solely on generalized assumptions about the state's processing system.

Investments should also look at the system as a whole and identify likely needed investments based on market dynamics and material volume. For example the report should address recommendations on how to manage clear PET Thermoform more specifically instead just suggesting that those who collect it can continue to do so and those who don't should start a drop off. This ignores the reality of how difficult it is to market a thermoform only bale and the clear ratio that if all thermoform and clear PET bottles were recycled together the amount of thermoform in the bale would exceed most if not all PET reclaimer specifications. Therefore there should be recommended investment more to separate out thermoform and/or recommendations to discourage producers from using this packaging to prevent it from swamping the PET stream. The Needs Assessment should identify the pros and cons of these two pathways and make recommendations for how to address the issues associated with each one.

The investment framework should also address reuse. The statute requires the Needs Assessment to evaluate investments necessary to establish and expand reuse services, yet reuse infrastructure needs are fundamentally different from recycling infrastructure. Investments may be needed in collection and return systems, washing capacity, transportation and logistics, storage, and other shared infrastructure necessary to make reuse accessible at scale.

The Needs Assessment is relatively silent on Mixed waste processing and how it is able or not able to be included in the WPCR Act

Mixed Waste Processing facilities are not destinations or management methods covered materials are directed towards intentionally, but rather are a means of capturing covered materials that otherwise leave the management system to be disposed. However, not all mixed waste processing facilities are the same. Some require the processing of material to ensure the trash is appropriate size and scope for refuse derived fuel and add recycling (and compost) separation as part of the preparing of the trash. Other mixed waste processing facilities are built for dual purposes, able to separate some covered materials from the garbage but also convert to a single stream MRF. After cleaning the equipment and few operational transitions they are able to sort covered material and other recyclables. How the Needs Assessment acknowledges and categorizes this type of processing, has potential implications to integrated waste management systems across the state and impact upon other infrastructure supported by the WPCR Act.

In order to fully encompass the complexities of Mixed Waste Processing in Minnesota additional detail and context should be added to sections that include what type of processing facility is in the area, including whether or not each area currently with a mixed waste processing facility has a broad

establishment of separated recyclables collection programs in place. Additionally, where feasible (such with governmental run facilities) cost and capture rate information should be provided with all mixed waste processing facilities. There should also be, at least in the appendix, clear details on what each facility is permitted for and what it is currently being used for, to fully understand both potential and current use of each mixed use facility.

Some advisory board members are particularly concerned about using EPR funds to develop new mixed waste processing capacity. We recognize that existing mixed waste processing facilities may provide eligible covered services by recovering recyclable covered materials that would otherwise be disposed, and reimbursement for those eligible services is distinct from investment in new MWP infrastructure. The Needs Assessment, however, also recommends allowing reimbursement for new MWP facilities where separate recycling collection already exists and the PRO determines that additional capacity is necessary to achieve recycling targets.

Minnesota-specific analysis provides substantial reason for caution. A 2024 engineering study prepared for Hennepin County estimated that a new mixed waste processing facility would require approximately $102 million to $122 million in capital investment and $36 million to $44 million in annual operating costs while recovering only about 10 percent of traditional recyclables. The study found that none of the benchmarked facilities had demonstrated the projected recovery levels in practice and documented challenges including low recovery, contamination, poor material quality, limited end markets, and high operating costs.

MPCA's 2026 Draft Resource Management Report reinforces these concerns. Its modeled large-scale MWP facility would process 416,000 tons of mixed waste annually and require approximately $126 million in capital investment and $58 million in annualized capital and operating costs, equivalent to approximately $140 for every ton of mixed waste processed. The report appropriately characterizes MWP as a secondary recovery mechanism.

These costs should be evaluated against the relatively small amount of additional recyclable material recovered. Every dollar invested in processing large quantities of mixed trash to recover a small fraction of recyclable material is unavailable for waste reduction, reuse, source-separated collection, improvements to existing MRFs, or other investments that may deliver substantially greater benefits. Furthermore, when residents hear anecdotally that recyclables are pulled out of the trash, they are less likely to participate in the recycling infrastructure, not realizing how much more expensive mixed waste processing is and how much recyclables are not able to be captured through that process.

We recommend that any proposed investment in new MWP capacity be required to demonstrate that it is more cost-effective than alternative investments for achieving additional recovery. Cost-effectiveness should be measured based on the cost per additional ton of covered material actually recovered and delivered to a responsible end market, not simply the cost per ton of mixed waste processed. New MWP investments should also demonstrate that they will not displace or undermine source-separated recycling and that recovered materials can consistently meet responsible end market requirements.

The PRO should not independently determine that new MWP capacity is necessary. Any use of EPR funds for new MWP infrastructure should require MPCA approval based on demonstrated additional recovery, comparative cost-effectiveness, material quality, responsible end markets, and environmental and community impacts.

Finally, the infrastructure analysis should follow Minnesota's performance requirements, not constrain them. The investments identified in the Needs Assessment are based on the future-state scenarios modeled in the report. If MPCA establishes more ambitious statewide requirements and performance targets, as we recommend, infrastructure needs should be reassessed accordingly. Current infrastructure limitations should identify what producers need to invest in and improve, not determine how low Minnesota sets its expectations for future performance.

We recommend that the final Needs Assessment establish a transparent, performance-based framework for EPR investments that prioritizes the most effective uses of producer funds and evaluates investments based on additional recovery, cost-effectiveness, material quality, responsible end markets, equitable access, and environmental outcomes. New mixed waste processing capacity should be subject to particularly rigorous review and MPCA approval. Infrastructure needs should follow the statewide requirements and performance targets Minnesota establishes, rather than allowing current system limitations to constrain those requirements.

11. Statewide Requirements, performance targets

The Needs Assessment should establish more ambitious statewide requirements and performance targets

An overarching concern with Chapter 11 is that several of the proposed statewide requirements are not ambitious enough to drive the changes Minnesota's EPR law is intended to achieve.

The statewide requirements should establish clear expectations for improved performance and drive producers to redesign covered materials and invest in the collection, processing, reuse, composting, and responsible end markets necessary to meet them.

The future-state modeling provides useful information about what may result from the specific interventions analyzed in the Needs Assessment, but that is not the same question as what statewide requirements Minnesota should establish. The statute requires MPCA to consider not only the modeled scenarios, but continuous progress, Minnesota's waste management and greenhouse-gas goals, environmental and human-health impacts, performance in other jurisdictions, and the maximum extent of progress achievable. The modeled scenarios should therefore inform the statewide requirements, not define their upper bound. The upper bound should be closer to what happens if we all get it right, and then the State will have a range of goals to select from.

Waste reduction

Some Advisory Board members believe the proposed waste reduction targets of just 1 to 4 percent after five years and 2 to 10 percent after ten years are too low. Beginning January 1, 2032, all covered materials introduced into Minnesota must be reusable, refillable, recyclable, or compostable. Meeting that requirement should drive substantial elimination and reduction of unnecessary and problematic

packaging, particularly materials and formats that cannot realistically be redesigned to be effectively reused, recycled, or composted. These members believe waste reduction should be a central strategy for meeting the 2032 requirement, not a marginal outcome of the EPR program.

Other Advisory Board members are concerned that the modeling overestimates the potential for packaging lightweighting. They note that producers already have financial incentives to reduce packaging and that further reductions may not always be technically feasible or scalable without increasing packaging failures and associated environmental impacts. These members recommend revisiting the lightweighting assumptions and adjusting the modeled reduction potential to better reflect these limitations.

Population increases (and decreases) should be considered when evaluating progress towards waste reduction targets. On page 410, the report reasonably states MPCA and the PRO should consider external factors to adjust target or requirement design. However, it then states that population, economics, and market factors should not be used to adjust the baseline. If waste reduction is measured by the total amount of material in Minnesota, then this is inadvisable, as it would require that packaging be excessively reduced to the point of undermining the delivery of the underlying product just to meet targets. Without adjustments, increases in population and sales will necessitate arbitrary reductions in packaging supplied. In fact, the Act protects against this when setting targets: “determine the extent to which the amount of material used for a covered material can be reduced to what is necessary to efficiently deliver a product without damage or spoilage.” Adjustments for changes in population and sales should be incorporated or the waste reduction metrics should take this into account, using metrics such as units or population to evaluate progress.

To reiterate a prior point, the Material Reduction Rate on page 424 lacks consideration of material diverted from solid waste by virtue of increased recycling/recyclability. The program should not treat source reduction as the only valid form of waste reduction. A package redesign that increases the likelihood of capture and recycling, thereby keeping material out of disposal, also reduces waste generation.

The Needs Assessment also acknowledges that its modeling does not capture the full potential for waste reduction. It states that the modeled results represent reductions associated with the measures explicitly analyzed rather than the maximum waste reduction that could be achieved through all future packaging-reduction strategies, and notes that refill was excluded from the quantitative modeling. Those limitations should not become limitations on the statewide requirement itself.

Reuse and return. The proposed reuse requirement of 1 to 3 percent after five years and 6 to 14 percent after ten years should also be increased. The Needs Assessment itself states that these requirements "represent minimal change" and describes its reuse modeling as "only one illustrative pathway," recognizing that other combinations of packaging formats, product categories, return systems, and operational approaches could achieve equivalent or greater benefits. The analysis also demonstrates substantially greater reuse potential in particular applications, reinforcing the need for a stronger statewide requirement.

We support the more ambitious return-rate requirements proposed in Section 11.1.2, including 95 percent increasing to 98 percent for closed-loop food-service packaging and 80 percent increasing to 95 percent for open-loop systems. High return rates are essential to ensuring that reusable packaging actually remains in circulation long enough to deliver waste-reduction and environmental benefits.

Recycling. The Needs Assessment proposes an overall statewide recycling requirement of 50 to 55 percent after five years and 55 to 65 percent after ten years. We recommend setting a more ambitious trajectory, particularly for the ten-year requirement. Table 164 reinforces this concern. The modeled performance targets show almost no improvement between Years 5 and 10 for many materials, with no increase at all for HDPE, other rigid plastics, flexible plastics, glass, or aerosol metal containers.

The Needs Assessment should more clearly show the opportunity for improvement at covered entities, where the EPR program will directly expand collection and producer responsibility. While the current statewide capture rate for covered materials is approximately 48 percent, the capture rate for covered materials generated at covered entities is only approximately 35 percent. This represents substantial room for improvement.

Using assumptions already included in the Needs Assessment demonstrates the potential. Increasing collection access at covered entities from approximately 64 percent to 90 percent, combined with improved education that the analysis assumes can increase capture by 20 percent, would increase the capture rate for covered materials at covered entities from approximately 35 percent to 57 percent. That alone would increase the overall statewide capture rate to approximately 58 percent. A five-year statewide recycling requirement around this level therefore appears more consistent with the improvement that the Needs Assessment's own assumptions indicate is achievable.

The ten-year analysis should go further. By 2032, producers must ensure that covered materials introduced into Minnesota are reusable, refillable, recyclable, or compostable. The Needs Assessment already assumes that some currently non-recyclable materials will transition into recyclable material streams. That redesign should increase the proportion of covered material that can actually be recycled and should also make recycling programs more consistent and understandable for participants.

The analysis should also consider reasonable secondary effects beyond covered entities. Expanded education, more consistent packaging design and labeling, and changes in the materials producers introduce into Minnesota will not stop at the boundary between covered and non-covered entities. The Needs Assessment recognizes this principle in its waste-reduction analysis, noting that producer actions are unlikely to affect covered materials only at covered entities. If capture of covered materials at non-covered entities improved at a similar rate from the broader effects of education and system improvements, our analysis indicates that the statewide capture rate could increase by approximately another 13 percentage points.

These impacts, combined with the transition of currently non-recyclable packaging to reusable, refillable, recyclable, or compostable formats, suggest that a ten-year recycling requirement in the range of 75 to 80 percent should at minimum be evaluated as an achievable upper-bound scenario. The Needs

Assessment should model this scenario rather than allowing the comparatively modest results of the current future-state model to define the range MPCA considers.

We are also concerned with how the modeling accounts for the interaction between waste reduction, reuse, and recycling. The analysis appears to assume that reductions in recyclable packaging through waste reduction and reuse come from material that otherwise would have been captured for recycling, thereby lowering the modeled recycling capture rate. There is not sufficient justification for that assumption. Reduced packaging could come from either the captured or uncaptured portion of the recyclable stream. At minimum, the effect should be treated neutrally or evaluated through sensitivity analysis rather than assuming that successful waste reduction and reuse necessarily reduce recycling performance.

We recommend that the final Needs Assessment establish a more ambitious five-year recycling requirement based on the improvements its own collection and education assumptions indicate are achievable and model a ten-year upper-bound scenario that incorporates packaging redesign, continued improvements in collection and education, processing and end-market investments, and reasonable secondary improvements beyond covered entities. The statewide requirement should reflect what Minnesota can achieve if EPR is successfully implemented, not simply the outcome of the limited future-state scenario currently modeled.

Composting. The proposed composting requirement of 25 percent after five years and 25 percent after ten years also warrants reconsideration. There is no improvement at all between the two compliance periods, which is difficult to reconcile with the statutory direction toward continuous progress. The concern is compounded by the Needs Assessment's acknowledgement that the estimated 21 percent current composting rate is based on very limited data and is likely overestimated. MPCA should establish a requirement that anticipates continued improvement as collection and composting infrastructure develops and as producers redesign compostable covered materials to work effectively within Minnesota's organics recycling system.

Post-consumer recycled content

Some Advisory Board members recommend strengthening the proposed post-consumer recycled content (PCR) requirements. Strong demand for recycled materials is essential to supporting responsible end markets, strengthening recycling systems, and ensuring that materials collected for recycling are actually used to manufacture new products and packaging.

The Needs Assessment proposes an aggregate PCR requirement of 20 to 30 percent after five years and 30 to 40 percent after ten years. At Year 10, it proposes material-level ranges of 35 to 45 percent for paper and fiber, 20 to 30 percent for plastic, 35 to 45 percent for glass, and 45 to 55 percent for metal.

An aggregate requirement alone risks allowing materials that already incorporate relatively high levels of recycled content to compensate for limited progress in other materials. Even material-level requirements can mask significant differences within a category. For example, increasing recycled content in PET packaging should not substitute for meaningful progress in HDPE and PP applications. Similarly,

corrugated cardboard already incorporates substantial recycled content, while other paper products face different technical and supply constraints.

Lastly, while plastics, metals, and glass packaging need to adhere to this legislation, nearly all paper, whether or not it is packaging, falls under this as well. When setting targets pre-consumer recycled paper should also be measured and accounted for in a fair method that does not undermine post-consumer paper recycling.

These Advisory Board members recommend strengthening both the aggregate PCR requirement and material-specific requirements, particularly for plastics, while considering whether more differentiated requirements are needed within material categories. The goal should be to increase demand for recycled materials across the system, rather than allowing existing high-performing materials to satisfy requirements without driving meaningful improvements elsewhere.

Other Advisory Board members emphasize that producers have different capabilities and resources for incorporating PCR content. Sourcing recycled materials, establishing supply contracts, and testing products can take years, and obtaining recycled materials that meet necessary quality and food-contact requirements can be challenging. These members also caution that data from the U.S. Plastics Pact may not be representative of the broader producer market, since participating companies may have greater resources and experience incorporating PCR.

While Advisory Board members have different perspectives on the appropriate level and pace of PCR requirements, the Needs Assessment should clearly identify the technical, supply, and market barriers to increased PCR use and the actions necessary to overcome them. Current market limitations should inform the investments and implementation strategies needed to achieve stronger performance, rather than automatically determining the level of ambition for Minnesota's long-term requirements.

Taken together, we recommend that MPCA revise the statewide requirements in Chapter 11 to establish a substantially clearer trajectory for waste reduction, reuse, recycling, composting, and PCR content. Where the Needs Assessment's modeling identifies barriers to achieving higher performance, those findings should be used to identify the producer actions and investments necessary to overcome those barriers. Current system limitations should inform what producers need to fix, not determine how low Minnesota sets its expectations for future performance.

12. Measurement and certifications

Waste reduction measurement should reward actual source reduction

We support the Needs Assessment's recommendation to measure waste reduction by comparing producer-reported covered material introduced into Minnesota against a fixed baseline year and to report reductions both in aggregate and by covered material type.

However, Chapter 12 recommends that the PRO "may additionally choose" to track the actions responsible for reductions, including packaging redesign, reformulation, lightweighting, and reuse and refill. We recommend that this reporting be required rather than optional.

A reduction in the weight of a particular covered material does not necessarily mean that waste has been reduced. A producer could reduce the amount of one material by substituting another material, changing packaging formats, or making other changes that shift rather than reduce environmental impacts. Measuring only changes in tonnage would not give MPCA sufficient information to distinguish those outcomes from actual source reduction.

Producers should therefore be required to report the actions responsible for claimed waste reductions, including elimination of packaging, right-sizing, lightweighting, redesign, and transitions to reuse or refill systems. Where a reduction in one covered material results from substitution with another material, that change should also be reported. This information is necessary for MPCA to evaluate whether producers are actually reducing the amount of covered material generated and whether the program is advancing Minnesota's waste management hierarchy.

We recommend that the final Needs Assessment require reporting sufficient to verify the source and nature of claimed waste reductions and distinguish actual source reduction from material substitution or other changes that simply shift impacts between materials.

The Needs Assessment should recommend metrics for evaluating end markets.

We are concerned that Minnesota's recycling-rate methodology could allow material to be counted as recycled even when a significant portion is subsequently lost and never becomes usable recycled feedstock.

Section 12 explains that the statutory recycling rate measures material when it leaves a recycling facility, after accounting for contamination and excluding fuel or energy recovery. The Needs Assessment recognizes that downstream losses at a responsible end market are therefore not reflected in the recycling rate. As the report notes, if an end market has a 60 percent recycling yield, as much as 40 percent of material recorded as recycled could subsequently be lost and unavailable for manufacturing. While yield may not be the appropriate metric for all materials, the Needs Assessment should start to identify what those metrics could be such as residual rates or yields coming from reclaimers and mills, and other processors.

We are particularly concerned with the Needs Assessment's suggestion that Minnesota may need technology-specific yield requirements for non-mechanical recycling. The draft identifies pyrolysis and depolymerization as potential non-mechanical recycling technologies and notes that achievable yields may differ from mechanical recycling. These technologies are different and should be evaluated based on their actual material flows and environmental outcomes, but we do not support lowering the standard for successful recycling to accommodate the limitations of a particular technology.

Pyrolysis warrants particular scrutiny. The Needs Assessment identified no chemical recycling facilities accepting covered packaging materials in Minnesota and acknowledges that chemical recycling can produce feedstocks for new plastics or other chemical products, including fuel. It also recognizes that some non-mechanical processes may use incoming material as fuel and experience greater yield losses than mechanical recycling. Producing an intermediate product such as pyrolysis oil should not, by itself,

demonstrate recycling. A facility should demonstrate how much incoming discarded plastic ultimately becomes usable recycled material.

The same minimum yield or maximum residual rate should apply regardless of whether a facility uses mechanical recycling, pyrolysis, depolymerization, or another technology. Facilities should transparently report the disposition of all material inputs and outputs, including recycled feedstocks, fuels and fuel intermediates, process energy, residual waste, and other products. The same requirements should apply to gasification or other thermal conversion technologies if proposed as recycling end markets in the future.

Yield or residual rates are also not sufficient on its own to establish that an end market is responsible. The Needs Assessment notes that chemical recycling may be associated with toxic releases, particularly air or process emissions. Any facility must also meet Minnesota's responsible end market requirements for protection of the environment, public health, worker health and safety, and environmental justice communities.

The final Needs Assessment should ensure that responsible end market requirements measure whether discarded materials actually become usable recycled material, regardless of the technology used.

PCR content claims should require physical traceability

We support the Needs Assessment's emphasis on verification of post-consumer recycled content claims, including manufacturing records, supplier declarations, chain-of-custody documentation, third-party certification, and independent audits. However, the final Needs Assessment should provide clearer direction on what recycled-content accounting approaches are acceptable.

Producers should be required to demonstrate a physical connection between post-consumer recycled material used in manufacturing and the covered material for which PCR compliance is claimed. Accounting approaches that allow recycled-content attributes to be assigned to products without that physical connection should not demonstrate compliance.

This is different from using material mass-balance accounting to reconcile recycled material received, inventory, production, and sales to identify missing material, impossible yields, or double counting. We support that use of material accounting as a verification tool. It is also different from reasonable allocation methods used to determine the share of products sold or distributed into Minnesota.

This distinction is particularly important for chemical recycling. The Needs Assessment notes that certification systems such as ISCC use mass-balance chain-of-custody accounting for chemically recycled materials. These systems should not allow recycled-content attributes to be assigned to covered materials based on material physically converted to fuels or fuel intermediates, directed to other non-recycled products, consumed as process energy, or lost during processing.

For pyrolysis in particular, production of pyrolysis oil does not establish that an equivalent amount of discarded plastic ultimately becomes new plastic. Where recycled feedstock enters a manufacturing system with multiple outputs, PCR claims should reflect recycled material physically incorporated into covered materials rather than attributes allocated independently of physical material flows.

We recommend that the final Needs Assessment require PCR claims to be supported by physical chain-of-custody documentation demonstrating incorporation of recycled material into the covered materials for which compliance is claimed. Third-party certification should verify these requirements, not provide an alternative means of claiming recycled content disconnected from physical material flows.

PCR requirements should increase actual demand for post-consumer recycled material and result in recycled material being physically incorporated into new products.

12.2 Third Party Certifications

Page 140 “Compostable covered material that is taken to a composting facility or potentially an anaerobic digestion facility will be subject to the removal of any contamination before it enters the process. The process is effectively a manufacturing process producing compost, in the case of composting, or biogas and digestate or a biochar product in the case of anaerobic digestion. On this basis it can be assumed that the point of measurement will be the point before the compostable covered material is fed into the composting or anaerobic digestion process. This would align with the measurement approach required at a recycling facility.”

This is not how all compost facilities manage contamination. They should not be required to remove all contamination before it enters the process. This language is not appropriate for composting facilities and should not be included in this report.

13. Reimbursement Rates

Reimbursement rates should reflect the actual cost of providing efficient covered services

We generally support the Needs Assessment's recommended reimbursement framework. For organized collection systems, the report recommends reimbursement based on demonstrated net costs. For open-market collection, where actual cost data are generally unavailable, it recommends predetermined rates based on estimated efficient costs for geographic groupings, with an appeal process allowing service providers to demonstrate that the modeled rate does not reasonably reflect their actual costs. For example a small business will need to spread their fixed costs, such as rent, property taxes, and insurance, over fewer tons or households than a large business and if that large business owns their own property and is able to self-insurance they will also have fewer overall costs than a small business.

We support accounting for legitimate differences in the cost of providing service across Minnesota. Population and collection-point density, housing type, collection method and frequency, transportation distances, labor costs, vehicle requirements, and other regional factors can substantially affect costs. These differences should be reflected in reimbursement rather than treated as inefficiency.

The final Needs Assessment should make clear that "efficient cost" does not mean the lowest possible cost. Efficient service must also account for service quality, accessibility, worker health and safety, contamination management, material capture, output quality, and other factors necessary to provide effective covered services. A rural collection route, multifamily program, or facility producing higher-quality recycled commodities may legitimately cost more than a superficially comparable service.

We strongly support retaining an actual-cost appeal for open-market service providers. The methodology will necessarily rely on modeled costs and geographic groupings, and the Needs Assessment acknowledges that some providers may receive less than their actual costs. The appeal process should therefore be accessible and provide a meaningful opportunity for service providers to demonstrate legitimate costs that are not adequately captured by the model.

We are also concerned about the amount of authority the draft gives the PRO to determine whether costs are reasonable. The Needs Assessment contemplates PRO involvement in procurement, benchmarking service providers, requiring improvement plans, and potentially limiting reimbursement when improvement plans are unsuccessful. The PRO has a direct financial interest in minimizing reimbursement costs and should not be the final arbiter of whether a service provider's costs are reasonable. Decisions to limit reimbursement should be subject to clear standards and MPCA oversight or an independent review process.

Finally, cost efficiency should be considered alongside recycling performance. The Needs Assessment appropriately recommends standardized sampling and identifies processing yield and output quality as important performance measures. A facility with lower processing costs but greater material losses or lower-quality outputs is not necessarily providing a more efficient recycling service. Furthermore, a collection company that underpays it’s staff and does not maintain their vehicles may have lower costs initially but that will show up in poor service as when they are unable to retain staff or working vehicles, drivers will not have time to leave tags and educate residents about what can put in the cart or they will not complete their routes and recycling will not get collected (or worse, it may be dumped in a trash truck) and residents will lose faith in the recycling program collection targets will not be met.

We recommend that the final Needs Assessment preserve the proposed geographic reimbursement methodology and actual-cost appeal while establishing clear standards for efficient costs, meaningful performance measures, and independent oversight of reimbursement disputes.

The Needs Assessment should address the equity impacts of partial reimbursement

The Needs Assessment describes the statutory reimbursement phase-in under which producers must reimburse at least 50 percent of eligible net costs by February 1, 2029, 75 percent by February 1, 2030, and 90 percent by February 1, 2031 and thereafter. However, the report does not adequately examine who will bear the remaining costs or whether those costs could affect equitable access to covered services.

This is particularly important because the Needs Assessment documents significant differences in recycling access and service conditions across Minnesota. Rural communities, multifamily properties, lower-income communities, and areas that already face higher collection and transportation costs may have less ability to absorb unreimbursed costs.

The final Needs Assessment should evaluate how the reimbursement phase-in could affect households, local governments, and service providers in different parts of the state. The analysis should consider whether the unreimbursed share could contribute to higher rates, reduced service levels, delayed service expansion, or other barriers to achieving equitable recycling access.

The stewardship plan should also include mechanisms to ensure that partial reimbursement does not undermine the expansion or maintenance of covered services in communities where costs are legitimately higher. A service should not be considered inefficient simply because geography, housing type, transportation distance, or other structural factors make it more expensive to provide.

As reimbursement increases, MPCA should evaluate whether covered services are becoming more affordable and accessible and whether geographic and environmental justice disparities identified in the Needs Assessment are being reduced.

We recommend that the final Needs Assessment evaluate the equity impacts of the reimbursement phase-in and identify mechanisms to ensure that partial reimbursement does not undermine the affordability, maintenance, or expansion of covered services, particularly in communities where legitimate service costs are higher. MPCA should track whether producer reimbursement is reducing geographic and environmental justice disparities in access to covered services over time.

14. Responsible Markets

Responsible end market standards should be established independently of the PRO

We are concerned with the Needs Assessment's reliance on CAA's draft Responsible End Market Standard as a potential framework for Minnesota. The Needs Assessment concludes that CAA's draft standard is "broadly aligned" with Minnesota's law and could provide a useful framework for establishing responsible end market requirements but did not provide much information beyond that.

CAA is the PRO responsible for implementing Minnesota's EPR program and financing the management of covered materials. It should not also play a central role in defining the standards used to determine whether the end markets it selects and pays qualify as responsible. Relying solely on a standard developed by the regulated entity creates a significant conflict of interest and risks allowing the PRO's operational and financial interests to influence the standards against which its own performance will be evaluated.

While it may make sense to take some of the useful framework that CAA has developed, ultimately Minnesota should ensure that responsible end market requirements are based on Minnesota law, the findings of the Needs Assessment, and standards necessary to protect the environment and public health and ensure covered materials are actually recycled. At a minimum, those requirements should address legal and permit compliance, environmental and worker protections, material traceability, downstream disclosure, actual recycling outcomes, and the minimum recycling yield discussed in Section 3 of these comments. CAA’s framework, while containing some helpful components, does not perfectly align with Minnesota’s needs and the Needs Assessment should, at a minimum outline those differences and provide options for how to bridge that gap.

We recommend that the final Needs Assessment not solely rely on CAA's Responsible End Market Standard as the basis for Minnesota's requirements. MPCA should establish clear, independent responsible end market standards, with third-party certification used only to verify compliance with those state-established standards.

15. Environmental impacts of materials

Environmental findings must inform EPR program decisions

The Needs Assessment identifies significant environmental and public health impacts associated with covered materials across their lifecycles. These findings should directly inform decisions about statewide requirements, waste reduction and reuse strategies, infrastructure investments, and responsible end markets. We recommend that MPCA explicitly identify how the findings will be used to prioritize source reduction, reduce toxic substances, and ensure that investments under the EPR program deliver meaningful environmental and public health benefits.

Environmental impacts not fully captured by lifecycle analysis

The Needs Assessment acknowledges that its lifecycle assessment methodology does not adequately capture several important impacts associated with plastics, including microplastic pollution, plastic leakage, and exposure to hazardous additives. These omissions may understate the environmental and public health impacts of plastic packaging. We recommend that the report clearly acknowledge these limitations when interpreting comparisons between materials and ensure that incomplete lifecycle data do not undermine efforts to eliminate unnecessary and problematic packaging, reduce toxic substances, and prevent waste at the source.

Environmental justice and cumulative impacts

On page 520, the Needs Assessment reports that approximately 18 percent of environmental justice areas are within one mile of a landfill and 4 percent are within one mile of a waste-to-energy facility. We recommend clarifying whether these figures include areas where only a portion of the geographic boundary falls within one mile and, where feasible, identifying the population living within those distances.

More importantly, the environmental justice analysis should consider cumulative environmental and public health impacts, rather than facility proximity alone. We recommend that MPCA explicitly identify how these findings will inform infrastructure investments, facility siting, collection systems, and responsible end market requirements. Minnesota's EPR program must reduce existing environmental burdens and avoid directing additional pollution into communities already disproportionately impacted by waste management facilities and other sources of pollution.

16. Toxic Substance Review

The toxic substances assessment should identify how toxics affect recyclability and marketability

We support the Needs Assessment's recognition that producers have the greatest ability to prevent toxic substances from entering covered materials and that eliminating toxics at the source can prevent impacts throughout the material lifecycle. The Needs Assessment also recognizes that toxic substances can interfere with recycling and composting and can result in contaminated material streams or residuals requiring disposal.

However, the statutory requirement is not simply to identify toxic substances that may be present in packaging. The Needs Assessment must assess whether intentionally added toxic substances limit one or

more covered material types from being used as marketable feedstock and identify best practices producers can implement to reduce those substances using verifiable methods.

The draft identifies chemicals of concern and evaluates their potential toxicity, but acknowledges that it was generally unable to determine the quantity of toxic substances present in packaging. As a result, the analysis does not clearly identify which covered material streams are currently limited as marketable feedstock because of intentionally added toxics, or how those limitations should affect recyclability, compostability, collection-list decisions, or responsible end-market requirements.

We recommend that the final Needs Assessment more directly connect the toxic substances analysis to material management. For covered materials where intentionally added toxics can contaminate recycled or composted feedstock, limit end markets, or prevent safe circular use of the material, the Needs Assessment should identify those limitations and the producer actions necessary to address them. Producer actions should prioritize eliminating intentionally added toxic substances and avoiding regrettable substitutions, with compliance supported by supplier certificates, testing, or other scientifically demonstrated verification methods.

Where available information is insufficient to make that determination, the final Needs Assessment should identify the additional producer reporting, chemical disclosure, supplier documentation, or testing necessary to make it. Lack of publicly available information about intentionally added chemicals should not result in an assumption that those chemicals do not affect recyclability, compostability, or end-market viability.

The needs assessment should also distinguish between intentionally added toxics, either due to actual recipes or through manufacturing equipment and process, and unintentional toxics that were added due to environmental or other factors beyond manufacturing control.

A material should not be considered effectively recyclable or compostable if intentionally added toxic substances prevent it from becoming safe, marketable recycled or composted feedstock.

On page 528 the report refers to “toxic, non-recyclable polymers such as PS and PVC” don’t provide any documentation to back up this allegation until page 537 and in that list they don’t use the abbreviated terms so an uneducated reader might think the reference on page 527 was biased and without reference. We recommend Eunomia ensure any references to “toxic materials” be clearly labeled with documented evidence to explain why this item is toxic, such as the styrene in PS (polystyrene) being carcinogenic (IARC group 2A).

Citations mentioned and/or recommended we incorporate from meeting:

- Vincoff, Sophia, et al. "The known and unknown: investigating the carcinogenic potential of plastic additives." *Environmental Science & Technology* 58.24 (2024): 10445.
- Monclús, L., et al. "Mapping the chemical complexity of plastics." *Nature* 643.8071 (2025): 349-355.

- Emerging investigator series: unpacking PET: comparative analysis of leachable and extractable contaminants from virgin and recycled polyethylene terephthalate bottles and textiles | Environmental Science: Processes & Impacts | The Royal Society of Chemistry

17. **Best Practices for awareness and education**

Education should support a well-designed system, not compensate for poorly designed packaging

We support strong, consistent, culturally responsive education and outreach as part of Minnesota's EPR program. Residents should receive clear information about what materials are accepted, how to access recycling, reuse, and composting services, and how materials should be prepared.

However, education should not be treated as a substitute for packaging redesign, convenient collection, adequate processing infrastructure, clear labeling, or responsible end markets. If a material requires unusually complex consumer behavior to be successfully recovered, or if residents routinely cannot distinguish it from materials that contaminate the recycling or composting stream, that is relevant to whether the material is appropriate for the system in the first place.

We recommend that the final Needs Assessment distinguish between contamination or participation problems that can reasonably be addressed through education and those that reflect packaging or system-design problems requiring producer action.

The EPR program should make recycling, reuse, and composting easier for Minnesotans rather than relying on increasingly complicated instructions to make difficult packaging work within the system.

Minnesota needs standardized contamination and material-loss data

The Needs Assessment documents that contamination affects collection, transfer, sorting, recycling, and composting operations, but also acknowledges significant limitations in the available data. For organics recycling in particular, the report notes that very few comprehensive contamination audits have been conducted and that the analysis therefore relies substantially on self-reported information from facilities and local governments.

The EPR program provides an opportunity to substantially improve this information. We recommend that the final Needs Assessment identify standardized contamination and material-loss measurement as a priority for the first stewardship plan. Sampling protocols should allow MPCA to understand contamination entering facilities, material lost from residents not participating, collection, sorting and processing, the causes of contamination, and the costs those losses impose on service providers.

These data should be used to identify where responsibility lies and how best to target it. Contamination caused by confusing or poorly designed packaging should inform producer redesign and fee incentives. Contamination caused by inconsistent collection instructions may require standardized education. Processing losses may identify infrastructure or design needs. Material loss studies identify if residents need more education and encouragement to recycle specific materials as well as what material is lost in

the collection, sorting, and processing the material helping identify when targeted education is needed vs facility improvements.

Education should not become the default response to contamination when the underlying problem is packaging design, labeling, collection-system design, or processing limitations.