



Plastics Recovery Assessment Advisory Workgroup

Meeting #1 Notes: May 30, 2013 10 am to Noon

Oregon Department of Environmental Quality

Workgroup attendees:

Elizabeth Bedard, APR (by phone)

Allison Briggs-Ungerer, AOR

Kevin DeWhitt, Agilyx

Kim Holmes, SPI

Julie Jackson, Republic Services (by phone)

Nicole Janssen, Denton Plastics

Laura Leebrick, ORRA

David Michaud, Tomra

Patty Moore, Moore Recycling (by phone)

Cholan Muthukumarasamy, Agilyx

Megan Ponder, City of Portland

Mark Saelens, Lincoln County (by phone)

Vinod Singh, Far West Fibers

Carolyn Stein, Bring Recycling (by phone)

Matt Stern, Waste Management (by phone)

Matt Tracy, Metro

Other attendees, in person and by phone

Suzanne Bannan

Tim Budwala

Leonard Cano

Nancy Carr

Wendy Cecil

Joanie Cosgrove

David Dutra

Felicity Fahy

Ashley Farrell

Darol Funk

Justin Gast

Mary Sue Gilliland

Keefe Harrison

Dean Kampfer

Brandon Lesowske

John Lucini

Cody Marshall

Shannon McClelland

Jeff Murray

Shelly Paredes

Ilsa Perse

Jerry Powell

Kristin Power

Loree Price

Joshua Proudfoot

Rachael Shea

Holly Stirnkorb

Karlis Vasarais

Susan Walsh

Michael Weatherman

Jordan Palmeri facilitated the meeting. A number of people reported issues in joining the webinar.

Peter Spendelow presented the following information on the reasons for doing this project, the scope and goals of the project, the roles of committee members, DEQ, and the contractor (to be selected)

Introduction: reasons for the project. If you look at the amount of materials of each type currently being disposed of not from a weight standpoint, but instead by the potential energy savings that could occur if that material were recovered and well-utilized, plastics is the material with the highest potential for energy savings of all material from Oregon that is disposed of. From a greenhouse gas standpoint, increased plastics recovery could also produce significant greenhouse gas saving, although not as high as some other materials such as food and paper.

Scope and goals of the project. The ultimate goal of the project is to increase the recovery of plastic, but the proximate goal is to produce a report that contains information and analysis to guide governments and stakeholders in increasing the recovery of plastics.

The project is funded by Metro with funds committed of up to \$70,000. The funds will be used to hire a contractor to gather the information and produce the draft report with oversight and assistance from

DEQ and the advisory group. We'd like to solicit comments as to whether the contract developed here should potentially use the whole \$70,000, or if we should hold some money in reserve for if we decide we want to do different work on this project than what we originally envisioned.

The main roles of the advisory committee are to:

1. Provide feedback as the project progresses to help guide us to a stronger project, and
2. Provide access to resources, contacts, and data to help gather and compile information

Regarding timeline, it will take at least 3 months to solicit and hire a contractor. The contractor will then take a month or two to initially scope the issues and compile some data to begin filling out the report. The advisory group will then meet to review and provide further guidance on the materials, sorting technologies, and other aspects to be pursued further. The contractor and DEQ will then work together over the next couple of months to gather more data and further refine the document and proposals. The advisory group will meet again to review and provide more guidance on the report and the proposals and date in the report. The contractor will then in the next couple of months take this feedback and information to produce a final draft report. The advisory group will then review this draft, and the contractor and DEQ will use this information to finalize this report hopefully by June 2014.

Brainstorming the report content.

Over the next hour, Peter and Jordan lead the advisory group to brainstorm what should be in the scope of work and in the final report of the project. Jordan took notes and shared his screen on the webinar (and projected for those directly attending the meeting) so people could see what he was writing down to capture their comments. What follows is the notes as developed in that brainstorming session:

Report Content - Draft outline

- 1) Plastics collection and disposal by type
- 2) Generation of plastics by sector
- 3) Sorting technologies for separating and purifying plastics
- 4) Collection systems
- 5) Markets and demand for recovered plastics
- 6) Potential functional categories for collection of plastics
- 7) Further analysis of promising functional categories/collection and sorting methods
- 8) Limited life-cycle analysis of the potential impact of the increased recovery programs.
- 9) Recommendations
- 10) Other content?

1) Plastics Collection and Disposal by Type

- a. What factors should we use for categorizing plastics?
 - i. Source of generation – home versus business
 - ii. Resin type (caution due to composites)
 - iii. Melt index (bottle vs tub)
 - iv. Original use of the plastic – what was it used for?
 - v. Compostable / biodegradable
 - vi. Durables vs disposables

- vii. Size of plastic item – large/med/small
 - viii. Compatibility of mixed loads for different levels of processing
 - ix. Rigid vs film
 - x. Thermoset vs thermoplastics
 - xi. Contamination?
- b. Should we deal only with large commodity plastics or also include specialty plastics?
- i. Specialty plastics that have enough volume may have economic value too
 - ii. Yes. Include, but have focus be on commodity side and take a broad view in the report
 - iii. Could be easier for businesses rather than residential
 - iv. Looking towards future there will be more specialty plastics: Try to project where things are going
- c. What data sources for plastics production, recycling, and disposal should be included beyond what is in the background paper?
- i. Production data is available. SPI. ACC has annual resin report for North America.
 - ii. International Living Future Institute. Red List. Jason McClennan. Waste disposal data possibly.
 - iii. Connect to BC b/c they have a ban on packaging (April 2014) ...OH, MA, CA, FL

2) Generation of Plastics by Sector

- a. What sectors should be looked at for potential sector-specific collection and recovery programs. Examples of sectors include:
- i. Grocery stores and distribution centers
 - ii. Dry goods distribution, warehouses
 - iii. Hospitals
 - iv. Office buildings
 - v. Automotive services
 - vi. Construction
 - vii. Demolition
 - viii. Residential
 - ix. Agricultural
 - x. Industry (semiconductor and others...)
 - xi. Textiles / clothing
 - xii. Recycling processors (many types)
 - xiii. Electronics
 - xiv. Auto shredders
 - xv. Marine (boat wrap/foam) Transportation main category with subcategories
 - xvi. Roofing membrane, pipe manufacture, (industry?, construction?)
 - xvii. Schools, university, govt's ?? (hospitals, industry?)
 - xviii. Hospitality/food service
 - xix. CA can look at their reports to help categories generation sectors. Nancy Carr. 2014 study coming with potential for plastics focus. Possible partnership. Example - nondurable wholesale distributors.
 - xx. Marine debris. Ocean beach debris.
 - xxi. retail
- b. What sort of information do we want to compile by sectors?
- i. Quantity / resin mix / cleanliness
 - ii. Backhauling

- iii. Access to collection and markets

3) Sorting Technologies for Separating and Purifying Plastics

- a. What sorting technologies should we compile information about?
 - i. Optical sorting (ACC funded two assessments already - Jerry Powell can provide copy of entire study)
 - ii. NIR /MIR / XRF / Raman Laser
 - iii. Visual hand sorting
 - iv. Sink / float / downstream separation
 - v. Air elutriation
 - vi. Electrostatic
 - vii. Eddy current / magnet
 - viii. Container paper separators
- b. What sort of information should we compile about each technology?
 - i. Effectiveness / versatility / throughput
 - ii. Quantity of each technologies / what is regional / national capacity
 - iii. Cost / initial, plus lifespan and maintenance costs
 - iv. Ecological impact (energy/resources used by technology) water and air emissions / carbon intensity for recovery /
 - v. physical footprint. How big is it.
 - vi. Limitations
 - vii. Match sorting type to material
 - viii. Volumes needed to be cost effective

4) Collection Systems

- a. What collections systems should be investigated for collecting plastics?
 - i. Curbside commingled residential
 - ii. Curbside commingled commercial
 - iii. Commercial separated pickup
 - iv. Depots
 - v. Material recovery facilities (MRF)
 - vi. Direct B to B services (direct collection from generator)
 - vii. Retail
 - viii. Backhauling
 - ix. Deposit systems

5) Markets and demand for recovered plastic

- a. What are the main potential uses for recycled plastic, and the relative value of the plastic for those uses?
 - i. Reuse
 - ii. plastics for oil
 - 1. energy
 - 2. lubricants / petro chemicals / plastics
 - iii. De-polymerization to produce a monomer
 - iv. Combustion for industrial energy
 - v. Reducing agent for iron ore
 - vi. Mechanical recycle
 - 1. Closed loop
 - 2. High performing (electronics)

- 3. Low performing (lumber / nursery pots)
 - vii. Comment: need to consider if end use is "single use" or "multiple reuse". "recyclability"
 - viii. Comments: how will LCA of factor into this?
 - 1. How will manufacturing of plastics come into play?
 - 2. Will things be more uniform or more complicated for the recyclers
 - ix. What could be perpetual use?
 - x. What could be one-time use?
 - xi. Comment: What really happens to plastics being sent to Asia? Is this really better or worse than what we can do in Oregon or in US?
 - b. What are the markets that can be used for low-valued, mixed, or contaminated plastics?
 - c. What limitations are there on the amount of plastic that could be used by specific markets or used for specific uses?
 - d. Does sufficient processing capacity exist to prepare plastics to be used for these markets?
- 6) Potential functional categories for collection of plastics.
- a. What functional categories of plastics should be evaluated initially for collection for recovery. "Functional Categories" refers to combining different types of plastics together for collection purposes.
 - i. Mixed rigids
 - ii. Bottle grades vs tubs
 - iii. Film (polyolefin vs PET, PVC)
 - iv. Foam
 - v. E-plastics
 - vi. Auto shred
 - vii. Thermoforms (SPI + NAPCOR funding a study)
 - b. Should different functional categories be considered for specific sectors?
- 7) Further analysis of promising functional categories/collection and sorting methods
- a. After doing the initial screening and analysis of functional categories, we will pick out a limited number of functional category/collection and processing system combinations that look to be the most promising, to conduct more detailed analysis. This analysis will look at the potential amount of material that may be recovered, the potential uses for that material, and potential barriers to implementing the programs.
- 8) Limited life-cycle analysis of the potential impact of the increased recovery programs.
- a. Based on limited funds, this analysis will be based on existing studies and estimates based on assumptions, rather than conducting full scale life cycle analyses of the different options
- 9) Recommendations
- 10) What is missing? Ideas for additional content?

- a. Need information on how plastics are used
- b. Will DEQ address any legislative issues in the report?
 - i. The recommendations can address technical, policy, regulatory, markets, legislation ...etc....
- c. Economic impacts / jobs– can we cover this?
- d. Patty Moore has a good presentation on plastics...
- e. Need a scope of the current system. What are the strengths and recommendations.
- f. Will there be any info on compostable vs biodegradable plastics? Any info on the impact these plastics have on the finished product (compost)
- g. Best practices evaluated? How did other places like Europe achieve high recovery rates
- h. Case studies of successful programs?

11) Potential Partnerships

- a. What information and resources might workgroup members offer?
 - i. ACC would be good to talk to
 - ii. From product design perspective, each industry has an association
- b. What other partnerships might be possible with other states and industry and other stakeholders?
 - i. Waste comp work in CA. They can add plastics categories
 - ii. Assoc of Post Consumer Plastics Recyclers. Working to get more detail on plastics on a Vermont study
 - iii. Practice green health – for healthcare/ hospital industry
 - iv. HPRC
 - v. ISRI – new plastics commodity division
 - vi. SPI – launching recycling committee. They represent supply chain
 - vii. Any presentation at Jerry Powell's conference
 - viii. AOR / ORA / National Recycling Association
 - ix. SWANA
 - x. Higher education – CURC
 - xi. US plastics recovery – based out of Atlanta
 - xii. CA conversion tech group (Kobe Skype from LA county)
 - xiii. BC stewardship group. has trade group to deal with packaging on front end
 - xiv. NC, PA recycling markets development
 - xv. WI – DNR commissioned a similar study recently
 - xvi. MA DEP
 - xvii. PAC Next
 - xviii. Ameripen
 - xix. OUS

12) Selection Committee

- a. Carolyn - BRING
- b. David Michaud - Tomra
- c. Megan Ponder – City of Portland
- d. Matt Tracy – Metro
- e. Vinod Singh

Other - the group agreed that it would be good to produce a guide to understanding plastics and plastic recycling to educate people and help them better understand the project and the recommendations to be implemented. Patty Moore has a presentation and other resources that would be helpful in putting this together.

The meeting ended a little after noon.