

Commingled Recycling Systems – Preventing Contamination at the Curb, MRF and Mill

The Issue

The rise of commingled collection systems in the northwest has brought about many changes in the way we handle, process, and market residential recyclables collected at the curb. The positive changes include higher efficiencies and reduced worker injuries on collection routes, higher participation rates by the public, and higher volumes of recyclables collected. The unintended negative consequences of the commingled collection system include higher contamination rates of incoming materials, higher volumes of materials needing single-stream processing at regional MRFs, recyclable materials being sent to the wrong mills in the bale of another commodity, public confusion due to inconsistent material acceptance lists of collection programs, and reliance on export markets.

The gain in efficiencies that commingled collection programs provide at the curb has caused a trickle-down effect of lost materials, efficiency, and quality at the MRFs and mills. The following are the key problems with the current commingled recycling system:

- Data from two studies of MRFs in the Puget Sound, WA and Portland, OR indicate that significant amounts of recyclable materials are being ‘lost’ as a result of moving through the commingled recycling system (collection, processing, and end market).
- While some of the ‘lost’ materials are ending up in the residue at the MRF, a larger problem is these materials are improperly sorted and are getting sent to the wrong markets, mixed up with another commodity.
- When metal and plastic containers end up in a paper bale and are sent through the pulper at a paper mill, these once recyclable products are headed for the landfill. Pulper rejects have increased seven to ten times as suppliers have moved to commingled collection systems.
- Due to poor quality of paper sorted from commingled systems, many mills have reduced the amount of recycled feedstock they use to make paper—reducing the production of recycled fiber for sale locally and threatening the long-term viability of local paper mills.
- Because of single stream commingled recycling, glass is a serious problem at the MRFs and mill. Most of the glass is being downgraded for construction aggregate.
- The benefits of recycling are realized when those materials replace raw materials in product manufacturing. Upstream impacts in manufacturing are ten to twenty times greater than end of life impacts. These lost resources amount to much more than lost landfill space. This becomes even more important as the focus shifts to looking at how recycling plays a role in reducing greenhouse gas emissions.
- MRFs are designed to process flats (paper, cardboard) and containers. Anything small like broken glass or flexible, like plastic bags, causes problems at the MRFs and impacts the quality of the other commodities.
- In the changing global marketplace, the existing trade association commodities standards are not working to ensure that quality bales reach the mills.

Working Towards Solutions—A Regional Stakeholder Process

On July 11, 2007, the Contamination in Commingled Recycling Systems Standards & Guidelines Initiative stakeholders met in Seattle, Washington to discuss the issue and kick off their workgroup. Stakeholders involved in the Initiative included collectors, MRFs, mills, non-governmental organizations, and local and state government agencies. The workgroup’s vision was to develop a standard and guidelines for commingled recycling systems that will reduce cross-contamination of recycled materials, increase the quality and quantity of materials recycled,

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and capture the highest percentage of materials that are intended to be recycled. The timeframe for this work was approximately one year—July 2007 to September 2008.

The U.S. Environmental Protection Agency Region 10 served as a convener. Organizations represented at some or all of the stakeholder meetings include Association of Oregon Recyclers; Blue Heron Paper Company; Clark County, WA; City of Eugene, OR; City of Portland, OR; City of SeaTac, WA; City of Seattle, WA; City of Sedro Woolley, WA; City of Vancouver, WA; Douglas County, WA; Far West Fibers; Glass Packaging Institute; King County, WA; Metro, OR; NORPAC; Tacoma Recycling Company, Inc.; Oregon Department of Environmental Quality; Oregon Recycling Systems; Oregon Refuse & Recycling Association; RABANCO | Allied Waste Industries; SP Recycling Corporation; Smurfit-Stone Recycling Company; Washington Refuse & Recycling Association; Washington State Department of Ecology; Washington State Recycling Association; Washington Utilities and Transportation Committee; Waste Connections; and Waste Management.

Outcomes

To accomplish its vision, the Contamination in Commingled Recycling Systems Standards & Guidelines Initiative workgroup broke into three subgroups: Standards and Guidelines, Evaluation, and Marketing. The following documents and tools were a result of the subgroups:

- Processing goals for material recovery facilities (MRFs) and collection guidelines and standards for collectors of commingled materials
- A protocol and measuring system for evaluating whether the processing and collection standards are being met
- Tools to ensure that the standards and guidelines are incorporated into contracts, purchasing, policy, and permitting

Recommendations

Based a year of research and dialogue, the stakeholders involved in the Contamination in Commingled Recycling Systems Standards & Guidelines Initiative make the following recommendations to prevent contamination at the curb, MRF and mill:

- Local governments who contract for collection or processing of commingled recyclables require that their service provider(s) meet the standards and guidelines set forth by this Initiative
- Local governments who adopt minimum service level plans or ordinances require that their service provider(s) meet the standards and guidelines set forth by this Initiative
- Haulers that collect commingled recyclables from residences agree to measure their contamination rates based on the criteria set forth by this Initiative
- Material recovery facilities that process residential commingled recyclables agree to measure their outgoing commodities and residual based on the criteria set forth by this Initiative
- A third party organization acts to provide annual certification for interested haulers and MRFs who meet the criteria set forth by this Initiative

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