

Memo



Metro

600 NE Grand Ave.
Portland, OR 97232-2736

Date: October 5, 2016
To: Solid Waste Alternatives Advisory Committee (SWAAC)
From: Roy Brower, Chair – Material Recovery Facility/Conversion Technology Subcommittee (MRF/CT)
Subject: MRF/CT Subcommittee Recommendations

Executive Summary

This memo provides MRF/CT Subcommittee recommendations to Metro's Solid Waste Alternatives Advisory Committee (SWAAC) regarding Metro's role in oversight and regulation of material recovery facilities that process commingled source-separated recyclable materials (SSR MRFs), conversion technology (CT) facilities and specific material recyclers (SMRs). These recommendations were developed after discussions at seven subcommittee meetings that evaluated the public benefits of increased oversight for the different classes of facilities. The Subcommittee consisted of 15 members (see Attachment A) representing industry, government, advocacy groups and citizens. Stakeholder feedback on this recommendation memo was received between August 12th and September 12th, 2016. Comments received, along with Metro responses, are compiled in Attachment B. The key recommendations contained in this memo are unanimously supported by the Subcommittee membership.

The key SSR MRF recommendations are:

1. **Metro should authorize SSR MRFs.** Material recovery facilities that receive and process commingled residential and commercial source-separated recyclable materials should be authorized and inspected by Metro similar to other classes of material recovery facilities.
2. **Metro should establish operating standards for SSR MRFs.** SSR MRFs should be subject to operating standards similar to those for other material recovery facilities and meet the following goals described in Metro Code Chapter 5.01:
 - a. Protect the environment.
 - b. Ensure human health and safety.
 - c. Avoid nuisances.
 - d. Ensure material recovery.
 - e. Ensure record-keeping and reporting.

The key CT facility recommendations are:

1. **Metro should continue to franchise CT facilities that manage putrescible waste.** A facility that receives *putrescible solid waste* for a conversion technology process should be subject to a Metro-issued franchise similar to other types of solid waste facilities.
2. **Metro should license certain CT facilities that manage non-putrescible waste.** A facility that receives and processes *non-putrescible solid waste* prior to introducing the waste into a conversion technology process should be licensed and inspected by Metro similar to other types of licensed solid waste facilities.
3. **Metro should establish operating standards for CT facilities.** A facility that is subject to Metro authorization (i.e. solid waste license or franchise) should be subject to

operating standards similar to those for other authorized facilities and meet the following goals described in Metro Code Chapter 5.01:

- a. Protect the environment.
 - b. Ensure human health and safety.
 - c. Avoid nuisances.
 - d. Ensure material recovery.
 - e. Ensure record-keeping and reporting.
4. **Metro should add a definition to its Code for “conversion technology” and define it using the current State definition¹.** See page 9 for the complete definition.

The key recommendations for the continued exemption of certain specific material recyclers (SMRs) and conversion technology (CT) facilities are:

1. **Metro should continue to exempt certain SMRs from obtaining a license.** Facilities that receive and process specific single stream materials with intrinsic value in established markets such as scrap metal, plastics, papers, or other similar commodities should continue to be exempt from obtaining a Metro license at this time.
2. **Metro should continue to exempt certain CT facilities from obtaining a license.** A facility that receives feedstocks that have already been extracted from mixed solid waste and processed to meet prescribed specifications and largely resemble commodity feedstocks (material streams) for direct introduction into a conversion technology process should continue to be exempt from obtaining a Metro license. This exemption would be similar to those provided to other industrial or manufacturing facilities when the operation of those facilities presents low potential risk to the environment, or to neighboring businesses and residential communities (e.g., odors, dust, noise, vectors, litter, fire safety etc.).

¹ OAR 340-093-005 Definitions (28) Conversion Technology

Introduction

This memo provides MRF/CT Subcommittee recommendations to Metro's Solid Waste Alternatives Advisory Committee (SWAAC) regarding Metro's role in oversight and regulation of material recovery facilities that process commingled source-separated recyclable materials (SSR MRFs), conversion technology (CT) facilities and specific material recyclers (SMRs). These recommendations were developed after discussions at seven subcommittee meetings that evaluated the public benefits of increased oversight for the different classes of facilities. The Subcommittee consisted of 15 members (see Attachment A) representing industry, government, advocacy groups and citizens. Stakeholder feedback on this recommendation memo was received between August 12th and September 12th, 2016. Comments received, along with Metro responses, are compiled in Attachment B. The key recommendations contained in this memo are unanimously supported by the Subcommittee membership. This memo includes background information, Metro Council direction, the charge of the subcommittee, a discussion of changes to the recycling system in the region which have impacted material processing, and the detailed recommendations of the Subcommittee. The recommendations will be presented to SWAAC at their October 12 meeting.

Background

This section provides background information leading to the MRF/CT Subcommittee recommendations regarding Metro's potential role in oversight and regulation of SSR MRFs that receive and process commingled recyclable materials (aka "curbside recyclable materials" or "program materials") and conversion technology facilities that receive solid waste and introduce that solid waste into a conversion process.

As the agency tasked with planning and management of the region's solid waste system, Metro has an obligation to the public to ensure the materials intended for reuse, recycling, and other purposes are handled properly and sent to appropriate and legitimate markets. Certain facilities have been largely exempted from Metro's licensing and oversight responsibilities, creating different rules for similar types of facilities and limiting Metro's ability to ensure that solid waste, including source separated materials, are handled properly. Metro is also obligated to ensure that facilities operate in a way that protects the health and safety of the public, local communities, and the environment.

A public workshop was held in September 2015 at which Metro staff presented information about a range of proposed changes to the solid waste code. These proposed changes included closing regulatory exemptions for certain types of wood waste processing facilities, solid waste reload facilities, e-waste processing facilities, SSR MRFs, and conversion technology facilities, as well as clarifying the types of waste that qualify for Metro's reduced fee and tax rate, and fee and tax exemptions.

Industry participants expressed considerable concern regarding some of the proposed code changes. Additionally, many stakeholders expressed concerns about the lack of transparency of Metro's code adoption process and not having adequate opportunity to provide meaningful input.

Staff shared the feedback it received with the Metro Council at a work session in October 2015. Metro Council endorsed the staff proposal to establish an improved and more rigorous process for considering substantive changes to the solid waste code. Metro Council further endorsed the staff proposal to recommend that SWAAC establish two subcommittees to separately consider: (1) Metro regulation of material recovery and conversion technology facilities; and (2) existing solid waste fee and tax exemptions.

In December 2015, SWAAC voted to form a MRF/CT Subcommittee and provided staff with recommendations on the composition of that subcommittee. This memo documents the findings and recommendations of the MRF/CT Subcommittee.

Metro Council Direction

Metro Council has established that the region's solid waste management system should deliver and consider the following public benefits:

1. Protect people's health.
2. Protect the environment.
3. Maintain our commitment to the solid waste hierarchy as set forth in state law.
4. Get good value for the public's money.
5. Maintain a system that is flexible and adaptable to changing needs and circumstances.
6. Ensure adequate and reliable services are available to all customers.

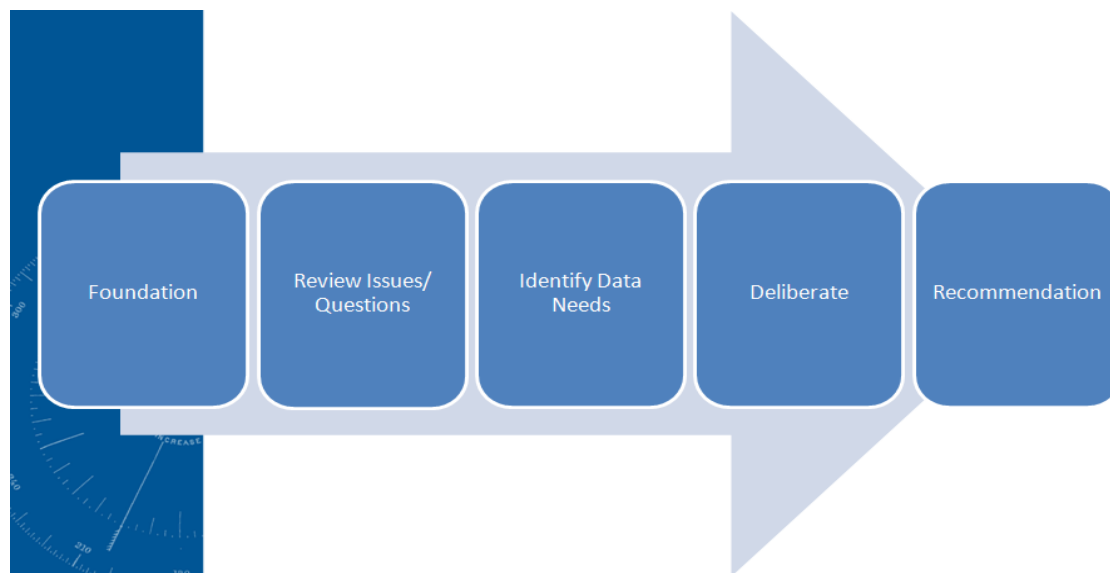
These public benefits guide the work of the Solid Waste Roadmap projects, Regional Solid Waste Management Plan (RSWMP) development, SWAAC, proposed Metro code changes, and the MRF/CT Subcommittee.

Subcommittee Purpose

The charge of the MRF/CT Subcommittee was as follows:

Consider whether MRFs that process source-separated recyclable materials and facilities that convert waste to energy, fuel, or other products should be subject to licensing and inspection requirements similar to other solid waste facilities. If so, which requirements are appropriate for such facilities?

The work of the Subcommittee generally followed the process flow shown in the diagram below. The recommendations for CT facilities builds on the Subcommittee discussions regarding the pros and cons of regulating SSR MRFs. Based on those discussions, staff developed the CT facility recommendations contained in this memo for consideration by the Subcommittee. The CT recommendations were discussed and finalized at the final MRF/CT Subcommittee meeting held September 12, 2016.



Source-Separated Recycling System Changes

The primary purpose of the Subcommittee was to consider the changes that have happened in the region's recycling infrastructure (especially the source-separated curbside system) and how those changes have altered how SSR MRFs operate as well as potential negative impacts resulting from those operations. The intent of the Subcommittee was to evaluate whether Metro should have a greater oversight role at these facilities that function very differently than they did when first exempted from Metro's licensing and inspection requirements.

In the 1990s, Metro exempted facilities that process source-separated recyclable materials from licensing. Since that time several changes have occurred which have contributed to Metro's potential need to regulate SSR MRFs. For instance, set-out practices and collection systems have evolved significantly from the early days of curbside collection when materials were placed at the curb separately from one another (bundled, bagged, or otherwise sorted into multiple bins).

The last 15 years have seen a movement to "commingle" program materials together at the curb (though glass still remains "on the side"). This shift was initiated by local governments and haulers who desired to make recycling more convenient for residents (less time sorting and easier to haul materials to the curb) which in turn would lead to increased overall recovery and increased collection efficiencies which would keep costs lower than separate collection of each material. The greatest change occurred with the widespread transition from bins to carts which led to more materials being set out but also more materials being placed in the carts that are not recyclable.

While the benefits of commingling have been realized, the change led to a higher level of contamination in the recyclable materials as more non-program materials were collected in curbside carts. This, in turn, has challenged processing facilities that must sort, process, bale and market materials. Contamination rates that were in the three percent range when materials were not commingled are now at nine percent for commingled loads from the residential sector (though a portion of the contaminants are recovered for recycling). This nine percent rate has remained consistent since the shift to commingling occurred over a decade ago.

Concurrent with the changes in set-out and collection practices, there were other systemic changes that were beyond the MRFs' control including the composition of materials arriving at their gates and continuing volatility in recyclable material markets.

In the early 1990s, newsprint made up nearly 70 percent of the material arriving at SSR MRFs in the region. Today, as print publications continue their rapid decline in the marketplace, that material constitutes less than a third of the mix delivered to SSR MRFs. The reality is that SSR MRFs now receive more low-value and harder-to-process materials than they have in the past.

To compound these challenges, an increasingly complex and volatile local, national, and global market for recyclable materials has resulted in local SSR MRFs, which historically were able to purchase curbside recyclables from haulers, being forced to charge processing fees in order to remain in business. Market volatility has also led to longer term storage of baled and loose materials which has increased the potential for material degradation beyond the point of recovery.

It is important to note that SSR MRFs had very little input or control over these changes and have been forced to adapt to an ever changing environment. Investments in equipment and process upgrades have been, and continue to be, risky due to uncertainty on both the supply and demand sides of the industry.

As a result of these system changes, facilities that receive and process commingled source-separated recyclable materials now potentially face many of the same operational and management

challenges as that of other solid waste processing operations. Through the MRF/CT Subcommittee process, Metro sought additional input and advice on whether these types of operations should be held to a similar level of oversight as other solid waste facilities and, if so, what level of oversight would be appropriate. Metro seeks to balance the need to increase and maintain recycling while assuring the public that facilities are managing materials in a safe and appropriate manner.

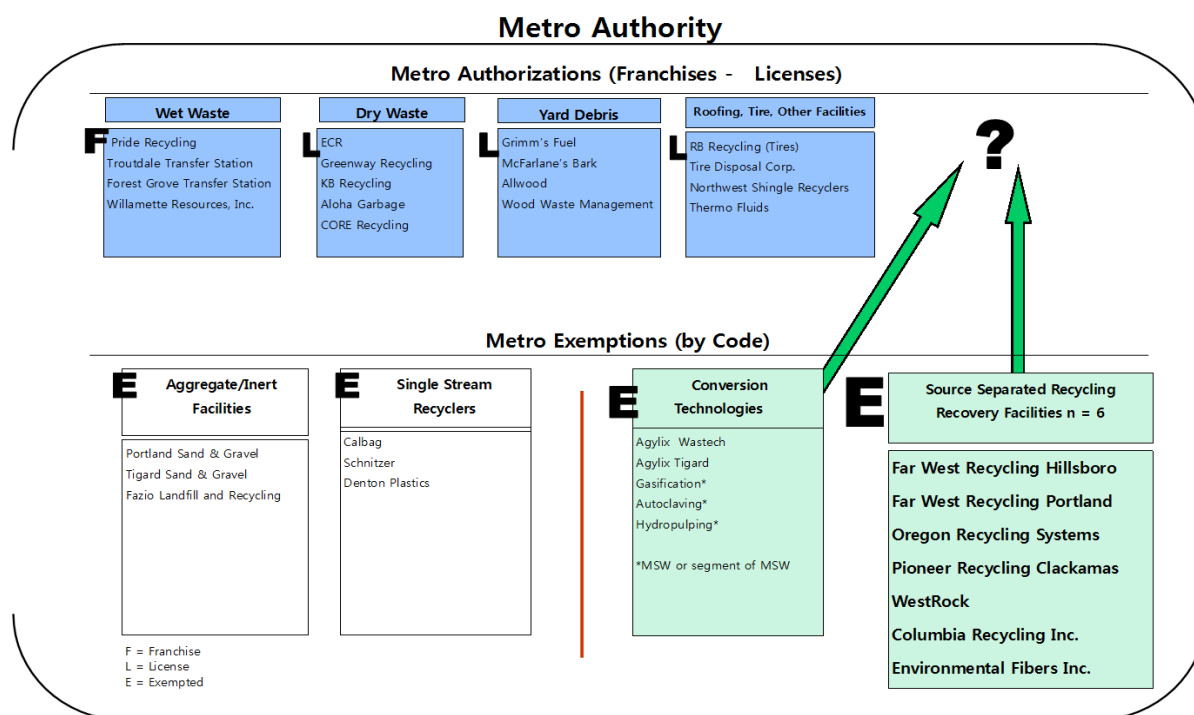
Conversion technology facilities introduced to region:

The Metro region has only one CT facility (Agilyx - which currently converts recovered plastics into synthetic crude oil, petrochemical products, and monomers at its Tigard facility). However, in recent years Metro has received many inquiries from a variety of different firms that have an interest in either locating within the region, or gaining access to a portion of the region's solid waste as a feedstock for a conversion technology facility.

Current Metro Code does not specifically address conversion technology facilities. Metro Code specifies that a license is required for a facility that processes non-putrescible waste and a franchise is required for a facility that processes putrescible waste. Furthermore, the Code also states that "any other activity not listed....or exempted by Metro Code Section 5.01.040" requires a franchise.

Approach to Metro Authorizations

The diagram below shows different classes of facilities currently under Metro authority. Metro regulates most classes already via a franchise or license. Other classes of facilities are currently exempted in Metro Code but subject to inspections.



Metro has broad legal authority over solid waste activities within the region (including facilities that accept and process source-separated recyclables) but has not chosen to fully exercise that authority for all facility classes. The Metro Code specifies the types of solid waste facilities that require authorization and those that are exempt. Those that require authorization include transfer stations, dry waste MRFs, yard debris reload and composting facilities, food waste composting and anaerobic digestion facilities, and other special authorizations such as tire and roofing material

processing facilities. Other classes of facilities are currently exempt from obtaining a Metro authorization, including aggregate and inert (sand, gravel, rock, etc.) facilities and specific material recycling facilities (metal, plastic or other single stream material facilities).

Metro's solid waste code (Title V) and related administrative procedures ensure that Metro has clear, consistent, and equitable requirements for monitoring solid waste facilities and tracking waste in the region. Metro's role as regional solid waste planning agency is intended to assure the public that all solid waste is managed in an appropriate and safe manner with minimal impacts to local communities.

Source Separated Recycling Material Recovery Facility (SSR MRF) Recommendations

Recommendation 1: Metro should authorize SSR MRFs. Material recovery facilities that receive and process commingled residential and commercial source-separated recyclable materials should be authorized and inspected by Metro similar to other classes of material recovery facilities.

Because of the known or potential impacts of facilities that receive and process source-separated commingled recyclables, the changing collection system, the changing composition of the commingled recycling material stream, and the highly volatile nature of recycling markets, the membership of the MRF/CT Subcommittee supports removing the exemption and requiring these facilities to obtain a Metro authorization to operate and be subject to random inspections similar to other resource recovery facilities.

It should be noted that industry representatives on the Subcommittee were divided on what sort of authorization should be applied to SSR MRFs. One industry representative, who is generally opposed to regulation, suggested a third-party certification process while other industry representatives were comfortable with recommending that SSR MRFs be subject to the same licensing, reporting, and inspection process as other similarly-situated material recovery facilities.

Characteristics of SSR MRFs Recommended for Additional Regulation

SSR MRFs that receive and process commingled recyclable materials have certain characteristics that distinguish them from other classes of exempted facilities. When considering whether a facility should remain exempt or be subject to regulation, the Subcommittee generally was in consensus that if a facility exhibits **any of the following** characteristics, it should be subject to Metro authorization, inspections, and reporting:

- The facility receives and processes commingled residential and commercial recycling streams.
- The commingled material is typically collected within a local regulated solid waste system.
- The facility has little or no control over incoming material.
- Speculative accumulation can occur and may result in degradation of materials if not processed and moved in a timely fashion.
- There are current or potential negative environmental or health and safety impacts.
- There are current or potential negative impacts offsite e.g. adjoining properties and community (dust, noise, smell, vectors, litter, fire safety, etc.).

Additional characteristics that the Subcommittee identified, and which may also be considered regarding potential regulation of a SSR MRF, include:

- Variable contamination rates depending on generator practices.
- Facilities are subject to negative impacts of a highly volatile commodity market.
- Facility operations can impact rates charged to generators.

Recommendation 2: Metro should establish operating standards for SSR MRFs. SSR MRFs should be subject to operating standards similar to those for other material recovery facilities and meet the following goals described in Metro Code².

- (a) **Environment.** Facilities should be designed and operated to avoid undue threats to the environment (e.g., storm water or groundwater contamination, air pollution, and improper acceptance and management of putrescible waste, hazardous waste, asbestos and other prohibited wastes).
- (b) **Health and Safety.** Facilities should be designed and operated to avoid conditions that may degrade public health and safety (e.g., fires, vectors, pathogens and airborne debris).
- (c) **Nuisances.** Facilities should be designed and operated to avoid nuisances (e.g., litter, dust, odors, and noise).
- (d) **Material Recovery.** Facilities should be designed and operated to ensure material recovery in a timely manner to maintain material quality and avoid degradation.
- (e) **Record-keeping and reporting.** Facilities should keep and maintain complete and accurate records of the amount of all solid waste and source-separated recyclable materials received, recycled, reloaded, and disposed and they should periodically report data as required by their regulatory instrument.

There was considerable discussion and concern among the Subcommittee members as to Metro's intentions related to requiring SSR MRFs, through a license or other form of authorization, to improve the quality of the outgoing recyclable materials going to market through process improvements such as belt speeds, contamination and quality specifications, new equipment, requiring additional sorters, or placing back end outcome-based performance standards on material quality as a means to "improve SSR MRF performance."

Metro staff went to great lengths to clarify for the Subcommittee membership that the focus of this process was on operational standards related to environmental protection, health and safety, avoiding nuisances, and ensuring that source-separated recyclables were not degraded through the operation of the facility. The focus was not on the aforementioned "performance" measures. Metro staff further clarified that Metro and other solid waste system stakeholders may address those so-called back of the house or outgoing material performance issues through other forums in the future.

Metro staff further clarified that the general operating standards outlined are necessary to protect the public's interest at this time and should be incorporated into a Metro authorization regardless of whether any other work is done in the future on material quality performance standards.

Conversion Technology (CT) Facility Recommendations

Recommendation 1: Metro should continue to franchise CT facilities that manage putrescible waste. A facility that receives *putrescible solid waste* for a conversion technology process should be subject to a Metro-issued franchise similar to those issued to other types of franchised solid waste facilities. For instance, a facility that process food waste, such as an aerobic digester facility, should still obtain a Metro franchise.

² Metro Code Chapter 5.01.053(i)(1)-(6).

Recommendation 2: Metro should license certain CT facilities that manage non-putrescible waste. A facility that receives and processes *non-putrescible solid waste* prior to introducing the waste into a conversion technology process should be licensed and inspected by Metro similar to other types of licensed solid waste facilities.

Recommendation 3: Metro should establish operating standards for CT facilities. A facility that is subject to Metro authorization (i.e. solid waste license or franchise) should be subject to operating standards similar to those for other authorized facilities and meet the following goals described in Metro Code Chapter 5.01:

(1) **Environment.** Facilities should be designed and operated to avoid undue threats to the environment (e.g., storm water or groundwater contamination, air pollution, and improper acceptance and management of putrescible waste, hazardous waste, asbestos and other prohibited wastes). (Metro Code 5.01)

(2) **Health and Safety.** Facilities should be designed and operated to avoid conditions that may degrade public health and safety (e.g., fires, vectors, pathogens and airborne debris). (Metro Code 5.01)

(3) **Nuisances.** Facilities should be designed and operated to avoid nuisances (e.g., litter, dust, odors, and noise). (Metro Code 5.01)

(4) **Material Recovery.** Facilities should be designed and operated to promote the highest and best use of materials according to the waste reduction hierarchy as defined in Metro Code Chapter 5.00. (Solid Waste Definitions)

(5) **Record-keeping and reporting.** Facilities should keep and maintain complete and accurate records of the amount of all solid waste received, recycled, reloaded, and disposed and they should periodically report data as required by their regulatory instrument. (Metro Code 5.01)

Recommendation 4: Metro should add a definition to its Code for “conversion technology” and define it using the current State definition. In Oregon’s Administrative Rules, it defines a “Conversion Technology Facility” to mean a facility that uses primarily chemical or thermal processes other than melting (changing from solid to liquid through heating without changing chemical composition) to produce fuels, chemicals, or other useful products from solid waste. These chemical or thermal processes include, but are not limited to, distillation, gasification, hydrolysis, pyrolysis, thermal depolymerization, transesterification and animal rendering, but do not include direct combustion, composting, anaerobic digestion, melting, or mechanical recycling. Mills that primarily use mechanical recycling or melting to recycle materials back into similar materials are not considered to be conversion technology facilities, even if they use some chemical or thermal processes in the recycling process.

Recommendations to Maintain Certain Exemptions

Recommendation 1: Metro should continue to exempt certain SMRs from obtaining a license. Facilities that receive and process specific single stream materials with intrinsic value in established markets such as scrap metal, plastics, papers, or other similar commodities should remain exempt from obtaining a Metro license.

Characteristics of Specific Material Recyclers Exempt from Licensing

Single material recyclers that receive and process recyclable materials have certain characteristics that distinguish them from other classes of exempted facilities. Specific material recyclers that have **all of the** following characteristics should remain exempt at this time:

- Limited volatility in end markets resulting in facilities' consistently able to utilize or market materials.
- They do not accept commingled residential or commercial source-separated recyclables.
- Business-to-business transactions generally do not impact the rate making process or rates charged to residential or commercial generators in regulated collection markets.
- Feedstock specifications are prescribed to minimize contamination.
- Insignificant contamination of single-stream materials entering the facilities.
- The facility's receipt and processing of the feedstock presents low potential risk to the environment, or to neighboring businesses and residential communities (e.g., odors, dust, noise, vectors, litter, fire safety etc.).

Recommendation 2: Metro should continue to exempt certain CT facilities from obtaining a license. A facility that receives feedstocks that have already been extracted from mixed solid waste and processed to meet prescribed specifications and largely resemble commodity feedstocks (material streams) for direct introduction into a conversion technology process should continue to be exempt from obtaining a Metro license. This exemption would be similar to those provided to other industrial and or manufacturing facilities when the operation of those facilities presents low potential risk to the environment, or to neighboring businesses and residential communities (e.g., odors, dust, noise, vectors, litter, fire safety etc.).

Characteristics of CT Facilities Exempt from Obtaining a Metro License.

CT facilities that receive feedstocks that have already been extracted from mixed solid waste and otherwise processed to conform to prescribed specifications and largely resemble commodity feedstocks (material streams) for direct introduction into a conversion technology process may have the following characteristics:

- The facility does not accept unprocessed, mixed solid waste from collection trucks/containers, reload facilities, or other solid waste generators.
- A majority of feedstock material is used productively in conversion process.
- Feedstock specifications are prescribed to conform to the specific conversion technology industrial process requirements.
- Shredding, mixing, right-sizing or other similar treatment of already sorted and processed feedstocks typical in a manufacturing process does not constitute "processing of solid waste".
- The facility's receipt and processing of the feedstock presents low potential risk to the environment, or to neighboring businesses and residential communities (e.g., odors, dust, noise, vectors, litter, fire safety etc.).

Conclusion

Since the early 1990s, there have been new materials handled by different types of solid waste facilities in the region that have made it more challenging to protect the public interest, the environment and public health. These recommendations, if adopted by the Metro Council, would apply Metro's solid waste code with greater clarity, consistency and transparency and increase the public's confidence that the materials it discards will be handled in an environmentally safe and cost-effective manner.