600 NE Grand Ave.
Portland, OR 97232-2736

Metro | *Agenda*

Meeting: Metro Council Work Session
Date: Tuesday, July 12, 2011
Time: 2 p.m.
Place: Council Chambers

CALL TO ORDER AND ROLL CALL

2 PM	**1.**	**ADMINISTRATIVE/ COUNCIL AGENDA FOR JULY 14, 2011/ CHIEF OPERATING OFFICER COMMUNICATIONS**	
2:15 PM	**2.**	**SOLID WASTE ROADMAP KEY ISSUES – <u>INFORMATION / DISCUSSION</u>**	**Slyman** **Dan Pitzler, CH2M Hill**
3:25 PM	**3.**	**COUNCIL BRIEFINGS/COMMUNICATION**	

ADJOURN

Agenda Item Number 2.0

SOLID WASTE ROADMAP KEY ISSUES

Metro Council Work Session
Tuesday, July 12, 2011
Metro Council Chambers

METRO COUNCIL

Work Session Worksheet

Presentation Date:	July 12, 2011	Time:	2:15 PM	Length:	70 min.
Presentation Title:	Solid Waste Roadmap Key Issues				
Department:	Parks and Environmental Services				
Presenters:	Paul Slyman, Dan Pitzler (CH2M HILL)				

PURPOSE & GOALS

Metro has initiated a scenario planning exercise to better define the future shape of the regional solid waste system and Metro's role in it. As a first step, Metro interviewed a broad group of stakeholders to identify the major solid waste issues of the next decade. In this work session, we will share what we learned, summarizing the key issues, and we will provide examples of solutions that other jurisdictions around the world have implemented to address similar issues. Our ultimate goal for scenario planning is to produce a refined Solid Waste Roadmap. Today, we provide a progress report.

Today's Goals:

1. Reaffirm system objectives and key assumptions;
2. Share key issues identified in stakeholder interviews;
3. Provide best-practice examples for key system issues.

ISSUE & BACKGROUND

The year 2020 may herald a new era in this region's management of solid wastes. Metro has substantial influence on how different that system will be from the transfer and disposal system of the past 20+ years. For example, will Metro continue to haul discards long distances to landfill, or will the region transition to some other form of discards management? The Solid Waste Roadmap scenario planning process provides structure for Metro and its stakeholders to articulate the direction the system should go. The scenario planning process is described further below.

Scenario planning process

The scenario planning process will focus on identifying factors that will influence the way solid waste transfer and disposal may change in the next ten years and uncertainties – factors beyond Metro's control – that might affect the way the system changes. Through this process, the project team will define strategies that Metro should implement regardless of the way the uncertainties unfold, and strategies that Metro can use to respond to specific future conditions. The team will bring these prioritized strategies to you for your review later this fall.

On the following page is a generalized timeline showing the scope of work for the approximately year-long scenario planning exercise.

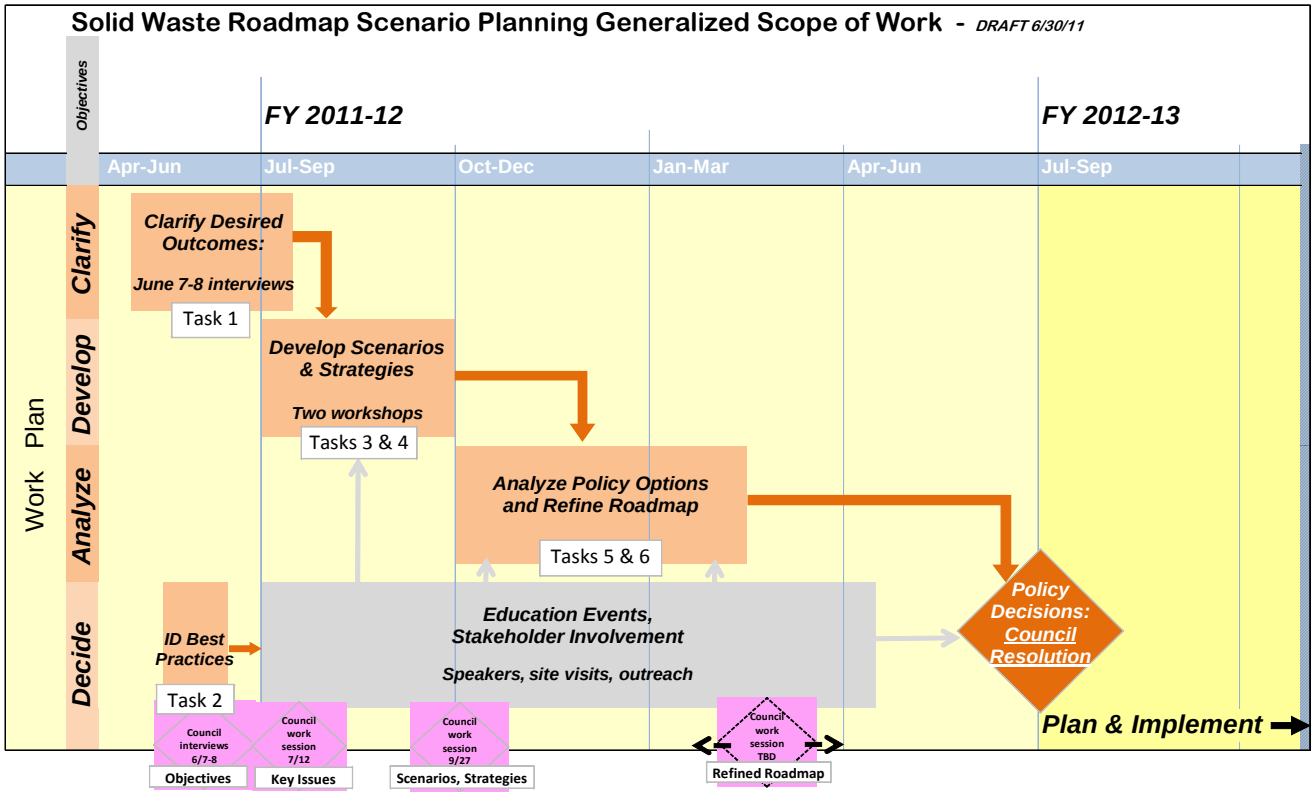

Figure 1. Generalized timeline for the scenario planning scope of work. Timeline has been revised to reflect favorable (accelerated) scheduling of scenario and strategy development workshops. Polygons at the bottom of the diagram represent formal Metro Council engagements, such as today's work session. Today's agenda item reports on the results of Tasks 1 and 2. Tasks 3 and 4 are on target to be completed ahead of schedule, this summer, with a progress report scheduled for the September 27th work session. The overall stakeholder engagement strategy is still being developed.

Framing scenarios and strategies

Many solid waste issues were identified by Councilors, staff and stakeholders in a series of interviews held June 7th and 8th this year. During the work session, we will summarize those issues and focus on those that are the most relevant to the roadmap. A full summary of stakeholder interviews is attached as a technical memorandum, the content of which will help frame scenario and strategy development (*i.e*, Tasks 3 and 4 in the above generalized scope of work) later this summer.

To date, Metro has provided stakeholders three main avenues for input: the small focus-group type interviews mentioned above, written comment forms, and regular involvement of the solid waste stakeholders' roundtable. Future opportunities are anticipated for the Solid Waste Advisory Committee. Specific plans for additional stakeholder engagement are still being developed, and will depend, in part, on the scope of strategies developed during the summer workshops (Tasks 3 and 4).

SOLID WASTE SYSTEM OBJECTIVES AND KEY ASSUMPTIONS

Metro will need to make a series of policy decisions during development of the Roadmap. Clearly defined desired outcomes and objectives will be critical in shaping the right decisions. On the following page, solid waste-specific objectives are aligned with the Metro Council's six characteristics of a successful

region. These objectives were compiled from discussions with Metro Council members, staff and external stakeholders from local governments and solid waste industry. Where possible, the values[1] associated with the disposal system adopted by the Metro Council during the 2005/6 Transfer System Ownership Study ("DSP1") are embedded in these objectives.

System Objectives in the Context of Desired Regional Outcomes

1. **Vibrant communities** - *People live, work and play in vibrant communities where their everyday needs are easily accessible.*

   – Encourage innovation in waste prevention and recycling
   – Ensure adequate oversight to prevent "white elephant" facilities
   – Minimize visual impacts of large bins in public spaces

2. **Economic Prosperity** - *Current and future residents benefit from the region's sustained economic competitiveness and prosperity.*

   – Economic development by using green energy to attract new businesses
   – Encourage new, emerging recycling businesses
   – Encourage using materials locally

3. **Safe, reliable transportation** - *People have safe and reliable transportation choices that enhance their quality of life.*

   – Minimize trucking through the Columbia River Gorge
   – Minimize wear on roads
   – Minimize traffic congestion in the vicinity of facilities

4. **Leadership in climate change** - *The region is a leader in minimizing contributions to global warming.*

   – Minimize diesel fuel use
   – Minimize energy inputs and contributions to climate change (GHG emissions)
   – Minimize toxicity of material/waste stream

5. **Clean air and water** - *Current and future generations enjoy clean air, clean water and healthy ecosystems.*

   – Minimize air pollution

6. **Fairness and equity** - *The benefits and burdens of growth and change are distributed equitably.*

   – Distribute total societal cost equitably to all rate payers, and ensure that the solid waste system does not disproportionately impact minority and low-income communities
   – Ensure regional equity in the distribution of self-haul disposal opportunities
   – Ensure that system is funded by those who use it
   – Ensure reasonable and affordable rates for users

[1] Metro Disposal System Objectives: 1. Protect public investment in solid waste system; 2. "Pay to Play"- Ensure participants pay fees/taxes; 3. Environmental Sustainability- ensure system performs in an sustainable manner; 4. Preserve public access to disposal options (location/hours); 5. Ensure regional equity- equitable distribution of disposal options; 6. Maintain funding source for Metro general government; 7. Ensure reasonable/affordable rates

Key assumptions

There are a series of assumptions and "givens" that will help frame the boundaries of the decisions made during development of the roadmap. Also compiled from stakeholder, staff, and Councilor conversations, the most relevant of those assumptions include the following:

Key Assumptions

- Metro will retain the hybrid system of material transfer stations: some owned by Metro and some by private sector with Metro oversight and control. Change may occur as transfer opportunities for food waste arise, and issues around the future of Metro South are resolved.
- Metro's authorities provide it with ownership and regulatory authority over post-consumer materials generated in the region.
- Revenues from the solid waste system are an important source of funding for planning and Metro's general government activities. If implementation of the Roadmap is projected to result in a decline in those revenues, other funding methods should be identified so that funds available for Metro's non-solid waste activities do not decline.

KEY ISSUES IDENTIFIED IN STAKEHOLDER INTERVIEWS

Stakeholders identified a number of issues that will affect the solid waste system over the next decade. A selection of the key themes is shown below.

1. Zero waste, least cost planning, and materials management
2. Organics regulatory framework
3. Organics processing technologies
4. Metro South
5. Self-haul policy and recycling options
6. Thermal treatment – new technologies and traditional waste-to-energy
7. System financing issues
8. Compressed natural gas for collection vehicles

BEST PRACTICE EXAMPLES

Addressing the key issues summarized above can be informed by looking to best practices elsewhere. At the time of this work sheet preparation, research was being conducted on best-practice solutions that other U.S. and international regions have implemented to address similar issues. Examples from that research will be provided verbally during the work session presentation.

IMPLICATIONS AND SUGGESTIONS

Staff will complete a pair of all-day workshops this summer to develop long-run strategies for Metro to consider and to identify additional work that could be helpful for the Metro Council to make informed policy decisions. While Council legislation is not (yet) required, it is likely that the Roadmap program will eventually result in one or more pieces of legislation; for example, a proposed Resolution to direct

staff action, or an Ordinance that amends the Regional Solid Waste Management Plan, depending on the scope of desired change.

The Metro Council can expect another Roadmap work session item in September to discuss strategic options developed in the workshops and to request additional analysis. In the meantime, as Council works on scheduling a fall work plan for the Solid Waste Advisory Committee (SWAC), Councilors may wish to consider utilizing SWAC to propose policy options on specific Roadmap topics.

QUESTION(S) PRESENTED FOR CONSIDERATION

1. Does the Metro Council support using the six characteristics of a successful region—as further clarified by solid waste system objectives—and the three key assumptions as the basis for framing discussions of the regional solid waste system and Metro's role therein? Are there adjustments, additions or deletions the Metro Council would like to make?
2. Are there site visits or speakers about key issues that the Metro Council would like staff to facilitate?
3. Would the Metro Council like staff to tee up any topics for the Solid Waste Advisory Committee (or another body) to develop policy options and/or recommendations for any portion of the Solid Waste Roadmap *at this time*?

LEGISLATION WOULD BE REQUIRED FOR COUNCIL ACTION __Yes _X_No
DRAFT IS ATTACHED __Yes __No

Legislation is not required for Council action.

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Attachment
to
Council Work Session Worksheet
July 12, 2011

Technical Memorandum

Roadmap: Stakeholder Interviews Summary and Scenario/Strategy Pre-Frame

Prepared by

Dan Pitzler & Kristin Hull, CH2M HILL

June 27, 2011

Roadmap: Stakeholder Interview Summary and Scenario/Strategy Pre-Frame

PREPARED FOR: Tom Chaimov/Metro

PREPARED BY: Dan Pitzler/CH2M HILL
Kristin Hull/CH2M HILL

DATE: June 27, 2011

PROJECT NUMBER: 423241.01.01

Contents

1.0 Introduction

Metro is developing a Solid Waste Roadmap that will provide a practical guide to solid waste policies and projects important to the development of the region's solid waste system. The roadmap will not be an exhaustive compilation, but instead a high-level set of policies and projects that can set a positive direction for the medium-term evolution of the solid waste system.

To begin to develop that roadmap, staff conducted ten stakeholder interview sessions that included 29 stakeholders including six Metro Council members. The purpose of the interviews was to understand how changes that each stakeholder would like to see in the region's solid waste system, the industry trends and changes could affect the system, and external trends that could affect the system.

The interviews were arranged to be open-ended and intended to elicit stakeholder objectives, desired outcomes, issues and challenges, external influences, and decisions that must be made going forward. The open-ended questions discussed follow.

1. Visualize the optimal regional solid waste system in 2020. What makes it so good? What is Metro's role in that system?
2. How can the solid waste system help the Metro region realize the six characteristics of a successful region?

   Vibrant Communities, Economic Prosperity, Safe and Reliable Transportation, Sustainability, Clean Air and Water, Fairness and Equity
3. What are the key issues and challenges facing Metro as it develops its regional solid waste strategy?
4. What external trends should Metro be aware of that might influence the way the regional system evolves through time?
5. How should Metro address concerns related to Metro South?

The input collected through the stakeholder interviews and documented in this technical memorandum will inform the discussion of possible policies and projects during the preparation of the roadmap. Possible policies and projects will be presented to these and other stakeholders for comment before they are finalized in the roadmap.

2.0 Roadmap Purpose Statement

The purpose of the roadmap is as follows:

Develop a plan for shepherding the Metro region solid waste system toward a future that better achieves the Metro Council's desired outcomes, and provides a framework to facilitate collaboration and coordinate solid waste projects over the coming decade.

3.0 Roadmap Objectives and Links to Metro's Desired Regional Outcomes

Metro will need to make a series of policy decisions during development of the Roadmap. Based on discussions with Metro Council members; Metro solid waste, finance and senior staff; and external stakeholders from local governments and solid waste industry, solid waste-specific objectives for those decisions align with the Metro Council's six characteristics of a successful region, as summarized on the next page. Where possible, the values[1] associated with the disposal system adopted by the Metro Council during the 2006 Transfer System Ownership Study ("DSP1") are embedded in these objectives.

1. **Vibrant communities** - *People live, work and play in vibrant communities where their everyday needs are easily accessible.*
   - Encourage innovation in waste prevention and recycling
   - Ensure adequate oversight to prevent "white elephant" facilities
   - Minimize visual impacts of large bins in public spaces
2. **Economic Prosperity** - *Current and future residents benefit from the region's sustained economic competitiveness and prosperity.*
   - Economic development by using green energy to attract new businesses
   - Encourage new, emerging recycling businesses
   - Encourage using materials locally
3. **Safe, reliable transportation** - *People have safe and reliable transportation choices that enhance their quality of life.*
   - Minimize trucking through the Columbia River Gorge
   - Minimize wear on roads
   - Minimize traffic congestion in the vicinity of facilities
4. **Sustainability** - *The region is a leader in minimizing contributions to global warming.*
   - Minimize diesel fuel use
   - Minimize energy inputs and contributions to climate change (GHG emissions)
   - Minimize toxicity of material/waste stream
5. **Clean air and water** - *Current and future generations enjoy clean air, clean water and healthy ecosystems.*
   - Minimize air pollution
6. **Fairness and equity** - *The benefits and burdens of growth and change are distributed equitably.*

[1] Metro Disposal System Objectives: 1. Protect public investment in solid waste system; 2. "Pay to Play"- Ensure participants pay fees/taxes; 3. Environmental Sustainability- ensure system performs in an sustainable manner; 4. Preserve public access to disposal options (location/hours); 5. Ensure regional equity- equitable distribution of disposal options; 6. Maintain funding source for Metro general government; 7. Ensure reasonable/affordable rates

- Distribute total societal cost equitably to all rate payers, and ensure that the solid waste system does not disproportionately impact minority and low-income communities
- Ensure regional equity in the distribution of self-haul disposal opportunities
- Ensure that system is funded by those who use it
- Ensure reasonable and affordable rates for users

4.0 Key Assumptions for the Roadmap

There are a series of assumptions and "givens" that will help frame the boundaries of the decisions made during development of the roadmap. The most relevant of those assumptions include:

- Metro will retain the hybrid system of material transfer stations: some owned by Metro and some by private sector with Metro oversight and control. Change may occur as transfer opportunities for food waste arise, and issues around the future of Metro South are resolved.
- Metro's authorities provide it with ownership and regulatory authority over post-consumer materials generated in the region.
- Revenues from the solid waste system are an important source of funding for planning and Metro's general government activities. If implementation of the roadmap is projected to result in a decline in those revenues, other funding methods should be identified so that funds available for Metro's non-solid waste activities do not decline.

5.0 Key Issues That Affect the Roadmap

During the course of the stakeholder interviews, a number of opinions—some conflicting—were expressed about issues that will affect development of the roadmap. A summary of those opinions follows.

5.1 Metro South

- Oregon City would like the transfer station to be relocated to make room for a higher use of the property and to enable other development in the area. That said, the facility is in a great location for the residents of Clackamas County.
- It is probably not good policy to have Metro South located in the middle of a regional center, but the public needs a facility to deliver materials to. The roadmap needs to define if the station should stay or go, and if it goes, any new facility should be developed in a manner that minimizes "political battles."
- There is land available for redevelopment in the area including the Blue Heron industrial site and interest in developing a life style center. Perhaps a grouping of green energy facilities. There is also a waste water treatment plant nearby.

5.2 Waste-to-Energy and Other Thermal Processing Technologies

Many stakeholders introduced the topic of waste-to-energy or other thermal processing techniques as part of their discussion of the ideal future system. Stakeholders were split on the usefulness of creating energy from waste. Some said that the energy was valuable and that waste should be viewed as a resource. Others said that product stewardship and additional recycling were higher priorities because the benefits of using fewer resources in production outweigh the value of the energy. Stakeholders on both sides of the issue agreed that siting a facility in the metro region could be difficult due to concerns about toxins and other negative effects of the facility on public health and the natural environment. Specific comments on waste-to-energy included:

- Oregon City and St. Helens have restrictions on waste combustion, but other communities in the region do not.
- Waste-to-energy (WTE) facilities are very expensive and have high risks that would need to be mitigated. How "proven" must any conversion technology be for Metro to consider it?
- The region should be careful to not commit to facilities with high tonnage requirements that would preclude new recycling markets or technologies that might develop in the future. It will be important to assess how much material is likely to remain in the waste stream 20-30 years from now, and what the likely heat content of those materials would be.
- There are industrial developments in the region that would benefit from a waste-to-energy facility nearby that could provide district heat. These sites would need to accommodate traffic and other necessary infrastructure.
- Covanta in Marion County might be interested in an expansion to their existing waste-to-energy facility.
- What are the life cycle impacts of plastic to oil facilities, and how do they compare to current and possible future alternatives (e.g., Metro establishing redemption centers or depots for hard to recycle materials like film plastic)? Should Metro encourage or discourage development of these facilities?

5.3 Innovation

Several stakeholders noted that the region is behind many other areas in new waste management technology and agreed that Metro should lead and be a place that others want to visit to examine innovative new approaches to managing materials. One stakeholder group discussed who should pay for research and development for innovative new technologies.

5.4 Removing Organics from Disposal

Many stakeholders noted that removing organics from the waste stream is an important next step for the region. Specific comments included:

- There should be enough opportunities to use compost on agricultural lands in the area if we produce it.
- In consultation with local government planners, Metro planners need to develop regulations for food/yard waste combined facilities. There are no ordinances in the region that are tailored to these facilities, and they have special considerations that require a consistent approach region-wide.
- Region needs more local options for processing and transferring organics. A reload is needed near Metro South.
- Locally distributed composting, such as at schools or other public facilities where compost could be used, could be a closed-loop alternative to a giant centralized facility with curbside collection.
- Some felt that it would be preferred to manage food using anaerobic digestion to create energy rather than composting.
- Some felt that Metro would need to guarantee tonnage (take or pay), or sign contract with food processing facilities to ensure that food is removed from wastes going to landfill.
- Metro could do something similar to Enhanced Dry Waste Recovery Program (EDWRP) do drive recovery of organics.

5.5 System Finance

Many stakeholders recognized the inherent tension between Metro's reliance on fees collected on waste disposal and policies that promote waste reduction. Specific comments included:

- As the region continues to dispose of less waste, Metro's disposal tax revenues will decline unless the per-ton disposal fee collected by Metro is increased. This is inconsistent with the waste hierarchy and zero waste principles because this could eventually exert pressure to lessen the emphasis on waste prevention and recycling. What is a better method of collecting revenue?
- In response, many suggested broadening Metro's tax base to include all materials that arrive at a processing facility (recycling, recovery, composting), or disposal facility—disposal tax would be higher to continue to discourage disposal.

5.6 Metro's Role in System

Many stakeholders discussed Metro's role in owning and operating facilities and discussed the benefits and drawbacks of its owning and implementing new technologies. Specific comments included:

- Some stakeholders thought Metro should have a stronger role in operating facilities, such as operating the scalehouse of all facilities in region; others felt that Metro should not be in the business of owning or operating facilities.

- Metro's role in the system as a regulator to keep the playing field between companies level is generally accepted.
- Very little of what's in "garbage" should go to landfill, and a key challenge will be achieving that goal cost-effectively. Private firms can take the lead in diverting waste from landfill, but Metro should establish policies to achieve that goal and create the environment for investment.
- A good role for Metro is to convene stakeholders, be a forum for discussion and facilitate solutions.
- The roadmap process should not be constrained by the current solid waste system structure, but should explore what the ideal structure would look like.
- Government responsibility for waste management in the region is in silos: local governments responsible for collection and Metro responsible for transfer stations. This makes coordination and policy consistency difficult and is in contrast to vertically integrated waste firms. One solution could be a solid waste authority that is separate from Metro or organized like MERC.
- Considerable support was expressed for the Enhanced Dry Waste Recovery Program (EDWRP) and business waste reduction requirements. In spite of some initial skepticism, most believe these programs have been successful in meeting Metro's broad objectives.
- To what extent should Metro play a role in co-locating businesses with material management synergy (i.e., one firm's output is another firm's input)?

5.7 Policy and Regulatory Considerations

- Metro should join other forward-thinking communities and adopt a zero waste policy goal for the region.
- Metro should have regulations and policies that define its role in working with neighborhoods affected by facilities.
- The system would benefit from consistency among jurisdictions in the region about what is compostable and what is recyclable (e.g., recyclable cutlery, bioplastics). There is a role for Metro to facilitate discussion and establish standards that would be adopted by all.
- The facility siting process in the region is far too onerous and burdensome (e.g., Gresham has spent 10 years trying to site an organics processing facility). Further, there is a shortage of industrial land available for new facilities. How can Metro facilitate the development of new material management facilities?
- Stakeholders expressed mixed support for material bans, but most said that there was a role for bans. Some stakeholders were concerned about the burden placed on haulers to enforce bans in some communities.
- After organics, what is the next material the region should focus on?

- Haulers interviewed agreed that the diesel particulate filter program was ill-conceived and that there are better ways to get environmental improvements.
- Will Metro's governance structure need to change as the region removes organics from disposal and pursues further reduction of material to landfill?

5.8 Stakeholder Outreach

Many stakeholders noted that Metro had done a good job on providing information to the public about recycling and waste reduction and that this area should continue to be a focus for Metro. Specific comments included:

- Metro should provide more information about waste streams, provide education to help facilitate the acceptance of change, and raise awareness of impacts of consumerism. Metro could consider something like Portland's "be resourceful" campaign.
- As the region moves to remove organics from disposal, Metro should take the lead and work with local government to ensure consistent messaging and education about the new program.
- Public should be made aware of how actions (or inaction) contributes to climate change and that that recycling and composting cost money.
- It is critical to work with ratepayers and residents located near any new facilities to understand the tradeoffs they're being asked to make to prevent a backlash.
- The lack of a stakeholder advisory committee makes it more difficult for Metro to engage stakeholders and understand multiple perspectives when making decisions about the solid waste system. Industry would like more opportunity to engage with Metro on topics of mutual interest (SWAC was a good forum).
- Metro would benefit from polling information to know what is important to citizens—Metro considers what it thinks people want, but would benefit from better information about citizen desires when making decisions.
- The expectation is growing that Metro engage with stakeholders using social media.
- There is benefit to consistency in messaging for all generating sectors (SF, MF, commercial, industrial) that Metro can facilitate.
- If Metro considers pursuing new thermal technologies, it should get out in front of the issue and lay the groundwork for public acceptance.

5.9 Planning Horizon

Many stakeholders questioned 2020 as a planning horizon for the roadmap because they see the region and the industry only beginning to make major technology shifts in that timeframe.

5.10 Change to Materials Management Approach

Some stakeholders encouraged Metro to make policy decisions using a complete decision framework that includes a complete accounting of societal and environmental costs as well

as price. Several stakeholders noted that this was especially important to conversations around emerging thermal technologies and how they compare to landfill and recycling options. Specific comments included:

- The quantity of waste to landfill is a poor proxy for environmental performance. The main benefit of recycling is lessening the use of natural resources in the production of new goods. For example, using glass as roadbase is sub-optimal environmentally compared to making use of local facility that is in need of cullet for producing glass bottles. Another example is planting many trees might increase yard debris, but would be a net environmental benefit. Many advocated valuing waste as a resource using a materials management approach.
- To truly evaluate the impacts of policy choices, Metro would need to include externalities in decision making. Many advocated a least cost planning framework (similar to what's done for regional energy conservation programs), with monetary values placed on environmental and social impacts (to the extent practicable). Such methods are complex with many uncertainties: How much effort should Metro spend to measure the life cycle of products to prioritize strategies for disposal, reuse, and recovery?
- One result of this change would be valuing the negative effects of manufacturing products from virgin materials and of shipping recyclables and garbage long distances. This would tend to make local solutions relatively more favorable.

5.11 Compressed Natural Gas

Many stakeholders expressed support for a regional requirement that all material collection trucks use on compressed natural gas, and that Metro take a role in facilitating fueling centers across the region. Haulers like the higher certainty of fuel prices, and the quieter vehicles that result in fewer complaints.

6.0 External Trends and Uncertainties

The interviewees mentioned the following key external trends and uncertainties that Metro should be aware of during development of the roadmap.

- When it comes to new technologies, what are the benefits and impacts? How do we know which changes are warranted?
- What are the long-term trends in cost of living, and how will they affect people's ability to pay for solid waste services?
- What will be the long-term trends in demographics, housing (more MF) and population growth in the Metro region, and how will they affect the system?
- What will be the long-term trend in federal climate change regulation?
- What will be the long-term trend in federal air emission regulation?
- What are long-term price trends for oil, energy, and natural resources (commodities)?

- What will be future prices for recycled materials, and will there be more local options for re-manufacturing materials?
- To what extent will consumption (and waste) patterns change when the economy recovers?
- How will waste prevention efforts and state and federal product stewardship initiatives affect the amount of post-consumer materials requiring processing and disposal?
- What are the life cycle impacts to Metro's desired outcomes from different material management methods for different materials? (e.g., what are the impacts from local recycling vs. overseas recycling vs. composting vs. anaerobic digestion vs. disposal vs. thermal processing? The impacts will differ for cardboard vs. scrap metal vs. PET plastic?) Metro needs a better understanding of this issue before it can assess and implement policies that would manage materials consistent with its desired outcomes.
- Large, vertically integrated waste companies are purchasing and engaging in joint ventures with small firms that have innovative new technologies (e.g., S4 Energy Solutions plasma gasification facility at Waste Management's Columbia Ridge Landfill site). To what extent will these technologies be successful commercially, particularly at smaller throughputs than today's waste-to-energy facilities)?
- Will there be state or federal mandates to environmentally friendly fuels such as CNG?
- What will be the state and federal requirements for renewable energy, and will energy from thermal processing and/or anaerobic digestion be considered renewable?
- What will be the long-term trend in chemical policy reform?
- How will the trend to drive sustainability goals through supply chain and purchasing policies (e.g., Wal-Mart) affect waste stream?
- The EU Landfill Tax is a major driver for development of new technologies in Europe.

7.0 Barriers and Constraints

The following barriers and constraints to successful implementation of the roadmap were identified by stakeholders during the interviews.

- There is considerable inertia in the system: it is big and change is difficult. One reason for this is that entrenched private economic interests stand to lose out on returns from prior investments if changes in the system, as do public entities as well (e.g. Metro's dependence on revenues from tip fee and transfer station ownership).
- The region has well over 100 years of low-cost, permitted landfill capacity. Thus, this makes preventing waste difficult and costly in dollar terms. Policy intervention (such as the disposal tax) is a necessity to address the environmental and social aspects of waste management.
- Similarly, having strong export markets for recovered materials is both a blessing and a curse. It makes recycling less costly, but also is a cheaper option than developing local

processing and material uses that are better for local economic development and the environment (e.g., climate change).

- The benefits of zero waste and managing materials as a resource accrue slowly, and most of the benefits are global rather than local (e.g., climate change and less resource extraction).
- Regional residents and businesses have seen dramatic increases in water and sewer fees and are likely to resist substantial fee increases, regardless of how well intentioned they may be.
- In response to material management changes, Metro and local governments are requiring residents and businesses to make behavioral changes and change the ways that they manage materials on their premises (e.g., source separated to commingled to separating food waste). At some point, residents and businesses may resist these changes.
- Politically it is getting harder to make big decisions and make them stick. Interests are fractured and it is difficult to get regional consensus. Trend is that people trust their immediate friends more than government or business.
- There is limited industrial land for new waste material management facilities in the region.
- Not all waste collection firms are interested in change. There will be resistance from some firms to new programs.
- People have a natural tendency to be skeptical of change.
- Oregon City has no solid waste staff, which will make it difficult to engage with them about technical issues related to Metro South.
- Landfilling and thermal processing will likely be the only large-scale waste management options by 2020. Other disposal technologies may be available at a smaller "boutique" scale.
- The metro region needs flexibility to adapt to changing technology over the next 30 years.

ATTACHMENT 1

Stakeholder Interview List

ATTACHMENT 1

Stakeholders Interviewed

Metro Councilors

- Council President Hughes
- Councilor Burkholder
- Councilor Collette
- Councilor Craddick
- Councilor Harrington
- Councilor Hosticka

Metro staff

- Douglas Anderson
- Roy Brower
- Dan Cooper
- Andy Cotugno
- Paul Ehinger
- Marv Fjordbeck
- Brian Kennedy
- Matt Korot
- Scott Robinson
- Andy Sloop
- Paul Slyman
- Nikolai Ursin

Government stakeholders

- David Allaway, Oregon Department of Environmental Quality
- Dan Blue, City of Gresham
- Nancy Kraushaar, City of Oregon City
- Bruce Walker, City of Portland
- Rick Winterhalter, Clackamas County
- Susan Millhauser, Lake Oswego (written)

Industry stakeholders

- Arthur Cimento, Recology
- Andy Kahut, KB Recycling
- John McKinney, Columbia Biogas
- Matt Miller, Gresham Sanitary Service
- David White, Oregon Refuse and Recycling Association
- Adam Winston, Waste Management
- Ray Phelps, Allied Waste (written)

Materials following this page were distributed at the meeting.

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Portland, OR 97232-2736

Metro | *Agenda*

Meeting: Metro Council
Date: Thursday, July 14, 2011
Time: 2 p.m.
Place: Metro Council Chambers

CALL TO ORDER AND ROLL CALL

1. INTRODUCTIONS

2. CITIZEN COMMUNICATIONS

3. CONSIDERATION OF THE MINUTES FOR JUNE 30, 2011

4. RESOLUTIONS

4.1	**Resolution No. 11-4265**, For the Purpose of Adopting the Regional High Capacity Transit System Expansion Policy Implementation Guidance.	**Collette**
4.2	**Resolution No. 11-4279**, For the Purpose of Authorizing the Metro Chief Operating Officer to Execute an Agreement with the Oregon Zoo Foundation.	**Craddick**

5. CHIEF OPERATING OFFICER COMMUNICATION

6. COUNCILOR COMMUNICATION

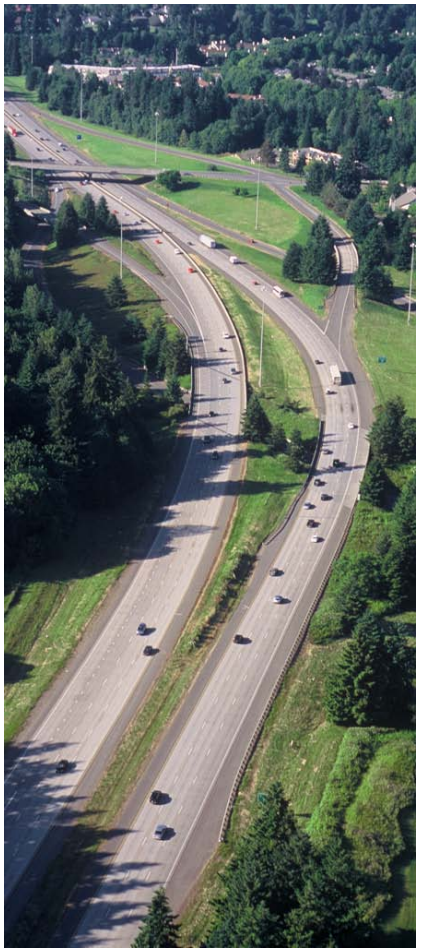
ADJOURN

Television schedule for July 14, 2011 Metro Council meeting

Clackamas, Multnomah and Washington counties, and Vancouver, WA Channel 11 – Community Access Network *Web site*: www.tvctv.org *Ph*: 503-629-8534 *Date*: 2 p.m. Thursday, July 14 (Live)	**Portland** Channel 11 – Portland Community Media *Web site*: www.pcmtv.org *Ph*: 503-288-1515 *Date:* 8:30 p.m. Sunday, July 17 *Date*: 2 p.m. Monday, July 18
Gresham Channel 30 - MCTV *Web site*: www.metroeast.org *Ph*: 503-491-7636 *Date*: 2 p.m. Monday, July 18	**Washington County** Channel 30– TVC TV *Web site*: www.tvctv.org *Ph*: 503-629-8534 *Date*: 11 p.m. Saturday, July 16 *Date*: 11 p.m. Sunday, July 17 *Date*: 6 a.m. Tuesday, July 19 *Date*: 4 p.m. Wednesday, July 20
Oregon City, Gladstone Channel 28 – Willamette Falls Television *Web site*: http://www.wftvmedia.org/ *Ph*: 503-650-0275 Call or visit web site for program times.	**West Linn** Channel 30 – Willamette Falls Television *Web site*: http://www.wftvmedia.org/ *Ph*: 503-650-0275 Call or visit web site for program times.

PLEASE NOTE: Show times are tentative and in some cases the entire meeting may not be shown due to length. Call or check your community access station web site to confirm program times.

Agenda items may not be considered in the exact order. For questions about the agenda, call the Metro Council Office at 503-797-1540. Public hearings are held on all ordinances second read and on resolutions upon request of the public. Documents for the record must be submitted to the Clerk of the Council to be included in the decision record. Documents can be submitted by e-mail, fax or mail or in person to the Clerk of the Council. For additional information about testifying before the Metro Council please go to the Metro web site www.oregonmetro.gov and click on public comment opportunities. For assistance per the American Disabilities Act (ADA), dial TDD 503-797-1804 or 503-797-1540 (Council Office).



Solid Waste Roadmap

Key Issues

Council Work Session

July 12, 2011

Today's Presentation

10 min. Introduction and context

(Paul Slyman)

40 min. Scenario planning progress report

(Dan Pitzler, CH2M HILL)

20 min. Q&A and discussion

(Paul Slyman)

Purpose of the Solid Waste Roadmap

Guide the solid waste system

Key System Drivers

- Technological, economic and social change
- Improved recycling
- Ample landfill capacity
- Expiring contracts

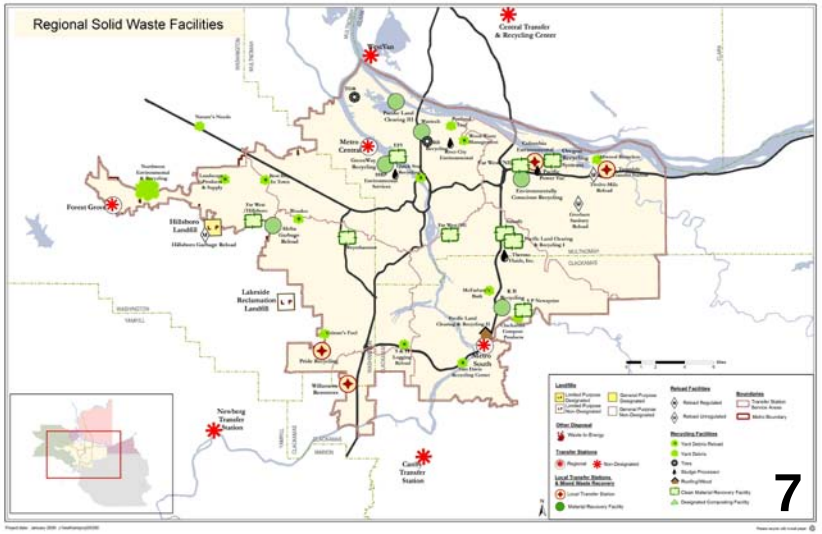
The Process: Scenario Planning

Stakeholders look to Metro for…

- Leadership
- Policy guidance
- Regulation

Near-term Decisions with System-wide Implications

- Food waste transfer and processing
- Food waste tip fee
- Tonnage allocations
- Disposition of Metro South Station
- Role of thermal conversion (emerging, WTE)
- System finance



Metro's Service Role

Metro injects competition into the transfer system

Today's Goals

- ✓ Reaffirm objectives and assumptions
- ✓ Share key issues
- ✓ Provide best-practice examples

CH2MHILL®

Solid Waste Roadmap
Objectives, Key Issues, Best Practices, and Future Policy Considerations

Metro Council Work Session, July 12, 2011

Contents

Roadmap purpose

Stakeholder interview summary

Roadmap objectives and key assumptions

Key issues, best practice examples, and future policy considerations

Roadmap Purpose

"Develop a plan for shepherding the Metro region solid waste system toward a future that better achieves the Metro Council's desired outcomes, and provides a framework to facilitate collaboration and coordinate solid waste projects over the coming decade."

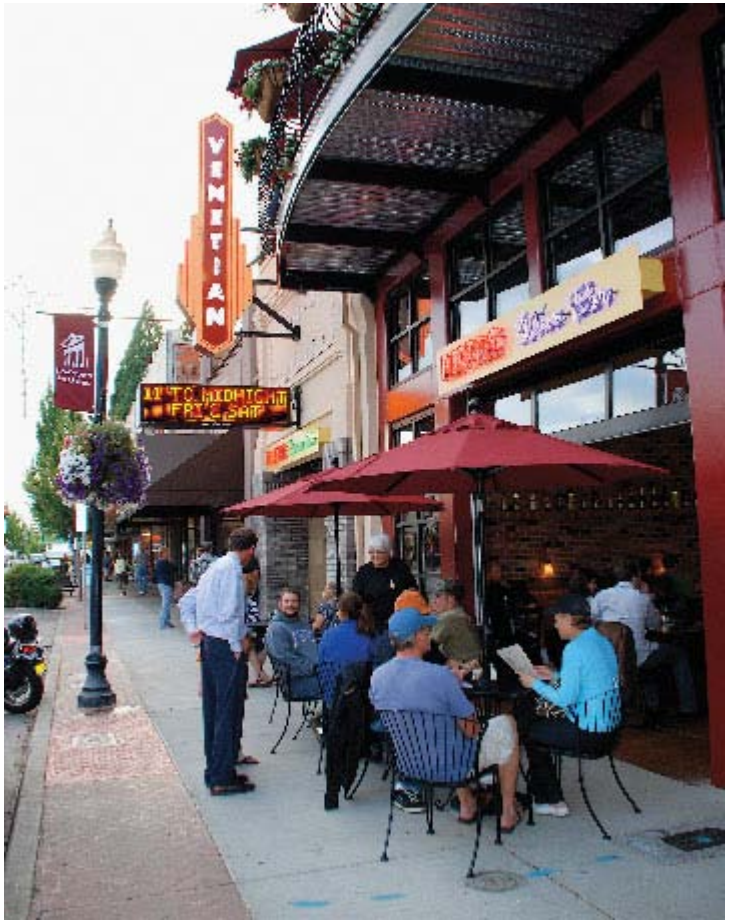
Stakeholder Interview Summary

- Held June 7-8, 2011
- Councilors, staff, local governments, industry
- Over 30 individuals, 10 small groups
- Hundreds of years of experience
- Purpose
  - Desired features and objectives of regional system
  - Key issues and challenges
  - External trends

Roadmap Objective 1: Vibrant Communities

1. Vibrant communities - *People live, work and play in vibrant communities where their everyday needs are easily accessible*

- Encourage innovation in waste prevention and recycling
- Ensure adequate oversight to prevent negative impacts from solid waste facilities



Roadmap Objective 2: Economic Prosperity

2. Economic Prosperity - *Current and future residents benefit from the region's sustained economic competitiveness and prosperity*

- Economic development by using green energy to attract new businesses
- Encourage new, emerging recycling businesses
- Encourage using materials locally
- Ensure reasonable and affordable rates for users

Roadmap Objective 3: Safe, Reliable Transportation

3. Safe, reliable transportation - *People have safe and reliable transportation choices that enhance their quality of life*

- Minimize trucking through the Columbia River Gorge
- Minimize wear on roads
- Minimize traffic congestion in the vicinity of facilities

Roadmap Objective 4: Leadership in Climate Change

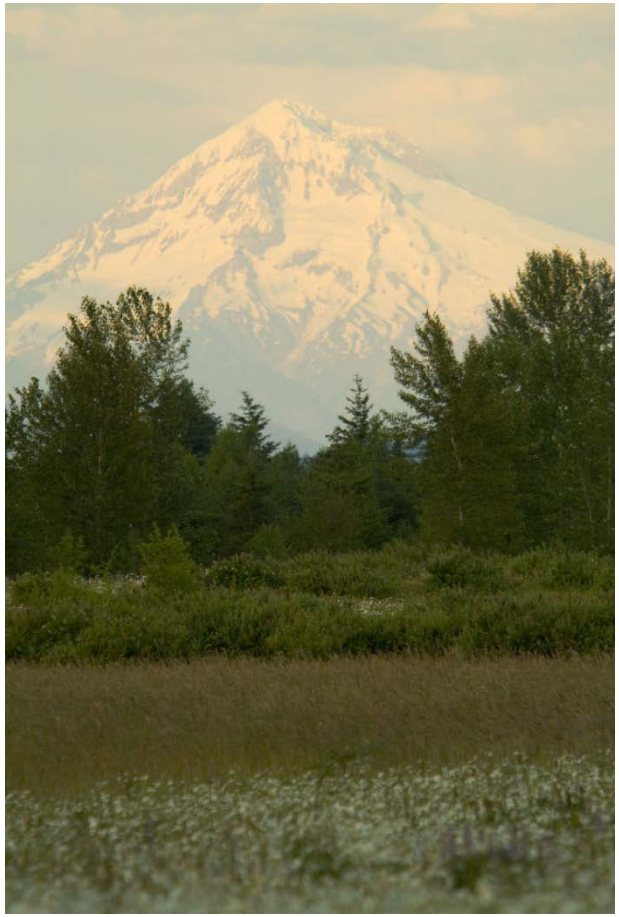
4. Leadership in Climate Change-
The region is a leader in minimizing contributions to global warming.

- Minimize diesel fuel use
- Minimize energy inputs and contributions to climate change
- Minimize greenhouse emissions by preventing waste

Roadmap Objective 5: Clean Air and Water

5. Clean air and water - *Current and future generations enjoy clean air, clean water and healthy ecosystems*

- Minimize air pollution (local pollutants)
- Minimize water pollution
- Minimize toxicity of materials in waste stream



Roadmap Objective 6: Equity

6. Equity - *The benefits and burdens of growth and change are distributed equitably*

- Distribute total societal cost equitably to all rate payers
- Ensure that the solid waste system does not disproportionately impact minority and low-income communities
- Ensure regional equity in the distribution of self-haul disposal opportunities
- Ensure that system is funded by those who use it

Roadmap Key Assumptions

- Metro will retain the hybrid system of material transfer stations
- Metro's authorities provide it with ownership and regulatory authority over post-consumer materials generated in the region
- Revenues from the solid waste system are an important source of funding for planning and Metro's general government activities

Key Issues

1. Zero waste and least cost planning
2. Organics regulatory framework
3. Organics processing facilities and technologies
4. Metro South
5. Self-haul policy and recycling options
6. Thermal conversion – emerging technologies and traditional waste-to-energy
7. System financing issues
8. Compressed natural gas for collection vehicles

Key Issue #1 – Zero Waste and Least Cost Planning Stakeholder Comments

- *Some advocate establishing a zero waste policy goal for the region*
- *The quantity of waste to landfill is a poor proxy for environmental performance*
- *To truly evaluate the impacts of policy choices, Metro would need to include externalities in decision making*

Source: Women's Global Council on Sustainability

Source: CalRecycle

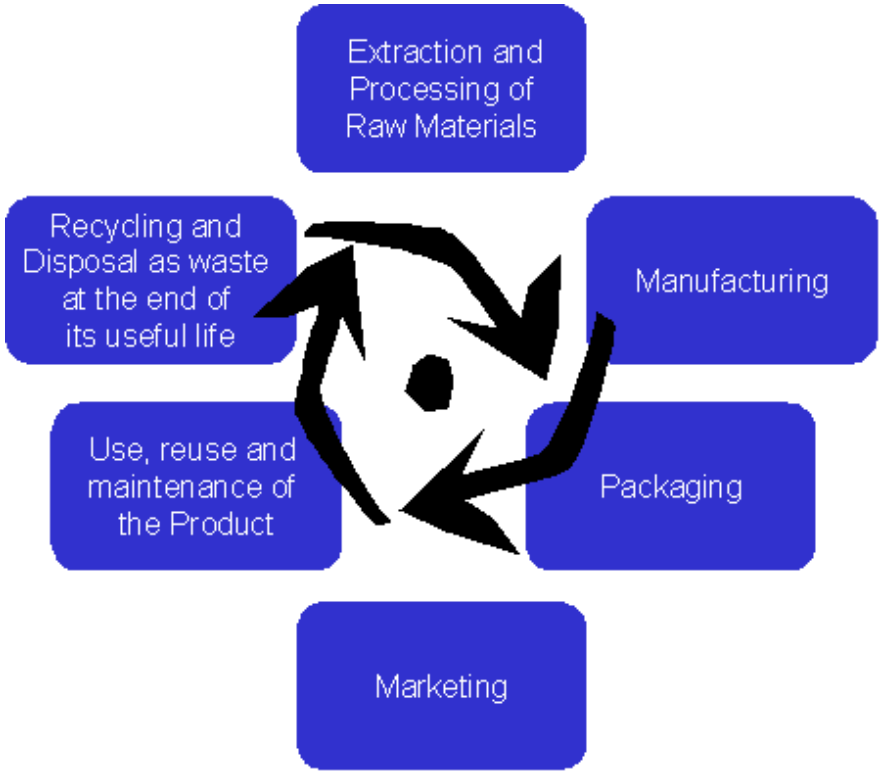
Zero Waste Definition[1]

- “A goal that guides people in changing their lifestyles and practices to emulate sustainable natural cycles, where all discarded materials are designed to become resources for others to use
- Designing and managing products and processes to avoid and eliminate the volume and toxicity of waste and materials, conserve and recover all resources, and not burn or bury them
- Eliminating all discharges to land, water or air that are a threat to planetary, human, animal or plant health"

[1]Zero Waste International Alliance, 2004. (abbreviated).

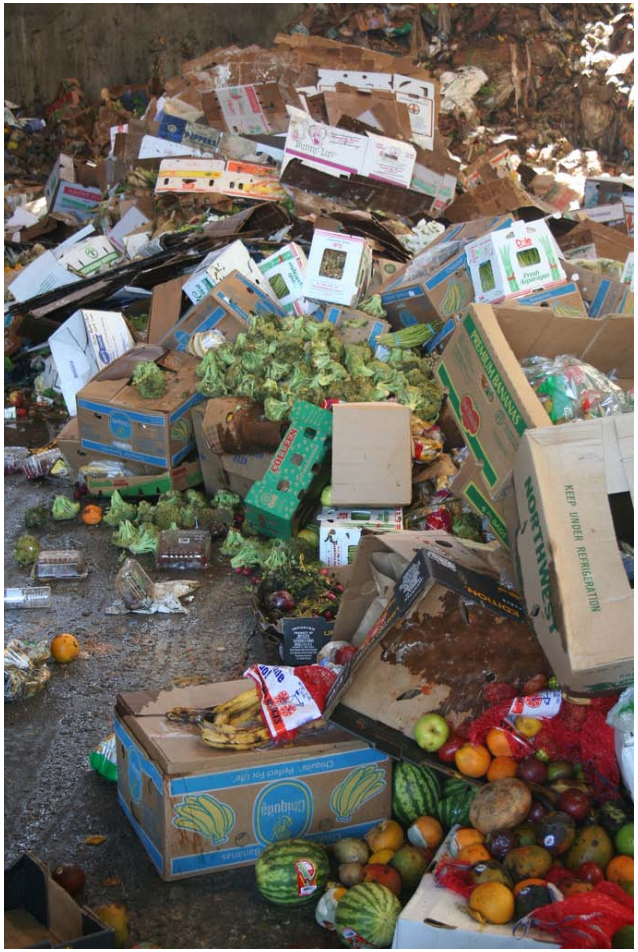
Key Issue #1 – Zero Waste and Least Cost Planning Best Practices and Future Policy Considerations

- Most zw advocates believe that:
  - Recycling is a stop gap measure (crushing glass vs. refilling bottle)
  - Thermal facilities are inconsistent with zero waste
- Least cost planning (with life cycle assessment) would identify environmental and social cost of policy actions
- Future policy considerations
  - Should Metro adopt a zero waste policy?
  - Should Metro use least cost planning to guide decision making?



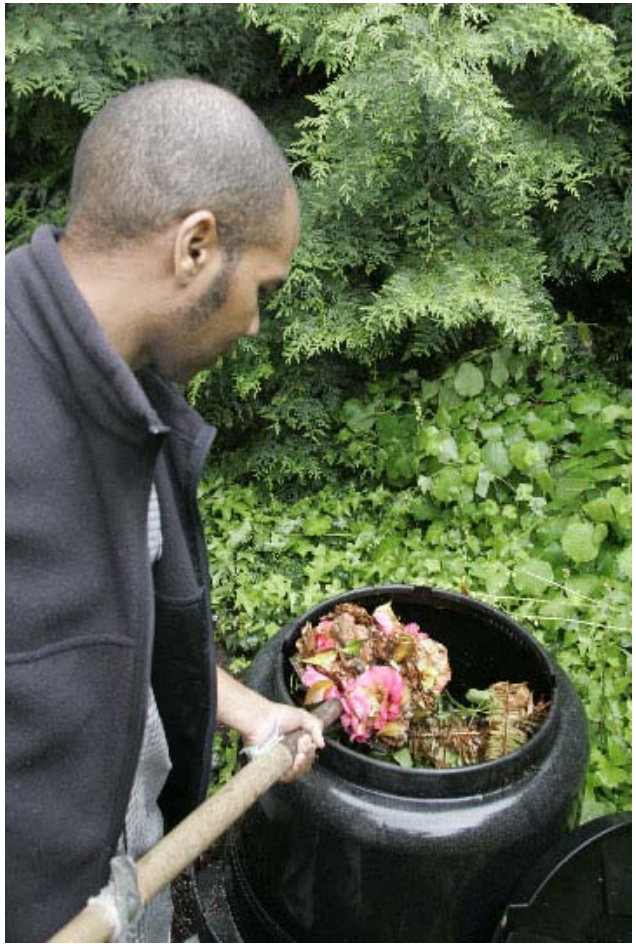
Key Issue #2 – Organics Regulatory Framework Stakeholder Comments

- *Metro should determine how best to drive recovery of organics*
- *Combined yard/food waste facilities are being developed, but requirements are not consistent*
- *The system would benefit from consistency among jurisdictions in the region about what is compostable and what is recyclable (e.g., recyclable cutlery, bioplastics)*
- *The fragmented nature of the region's collection system makes it more difficult to coordinate organics diversion programs*



Key Issue #2 –Organics Regulatory Framework
Best Practices and Policy Questions

- Food diversion options:
  - Food waste prevention policies
  - Advocate for improved food labeling (FDA)
  - Metro funding to support local collection programs
  - Disposal ban
  - Mandate separate food collection in residential and food preparation sectors, or all properties (San Francisco)
  - Food donation infrastructure
- Policy Questions:
  - What should be the operating standards for combined food/yard waste facilities?
  - Pending RFP: What is the relative benefit from energy from AD vs. its relative cost?



Key Issue #3 – Organics Processing Technologies Stakeholder Comments

- *Region needs more local options for processing and transferring organics*
- *Consider small-scale locally-distributed options*
- *For food, consider using anaerobic digestion (AD) to create energy rather than just composting*

Key Issues #3 – Example Organics Processing Facilities

Dry AD, Rendsburg, Germany

Wet AD, East Bay MUD., CA.

Composting, Cedar Grove, Everett, WA.

Composting, Recology, Jepson Prairie, CA.

Key Issue #3 – Organics Processing Technologies
Anaerobic digestion

- Organic materials are broken down in the absence of oxygen and produce biogas (55% to 60% methane) and digestate that is generally composted
- Wet and dry technologies
- Estimated ~6 million ton/yr capacity in Europe (2010)
- A few facilities in North America, with a number under development

Incoming commercial organics

Hydropulper

Biofilter

Combined heat-power manifold

Key Issue #3 – Organics Processing Technologies Best Practices and Future Policy Considerations

- Collection
  - Residential – food with yard or separate food
  - Non-residential – target high food producers initially
- Composting and Anaerobic digestion (AD)
  - Odor management is more difficult and costly than yard waste only
  - AD captures energy, then composting of digestate – added benefit and cost
- Future Policy Considerations
  - What is Metro's role in ensuring that food is collected separately from garbage at residential and non-residential properties in the region?

Gicon AD Plant, Biogasyl, France

Dufferin AD Plant, Toronto, ON.

Key Issue #4 – Metro South Stakeholder Comments

- *Metro South is located in the middle of a regional center; eventually a transfer station will not be highest and best use of that site*
- *The roadmap needs to define if the station should stay, go, or be reconfigured*
- *Metro should consider developing another self-haul facility nearby*
- *What type of replacement facility could be developed in the area (e.g., part of a lifestyle center)*
- *Metro should look for opportunities to help co-locating businesses with material management synergy*

Metro South

Key Issue #4 – Metro South
Best Practices and Future Policy Considerations

- Station no longer has capacity to meet Metro's objectives
- New transfer station issues
  - Other synergistic activities
  - Self-haul cost driver
  - Organics transfer
  - Materials recovery
- Future Policy Considerations
  - Should Metro South be closed and replaced at another location nearby?
  - Should Metro build a new station with self-haul capability in the vicinity?
  - Could self-haul be accommodated at an existing solid waste facility in the vicinity?

LEED Gold TS, Waste Management, Elgin IL.

Seattle So. RTS - $40m, similar size to Metro South

Key Issue #5 – Self-haul Policy and Recycling Options
Self-Haul at Metro South

- Self-haul service is valued highly by residences and small business owners
- 70% of trips = 25% of tons
- Average load 600-800 pounds
- 130,000 trips per year
- Lead to significant queues
- Cash transactions, slower unloading, and large space requirements = high cost service
- Highly recyclable, but expensive to recover

Bulky waste pickup, Washington, D.C.

Key Issue #5 – Self-haul Policy and Recycling Options Best Practices and Future Policy Considerations

- Mechanized self-haul recovery
  - Metro Central and Metro South
  - Monterey Regional Waste Management District (RWMD) – 130,000 tpy, 64% recovery
- Future policy considerations
  - Should additional self-haul be provided at some other location(s)?
  - Should Metro promote collection alternatives, and if so, which ones?

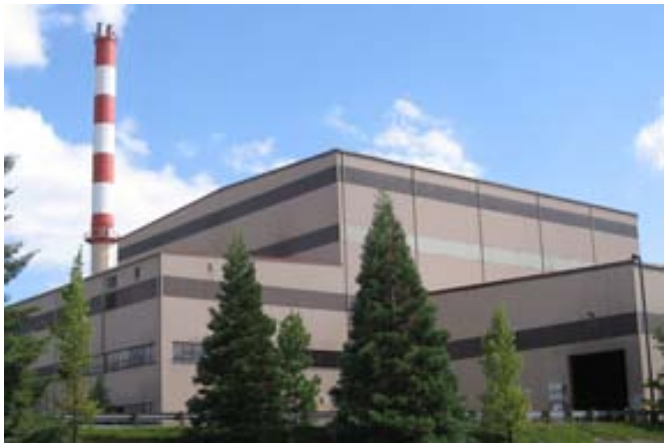
Pier 96 (Recology), San Francisco, CA.

Monterey RWMD, CA.

Key Issue #6 – Thermal Conversion: Emerging Technologies and Traditional Waste-to-Energy – Stakeholder Comments

- *Oregon City and St. Helens have restrictions on waste combustion; others do not*
- *Mass burn waste-to-energy (WTE) facilities are expensive and have risks requiring mitigation*
- *There are industrial developments in the region that would benefit from district heat provided by a waste-to-energy facility*
- *Covanta in Marion County might be interested in an expansion to their existing waste-to-energy facility*

Fernwarme Wein WTE, Vienna, Austria



Marion County, OR. WTE Facility

Key Issue #6 – Thermal Conversion: Emerging Technologies and Mass-Burn Waste-to-Energy – Stakeholder Comments (continued)

- Definition: Converting the carbon-based portion of the municipal solid waste (MSW) stream into useful products, such as electricity, ethanol, chemicals, aggregates, or fertilizers using heat, pressure, biological and/or chemical processes
- Plastic to oil facilities are an emerging technology
- If Metro considers pursuing a thermal facility, it should lay the groundwork for public acceptance
- The region should be careful to not commit to facilities with high tonnage requirement

Agilyx Plastic to Oil, Tigard, OR.

Mass-burn WTE, Spokane, WA.

Key Issue #6 – Thermal Conversion: Overview

- Mass-burn and refuse-derived-fuel (RDF) plants
  - 88 plants in U.S.; hundreds world wide
  - Some expansions in U.S. under way
- Emerging conversion technologies
  - Gasification, pyrolysis, plasma arc gasification
  - 40+ at 100 tpd that use municipal solid waste (MSW) as main feedstock
  - No commercial scale plants using MSW in operation in North America
  - Many in pilot stage, under construction, or planning

Mass-burn WTE, Burnaby, B.C.

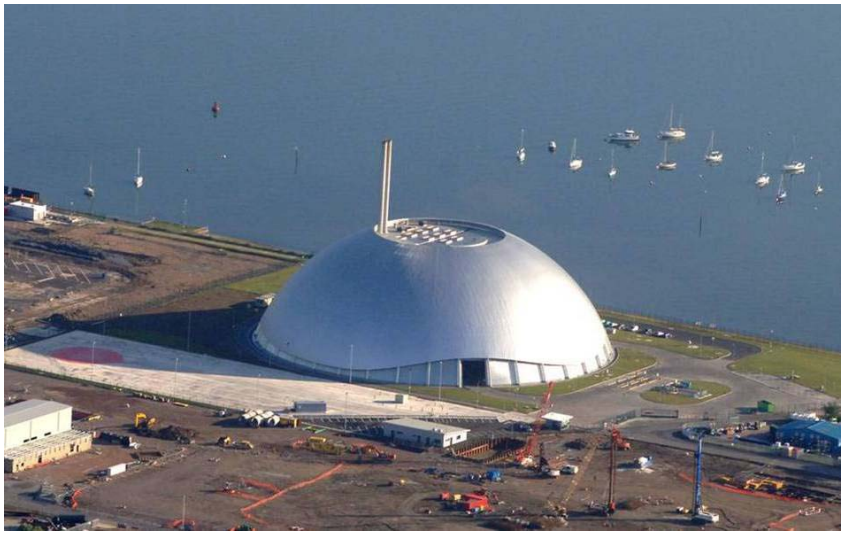
IES Pyrolysis Plant, Romoland, CA.

Key Issue #6 – Example European Waste-to-Energy Facilities

AVR, Rotterdam, Netherlands

Lille, France

Brescia, Italy



Portsmouth, UK.

Key Issue #6 – Thermal Conversion Technologies – Advantages and Disadvantages

- Advantages
  - Residuals to landfill are 1-25% of incoming MSW
  - Produces usable products from residual MSW like electricity, synthetic fuels, carbonized char, chemicals
  - Potential for district heat and broader industrial development
  - Lessen long-term environmental liability of landfills
  - Emerging technologies result in lower air emissions and potential for fewer greenhouse gas emissions vs. landfill
  - Emerging technologies can be smaller and target various waste streams (e.g., plastics to oil)

- Disadvantages
  - Mass-burn facilities capital intensive ($300-$700 million) requiring “put or pay” agreements
  - Low energy rates and not qualifying for renewable portfolio credits hurt economics
  - Closed loop reuse and recycling environmentally preferred
  - Emerging technologies promising but no operating history in North America
  - Generally more expensive than landfill
  - Segment of the public is strenously opposed to thermal facilities (e.g., California experience)

Key Issue #6 – Other Conversion Technology Considerations

- Dizzying array of processing methods and combinations producing different end-products
- Key drivers: EU landfill directive, local handling requirements, feed-in tariffs
- Autoclave
- Mechanical-biological treatment (MBT)

C3 Autoclave, Limerick, Ireland

Arrow-Bio MBT, Sydney Australia

Key Issue #6 – Thermal Conversion: Emerging Technologies and Traditional Waste-to-Energy – Future Policy Considerations

- Future Policy Considerations
  - Should Metro pursue thermal conversion for all or part of its waste?
  - How “proven” must a conversion technology be for Metro to consider it?

Plasco Plasma Arc, Ottawa, ON.

Ebara Gasification, kawaguchi, Japan

Key Issue #7 - System Financing Issues Stakeholder Comments

- *As less waste is disposed, Metro's per-ton excise tax will continue to increase*
- *Consider broadening Metro's tax base to include all materials that arrive at a processing facility (recycling, recovery, composting) or disposal facility*

Key Issue #7 - System Financing Issues
Best Practices and Future Policy Considerations

- Many options to broaden the revenue base
  - Many jusrisdictions charge mandatory fees for recycling and note it on utility bills
  - Tompkins County, NY. changed to annual fee per household
  - Franchise fee on recyclables in San Jose ($0 at this time)
  - In 2010, Berkeley proposed a fee on curbside recycling
- Future Policy Considerations
  - Should Metro broaden its fee base?
  - Should Metro charge a fee on recyclables, organics, and other currently exempt materials?

Key Issue # 8 – Compressed Natural Gas (CNG) for Collection Vehicles – Stakeholder Comments

- *Many stakeholders expressed support for a regional requirement that all material collection trucks use compressed natural gas*
- *Metro should consider taking a role in facilitating fueling centers across the region*
- *Haulers like the higher certainty of fuel prices, and the quieter vehicles that result in fewer customer complaints*

CNG Station, Fort Myers Beach, FL.

CNG Station, Camden, NJ.

Key Issue #8 – Compressed Natural Gas (CNG) for Collection Vehicles – Best Practices and Future Policy Considerations

- Estimated about 4,000 collection vehicles running on CNG today
- South Coast Air Quality Management District (SCAQMD) rules drove change and now 90% of collection vehicles in CA. run on natural gas
- Future Policy Considerations
  - Should Metro take action to help establish a network of alternative fuel centers across the region?
  - Should Metro establish a policy requiring all collection vehicles to operate using CNG?

Prices for natural gas powered vehicles have come down dramatically over the past few years. Quieter and cleaner operation are selling points.

Questions

- Objectives and assumptions affirmed?
- Visits, speakers or issues to learn more about?
- Topics for SWAC?

Objectives


Vibrant communities
Clean air and water
Climate change leadership
Making a great place
Equity
Transportation choices
Economic prosperity

Assumptions

- Hybrid transfer system
- Metro authority over waste
- Solid waste continues as a General Fund revenue source

Questions

- Objectives and assumptions affirmed?
- Visits, speakers or issues to learn more about?
- Topics for SWAC?

The Process: Scenario Planning

Next Steps

- Scenario and strategy development (August)
- More stakeholder involvement (September)
- Council work session (September)
- Analyze strategic options (Fall)
- Refine roadmap (2012)