

**Regional Solid Waste Management Plan
Contingency Plan Work Group
Final Report and Recommendations**



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Regional Solid Waste Management Plan Contingency Plan Work Group Final Report and Recommendations

WORK GROUP PURPOSE

In August 2003, the Regional Solid Waste Management Plan (RSWMP) Contingency Plan Work Group was convened to evaluate and recommend required recycling policies that could be implemented in the region if progress toward the 2005 regional waste recovery goal of 62 percent is not adequate.

BACKGROUND

Metro is the wasteshed representative to the state and is responsible for ensuring that the region meets its designated recovery goals of 62 percent by the end of 2005 and 64 percent by the end of 2009. The Regional Solid Waste Management Plan (RSWMP) provides a framework for coordinating solid waste programs within the region by establishing direction for resource management and the solid waste system, identifying strategies to increase recovery, identifying roles and responsibilities, and fulfilling a state requirement that Metro have a waste reduction plan.

Amendments to the Regional Solid Waste Management Plan (RSWMP) in April 2003 established a contingency planning process to evaluate and recommend strategies to reach the 2005 recovery goal of 62 percent if sufficient progress is not being made. These strategies were intended to identify recycling policies to increase recovery in the sectors where the largest tonnage of recoverable waste remains: commercial, construction and demolition, and commercial organics.

The Contingency Plan Work Group met eight times from August 27, 2003 to December 3, 2003. The group evaluated 12 potential strategies to increase recovery. Some members were divided on some of the strategies that were adopted or eliminated from consideration. As a package, however, the work group approved (by an 11-to-1 vote) a set of four contingency strategies to increase progress toward the 2005 recovery goal.

WORK GROUP CHARGE

The charge of the Contingency Plan Work Group, approved by Metro Council and Regional Solid Waste Advisory Committee (SWAC), was as follows:

1. Identify required recycling and other methods of increasing progress toward recovery goals for three sectors: building industries; businesses; and commercially-generated organics.

2. Consider whether methods identified are best implemented through actions of local governments, Metro, the State of Oregon or a combination;
3. Determine whether adoption of these methods would be legally and financially feasible and would enable the region to meet its recovery goals; and
4. Recommend a contingency plan to Metro Council and SWAC by January 1, 2004.

Although not directed by Metro Council and SWAC, the group was asked to recommend “trigger points” for implementation of the proposed contingency plan if sufficient progress toward the region’s recovery goal is not reflected in recovery reports.

WORK GROUP COMPOSITION

In August 2003, Metro Chief Operating Officer Michael Jordan appointed a core group of 12 individuals who represent businesses, recyclers, local government and citizen interests to serve on the Contingency Plan Work Group (Table 1).

Lee Barrett, Waste Reduction and Outreach Manager, acted as the non-voting facilitator of the work group. Marta McGuire, Waste Reduction Planner, provided technical assistance and staffed the work group. Gina Cubbon served as the administrative secretary for all of the work group meetings.

Table 1. Contingency Plan Work Group Members

Name	Affiliation
Mark Altenhofen	Washington County (local government)
Jason Buch	R&H Construction Company (construction company)
JoAnn Herrigel	City of Milwaukie (local government)
Mike Huycke	WRI/Allied Waste Industries (processor)
Les Joel	Blue Heron Paper Company (end-user)
Joe Keating	Sierra Club (environmental organization)
Wade Lange	Ashforth Pacific (multi-tenant property management)
George Lundberg	Epson (large business)
Mike Miller	Gresham Sanitary Service (collector)
Jerry Powell	Resource Recycling Magazine (citizen)
Chip Sammons	Holistic Pet Center (small business)
Bruce Walker	City of Portland (local government)

RECOMMENDED CONTINGENCY STRATEGIES

With the goal of reaching the 62 percent recovery rate by 2005, the Contingency Plan Work Group recommends the following strategies:

Strategy #1: Metro should require all construction and demolition loads from the region to be processed before landfilling, beginning July 1, 2004. This strategy targets additional recovery in the building industry sector. Facilities that are franchised or licensed in the Metro region are currently required to perform recovery on construction and demolition loads at minimum recovery rate of 25 percent. Designated Facility Agreements with facilities outside the region would need to be revised to either: 1) require material recovery at the facility; or 2) require the facility to accept only material that has been processed (MRFed). It is recommended that Metro facilities be included under this requirement.

Strategy #2: Metro should require local governments to adopt mandatory business recycling requirements that require the recycling of specific materials. Metro should provide additional funding to expand business recycling assistance and outreach programs to jurisdictions that have adopted mandatory recycling, with the following conditions:

- Beginning July 1, 2004, Metro should provide additional funding to local jurisdictions for expanded business recycling assistance and outreach.
- If by January 1, 2005, the development of a mandatory recycling program is not underway in individual jurisdictions, those jurisdictions should not be eligible to receive the additional funding for expanded recycling assistance and outreach.
- If by January 1, 2006, a mandatory recycling program is not in place in individual jurisdictions, those jurisdictions should not receive recycling assistance and outreach funding (including both present program funding and additional contingency funding).

The Contingency Plan Work Group recommends that Metro provide additional funding for the Commercial Technical Assistance Program (\$400,000 per year) and commercial recycling outreach campaigns (\$110,000 per year) beginning in FY 04-05. The proposed funding doubles the FY 03-04 business recycling assistance program and commercial outreach budget. These strategies target additional recovery in the commercial sector, where the greatest amount of tonnage is needed to meet the 2005 recovery goal.

Strategy #3: Metro should require all dry waste loads from the region to be processed before landfilling. Dry waste does not include food or other putrescible waste. Typically, recyclables in a dry waste load include paper, wood, metal and glass. The work group recommends that this strategy be implemented after the adoption of mandatory recycling requirements and expanded business recycling assistance and outreach to capture any remaining recyclables in dry waste loads. This strategy may be implemented in a similar manner as Contingency Strategy #1.

Strategy #4: Metro should evaluate organics contingency strategies in one year.

The Contingency Plan Work Group strongly supports Metro’s efforts and leadership in developing an organics collection program for the region. At this time, the work group feels it is premature to implement contingency measures and recommends evaluating the following strategies to increase recovery in one year:

- 1) Mandatory recovery of food waste from certain sized businesses; and
- 2) Residential organics collection (food waste collected with yard debris).

In this evaluation, factors for consideration should include: 1) a processor is located and operational; 2) at least two jurisdictions have organics collection programs established; and 3) at least 5,000 tons (over baseline of 12,000 tons) of organics are being recovered.

PROJECTED RECOVERY

An analysis of RSWMP performance indicators in March 1999 found that although recovery through local government residential curbside programs was exceeding anticipated progress, recovery was lagging significantly in the construction and demolition, business and commercial organics sectors. As a result, Metro and local governments developed work plans to target these sectors for additional recovery, and the RSWMP was amended to reflect these strategies (known as the Waste Reduction Initiatives).

In early 2002, the region projected that 177,000 tons would be needed from the construction and demolition, business and commercial organics sectors in order to meet the 2005 recovery goal of 62 percent. Final Oregon Department of Environmental Quality data received in November 2003 indicated 180,000 tons would be needed.

As of the end of 2002, the region’s recovery rate was 54 percent. Based on past recovery trends, it is highly unlikely that the region will meet the 2005 recovery goal without increased efforts. The projected recovery as a result of the implementation of the recommended contingency strategies is illustrated in Table 2.

Table 2. Projected Recovery from Contingency Recommendations

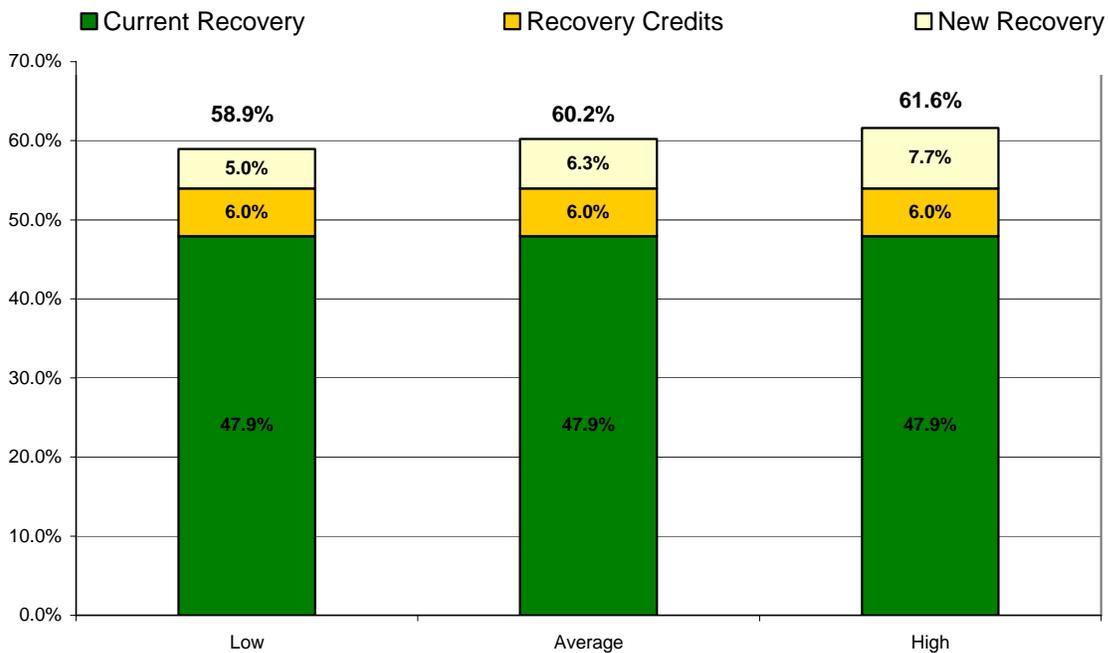
Recommended Contingency Strategies	Projected Recovery by Tons			Net Recovery Rate Increase*		
	Low	Average	High	Low	Average	High
C&D Required MRF (Strategy 1)	32,000	33,000	34,000	1.4%	1.5%	1.5%
Mandatory Recycling/Expanded CTAP (Strategy 2)	70,000	88,000	108,000	3.1%	3.9%	4.9%
Dry Waste Required MRF (Strategy 3)	5,000	10,000	15,000	0.2%	0.4%	0.7%
Organics (Strategy 4)	5,000	10,000	15,000	0.2%	0.4%	0.7%
Total	112,000	141,000	172,000	5.0%	6.3%	7.7%

*Numbers may not sum due to rounding.

The implementation of the contingency strategies has the potential to recover an additional 112,000 to 172,000 tons. For Contingency Strategies 1, 3 and 4, the difference between the low to high scenarios reflects differences in the level of effort and success of the programs. The range for Contingency Strategy 2 illustrates differences in the materials targeted by the program. The low scenario targets paper only, and the average scenario targets paper and containers (metal, plastic and glass). The high scenario targets paper, containers, and yard trimmings from small businesses and multi-family units. These materials were selected based on potential recovery, available processing capacity and market stability.

Figure 1 illustrates the range of recovery rates likely to be realized as a result of the implementation of the contingency strategies. The high scenario would allow the region to reach the 62 percent recovery goal, assuming a minimal contribution from other sectors not targeted by the Waste Reduction Initiatives.

Figure 1. Projected Metro Recovery Rate



CONTINGENCY PLAN WORK GROUP DELIBERATIONS

The work group evaluated potential contingency strategies targeting three sectors: building industry, commercial and commercial organics. These three sectors comprise the Waste Reduction Initiatives, which have specific goals for reaching the 2005 recovery goal. The work group examined potential contingency strategies for each sector independently and then evaluated how they worked in combination.

Overall, 12 strategies were proposed for the group to examine further. The proposed contingency strategies were evaluated based on several criteria, including:

1. **Impact.** The work group's final recommendation must include those strategies likely to attain the sizable level of additional waste diversion required for Metro to meet the 62 percent recovery goal.
2. **Use elsewhere.** The final list should contain alternatives being employed in other communities in the United States and Canada.
3. **Compatibility.** The final list should include strategies that can be integrated into a complete system.
4. **Ease and cost of implementation.** The final strategies should be legally and financially feasible.
5. **Market capacity.** Given the time frame in which Metro must attain the 62 percent goal, the recommended strategies should focus on efforts that rely on current and expected market capacity.

Matrices were developed to assist the work group with the decision-making process and evaluation (See Appendix A). In addition, Metro staff outlined the twelve proposed strategies to provide additional detail and identify potential program elements (see Appendix B and C). The work group deliberations are detailed by sector below.

Construction and Demolition

The region must recover 35,000 tons of construction and demolition waste from the building industry sector in order to meet its established goals. Metro staff presented information to the work group on the Construction and Demolition Waste Reduction Initiative work plan and its progress to date.

The work group proposed the following contingency strategies to increase recovery from the building industry sector:

1. Require all dry waste loads from the region to be processed before landfilling.
2. Require all construction and demolition loads to be processed before landfilling.
3. Ban the landfill disposal of construction and demolition materials, including wood, cardboard and metal, at all mixed solid waste facilities that take Metro region waste.

Metro staff provided the group with estimates on the probable tonnage diverted for the proposed strategies and with information on Metro's authority to mandate processing of materials and ban items from disposal.

There was general consensus among the group supporting the strategy to require all construction and demolition loads to be processed before landfilling. The construction industry representative did not feel this would negatively impact its building and construction operations. Processor representatives confirmed the system's capacity to

handle the additional material. Based on an 11-to-1 vote, the group adopted this strategy as a contingency recommendation. The member who voted against the strategy preferred a disposal ban approach. The group further recommended that the strategy be implemented July 1, 2004, and that Metro facilities should be included under the requirement.

The group had some discussion about the possibility of a phased approach that would include mandatory processing of construction and demolition loads, followed by a disposal ban. Under this approach, a disposal ban would be implemented if a certain tonnage level was not achieved through mandatory processing. Although his motion failed (by a 5-to-7 vote), a substantial minority supported this strategy, including two local governments, both citizens and the large business representative. Some members preferred disposal bans because this method offered both a higher level of recovery and more implementation flexibility than mandatory processing requirements.

The final contingency strategy the work group evaluated was mandatory processing of all dry waste loads, including commercial drop boxes that contain only dry waste. Dry waste does not include food or other putrescible waste. Typically, recyclables in a dry waste load include paper, wood, metal and glass. With the exception of two work group members (one local government and one large business representative), this strategy was adopted as a recommended contingency strategy based on a 10-to-2 vote. The work group agreed that required dry waste processing should not replace the source separation system. Some members, however, still felt this strategy may send the wrong message to generators. To address this issue, the group agreed that this strategy should be implemented following mandatory recycling and expanded recycling assistance and outreach. The group felt the strategies that focus on a source-separated approach should be implemented first.

Commercial

The region must recover 97,000 tons of waste from the commercial sector in order to meet the 62 percent recovery goal by 2005. Commercial waste comprises more than 45 percent of the region's total disposed waste. Metro staff presented an overview of the Commercial Waste Reduction Initiative work plan and its progress to date.

The work group proposed the following contingency strategies to increase recovery in the commercial sector:

1. Improve the opportunity model by setting regional recycling service standards.
2. Provide incentives to haulers for increasing recycling tonnage or the number of customers recycling.
3. Set garbage collection rates higher so there is a greater economic incentive for businesses to subscribe to a lower garbage service level and increase recycling.

4. Expand the regional Commercial Technical Assistance Program (CTAP) program and outreach programs by the raising regional system fee in the region by \$1 per ton, resulting in \$1.2 million revenue—50 percent of revenue dedicated to outreach campaigns and 50 percent to CTAP.
5. Adopt mandatory business recycling requirements (requirements might include minimum diversion requirements or recycling of specific materials).
6. Ban the landfill disposal of key commercial materials at all mixed solid waste facilities that take waste from the Metro region (cardboard, mixed paper, mixed containers).

Metro staff provided the work group with estimates on the probable tonnage diverted for the proposed strategies, Metro's authority to mandate recycling and ban items from disposal, the system's capacity to recover additional materials, and summaries of other communities that have implemented required recycling programs.

After further evaluation, the work group eliminated four of the above strategies (improving the opportunity model, hauler incentives, rate increase and disposal ban on key materials). In a 5-to-4 vote, the group eliminated improving the opportunity model strategy. The group was divided on this issue—with some members not seeing the need for establishing regional standards versus others that felt having consistent service standards across the region was a vital step to increasing recovery.

The work group unanimously voted to eliminate hauler incentives. The group felt this option may be difficult and costly to design and implement. The group eliminated the rate increase option because of the difficulty in estimating the potential impact of the strategy. The group felt a rate increase may not produce the desired result, especially if the level of the rate boost is modest.

The work group had additional discussion on mandatory recycling and disposal bans. There were a number of questions and concerns regarding enforcement and implementation of mandatory recycling and disposal bans. Mandatory recycling was defined to the work group as recycling requirements that identify specific materials to be source-separated or minimum diversion requirements that target the generator. Disposal bans were defined as regulations that prohibit the landfill disposal of a specific item. Bans are typically enforced at disposal facilities, but can be enforced at the generator and hauler level. Potential enforcement measures and possible program elements were presented to the work group by Metro staff.

Based on a 7-to-5 vote, the work group narrowly eliminated disposal bans as a contingency strategy. One local government, both citizens, one business and one end-user representative were in favor of the strategy. Some members in support of this approach felt it offered more implementation flexibility and higher recovery levels. Members opposed to the strategy felt a disposal ban approach would be more difficult to enforce and more expensive for generators. In addition, some members preferred mandatory recycling over disposal bans because it put the onus on the generator.

The work group nominated mandatory recycling and expanded business recycling assistance and outreach as the primary strategies to increase recovery in the commercial sector. Both of these strategies, however, passed narrowly.

In a 6-to-4 vote (with one abstention), mandatory business recycling was adopted as a recommended contingency strategy. Both businesses, the construction company, one citizen, one jurisdiction and the hauler representative supported mandatory recycling requirements. The small business representative viewed this strategy as a method for setting a minimum standard in the region for recycling. The hauler representative felt a mandatory approach should target the generator with recycling requirements versus a disposal ban that focuses on the disposal end. The City of Portland, which established mandatory recycling in 1996, supported expanding mandatory recycling requirements throughout the region. Some work group members recommended that any increase in collection costs resulting from mandatory recycling should be passed through to ratepayers through the local government rate review process.

Two local governments, one citizen and the end-user representative voted against the measure. One local government felt this requirement would negatively impact economic development in his jurisdiction. The other local government felt it would not be feasible to ask local governments to individually adopt mandatory recycling requirements and was in favor of the disposal ban approach.

The expanded recycling assistance and outreach approach was passed by a vote of 6-to-5. Both businesses, the construction company, one citizen, one jurisdiction and the hauler representative supported this strategy. Some members did not support prescribing a dollar amount for this strategy and felt that it was outside of the work group's charge to make that type of funding recommendation. Others felt it was important to designate resources and staff and recommend an amount. Several members did not support the strategy because they did not feel this effort alone could achieve the recovery levels needed to meet the established goal.

In order to garner more support for this strategy, the author proposed revising the recommendation to read:

Provide significant expansion of recycling assistance and outreach to businesses in the Metro region for jurisdictions that have adopted mandatory recycling. It is recommended that Metro provide additional funding for the Commercial Technical Assistance Program (\$400,000 per year) and commercial recycling outreach campaigns (\$110,000 per year).

The funding amounts were based on doubling the current CTAP and outreach budgets. The group unanimously voted to amend the strategy with the new dollar amounts and recommended that an evaluation of the effectiveness of this strategy be conducted after two years.

With this revision, the group further considered the commercial contingency strategies of mandatory recycling and expanded recycling assistance and outreach. The group

discussed mandatory recycling in terms of requiring the recycling of specific materials versus requiring a minimum diversion requirement. The group felt a minimum diversion requirement was too subjective and would be difficult to monitor. Based on a vote of 7 to 4 (with one abstention), the group voted to amend the strategy to require the recycling of specific materials.

The group discussed the potential of linking the expanded business recycling assistance and outreach to mandatory recycling. Some members felt that expanded business recycling assistance and outreach alone was not sufficient to get the additional recovery needed to reach the 2005 goal. One jurisdiction commented that additional funding would assist local governments with adopting mandatory recycling requirements.

In the end, the group elected to link expanded recycling assistance program and outreach funding to mandatory recycling. The additional funding would be used at first as an incentive for local governments to adopt mandatory recycling requirements. After a specified time period, all Metro funding would be discontinued if local governments had not adopted mandatory recycling. The group proposed multiple timelines and implementation options for this strategy. Some group members advocated for a tighter timeline for the implementation of mandatory recycling or for making funding available to only those local governments that initiated a process to adopt mandatory recycling. Eventually, the group came to agreement on the following proposed dates and conditions:

- Beginning July 1, 2004, Metro should provide additional funding to local jurisdictions for expanded business recycling assistance and outreach.
- If by January 1, 2005, the development of a mandatory recycling program is not underway in individual jurisdictions, those jurisdictions should not be eligible to receive the additional funding for expanded recycling assistance and outreach.
- If by January 1, 2006, a mandatory recycling program is not in place in individual jurisdictions, those jurisdictions should not receive recycling assistance and outreach funding (including both present program funding and additional contingency funding).

This amendment to the recommended strategy passed by a 9-to-3 vote.

Organics

The region must recover 45,000 tons of organic waste from the commercial sector in order to meet its established goals. Metro staff presented an overview of the Organics Waste Reduction Initiative work plan and its progress to date.

The work group proposed the following contingency strategies to increase recovery in the organics sector:

1. Require local governments to adopt an incentive rate for commercial organics collection (for the 700 largest food-generating businesses) in the region.

2. Mandatory recovery of food waste from certain sized businesses (for the 700 largest food-generating businesses) in the region.
3. Residential organics collection (food waste collected with yard debris).

Overall, the work group supported the development of organics collection in theory, but there were many concerns and unknowns about program development in this region. Some members commented that implementation at the residential level would assist the region at getting additional tonnage and strengthen the commercial sector program.

The work group nominated mandatory recovery of food waste from certain sized businesses and residential organics collection as contingency strategies. The work group, however, unanimously agreed that it was premature to recommend contingency strategies for a system that is still under development.

Therefore, the work group recommended the strategies be evaluated after one year if certain conditions are met, including: 1) a processor is located and operational; 2) at least two jurisdictions have organics collection programs established; and 3) at least 5,000 tons (over baseline of 12,000 tons) of organics are being recovered.

Appendix A: Proposed Contingency Strategy Matrix



METRO Proposed Contingency Strategies

#	Contingency Strategy				Probable Tonnage Diverted	Feasibility of Implementation	Cost of Implementation					Vote
		C&D	Commercial	Organics			Generators	Processing Facilities	Haulers	Local Governments	Metro	
1	Require all dry waste loads from the region to be processed before landfilling.	X	X		Moderate to High (53,000-71,000)	Moderate	Moderate	Low to High (depending on current ability to process dry waste loads)	Low	Low	Low	10-2 approved
2	Require all C&D loads be processed before landfilling.	X			Low to Moderate (38,000 to 46,000)	High	Moderate	Low to High (depending on current ability to process C&D loads)	Low	Low	Low	11-1 approved
3	Ban the landfill disposal of C&D materials, including wood, cardboard and metal at all MSW facilities that take Metro region waste.	X			Low to Moderate (31,000 to 37,000)	Moderate	Moderate	Undetermined (based on current ability to recover recyclables)	Moderate	Low	Low	5-7 failed
4	Ban the landfill disposal of key commercial materials at all MSW facilities that take waste from the Metro region (cardboard, mixed paper, mixed containers).		X		High (88,000)	Moderate	Low to Moderate	Undetermined (based on ability to recover recyclables)	Moderate	Moderate	Low	7-5 approved
5	Mandatory business recycling requirements adopted by local jurisdictions.		X		Low to High (28,000-73,000)	Low	Low to Moderate	/	Moderate	Moderate	Low	6-4 (1 abstention) approved
6	Improve opportunity model by setting regional recycling service standards.	X			Low (28,000)	Low	Low	/	Moderate	Low	Low	4-5 failed
7	Incentives to haulers for increasing recycling tonnage or number of customers recycling.		X		Moderate to High	Low	Low	/	Low	Low	High	0-10 failed
8	Raise regional system fee in the region by \$1 per ton, resulting in \$1.2 million revenue—50 percent of revenue dedicated to outreach campaigns and 50 percent dedicated to expanding the increase Commercial Technical Assistance Program (CTAP) program.*		X		Moderate	Moderate	Low	/	Low	Low	Low	6-5 approved
9	Set garbage collection rates higher so there is a greater economic incentive for businesses to subscribe to a lower garbage service level and increase recycling.		X		Moderate	Low	Moderate	/	Low	Low	Low	0-10 failed
10	Require local governments to adopt an incentive rate for commercial organics collection (for the 700 largest food-generating businesses) in the region.			X	Low to Moderate (36,000)	Low to Moderate	Low to Moderate	/	Low	Moderate to High	Low	0-6 (2 abstentions) failed
11	Mandatory recovery of food waste from certain sized businesses (for the 700 largest food-generating businesses) in the region.			X	Low to Moderate (36,000)	Low to Moderate	Moderate	/	Moderate	Moderate to High	Moderate	12-0 approved
12	Residential organics collection (food waste collected with yard debris).			X	High (40,000 to 52,000)	Moderate	Moderate	**	Low	Low to Moderate	Low	12-0 approved

*This language was later revised to include specific dollar amounts and was approved by a vote of 12-0.

Appendix B: Proposed Contingency Strategy Profiles

Contingency Strategy Profile # 1

Strategy and Goals

Contingency Strategy:	Require all dry waste loads from the region to be processed before landfilling.
Target Sector:	Building industry and commercial businesses with drop box service
Tons Needed:	35,000 tons (C&D) and 45,000 tons (commercial)

Possible Program Elements

Program:	Metro requires all facilities that accept mixed dry waste loads from the region to process the material before landfilling. Mixed dry waste facilities (MRFs) are facilities that accept loads of mixed dry waste (paper, wood, metal, glass) for processing. Dry waste does not include food or other putrescible waste. Mixed construction and demolition debris is accepted at mixed dry waste processing facilities that sort materials for recycling. All mixed dry waste MRFs are required to recover a minimum of 25 percent of the mixed dry waste loads they receive. Some facilities accept both source-separated and dry waste loads.
Target Generators:	C&D and commercial generators.
Target Materials:	Wood, metal and cardboard.
Adoption Process:	Metro amends the Regional Solid Waste Management Plan and adopts an ordinance to require all facilities that accept mixed dry waste to process material before landfilling.
Potential Enforcement Measures:	Metro has authority to enforce at solid waste facilities in the Metro region. Enforcement may include Metro setting a minimum recovery rate at processing facilities that accept material from the Metro region or identifying specific materials to be recovered. Warnings and fines may be issued for non-compliance.
Probable Tonnage Recovered:	Projected recovery includes 53,000 to 71,000 tons based on: <ul style="list-style-type: none"> ▪ Special Waste Landfills (SPLF) at 30 percent recovery, 44,000 ▪ Metro Transfer Stations at 20 percent recovery, 10,000 tons ▪ Metro Transfer Stations at 25 percent recovery, 18,000 tons ▪ Forest Grove Transfer at 25 percent recovery, 8,500

Cost of Implementation

Generators:	Moderate. May cause increase in garbage rates for generators.
Processing Facilities:	<ul style="list-style-type: none"> ▪ Low. Costs will be lower for facilities that have the ability to process dry waste loads. ▪ High. Costs will be higher for facilities that do not have the ability to process dry waste loads.
Haulers:	Low. Haulers will be required to take dry waste loads to MRFs to be sorted instead of to transfer stations or directly to the landfill. Costs may be higher for haulers who currently take loads to Hillsboro or Lakeside because they will have to pay a higher tip fee at a MRF.
Local Governments:	Low. No action required on the part of local governments.
Metro:	Low. Metro currently has two inspectors who monitor facilities.

Feasibility of Implementation

Moderate. This strategy will require only a minimal number of facilities in the region to change operations.

Potential Barriers

- May discourage commercial drop box customers from source separating materials on-site. Source-separated materials are taken to clean MRFs, where more than 95 percent of loads are recovered for recycling.
-

Contingency Strategy Profile # 2

Strategy and Goals

Contingency Strategy: Require all C&D loads to be processed before landfilling.
 Target Sector: Building industry (construction and demolition debris)
 Tons Needed: 35,000 tons

Possible Program Elements

- Program: Metro requires all mixed dry waste facilities that accept C&D loads from the region to process the material before landfilling. Mixed dry waste facilities (MRFs) are facilities that accept loads of mixed dry waste (paper, wood, metal, glass) for processing. Dry waste does not include food or other putrescible waste. Mixed construction and demolition debris is accepted at mixed dry waste processing facilities that sort materials for recycling. All mixed dry waste MRFs are required to recover a minimum of 25 percent of the mixed dry waste loads they receive. Some facilities accept both source-separated and dry waste loads.
- Target Generators: C&D generators.
- Target Materials: Wood, metal, brick, roofing, and cardboard.
- Adoption Process: Metro amends the Regional Solid Waste Management Plan and adopts an ordinance to require all facilities that accept C&D loads to process material before land filling.
- Potential Enforcement Measures: Metro has authority to enforce at facilities. Enforcement may include setting a minimum recovery rate or identifying specific materials to be recovered. Warnings and fines may be issued for non-compliance.
- Probable Tonnage Recovered: Projected recovery includes 38,000 to 46,000 tons based on:
- Special Waste Landfills (SPLF) at 35 percent recovery, 31,000
 - Metro Transfer Stations at 30 percent recovery, 8,000 tons
 - Metro Transfer Stations at 35 percent recovery, 10,000 tons
 - Forest Grove Transfer at 35 percent recovery, 5,000

Cost of Implementation

- Generators: Low to moderate. Additional costs will depend on whether a generator initiates a source separation program.
- Processing Facilities:
 - Low. Costs will be lower for facilities that have the ability to process C&D loads.
 - High. Costs will be higher for facilities that do not have the ability to process C&D waste loads.
- Haulers: Low. Haulers will be required to take C&D loads to MRFs to be sorted.
- Local Governments: Low. No action required on the part of local governments.
- Metro: Low. Metro currently has two inspectors who monitor facilities.
-

Feasibility of Implementation

High. Metro is currently taking steps to require all C&D loads be processed at MRFs before being sent to the landfill.

Contingency Strategy Profile # 3

Strategy and Goals

- Contingency Strategy: Disposal ban on C&D materials including wood, cardboard and metal at all MSW facilities that take Metro region waste.
- Target Sector: Building industry (construction and demolition debris)
- Tons Needed: 35,000 tons
-

Possible Program Elements

- Program: Metro bans C&D loads of wood, metal and cardboard from landfill disposal.
- Target Generators: Commercial generators.
- Target Materials: Wood, metal and cardboard.
- Adoption Process: Metro amends the Regional Solid Waste Management Plan and adopts an ordinance to ban C&D loads of wood, metal and cardboard from landfill disposal.
- Potential Enforcement Measures: Metro has authority to enforce at solid waste facilities in the Metro region. Enforcement may include setting a minimum recovery rate or identifying specific materials to be recovered. Warnings and fines may be issued for non-compliance.
- Probable Tonnage Recovered: Projected recovery includes 31,000 to 37,000 tons based on:
 - Special Waste Landfills (SPLF) at 35 percent recovery, 25,000
 - Metro Transfer Stations at 30 percent recovery, 6,000 tons
 - Metro Transfer Stations at 35 percent recovery, 8,000 tons
 - Forest Grove Transfer at 35 percent recovery, 4,000

*Assumes wood, metal, cardboard are 80 percent of materials targeted in C&D.

Cost of Implementation

- Generators: Moderate. Generators may have to initiate source separation programs.
- Processing Facilities: Undetermined. Costs based on the facilities' ability to recover recyclables.
- Haulers: Moderate. Haulers may have to provide increased recycling services.
- Local Governments: Low. Will require some action on the part of local governments if enforcement is targeted at the generator level.
- Metro: Low. Metro currently has two inspectors that monitor facilities.

Feasibility of Implementation

Moderate. Requires action only by Metro.

Contingency Strategy Profile # 4

Strategy and Goals

- Contingency Strategy: Disposal ban on key commercial materials at all mixed solid waste facilities that take waste from the Metro region (cardboard, mixed paper, mixed containers).
- Target Sector: Commercial
- Tons Needed: 97,000 tons

Possible Program Elements

- Program: Metro bans cardboard, mixed paper and mixed containers from landfill disposal.
- Target Generators: Commercial generators.
- Target Materials: Cardboard, mixed paper, and mixed containers (glass, plastic bottles, aluminum cans).
- Adoption Process: Metro amends the Regional Solid Waste Management Plan and adopts an ordinance to ban the landfill disposal of cardboard, mixed paper, mixed containers (glass, plastic bottles, aluminum cans).
- Potential Enforcement Measures: Metro has authority to enforce at solid waste facilities. Warnings and fines may be issued for non-compliance. Enforcement may include:
- Random business inspections by local governments
 - Transfer station load observations by Metro staff
 - Increased tipping fee penalty on haulers

- Probable Tonnage Recovered: Projected recovery includes 88,000 tons based on:
- Cardboard, 19,000 tons
 - Scrap paper, 49,000 tons
 - Containers, 20,000 tons

Projected tonnage assumes 90 percent recovery for cardboard, 85 percent for scrap paper, 70 percent for containers. **Disposal bans on same materials for residents would divert additional 26,000 tons.*

Cost of Implementation

- Generators: Low to moderate. Generators will have to set up source-separated programs. Costs based on garbage collection service and ability to increase recycling.
- Processing Facilities: Undetermined. Costs based on a facility's ability to recover recyclables.
- Haulers: Moderate. Haulers may have to provide increased recycling service to businesses.
- Local Governments: Moderate. May require some action on the part of local governments if enforcement is targeted at the generator level.
- Metro: Low. Metro currently has two inspectors who monitor facilities.

Feasibility of Implementation

Moderate. Metro region has Commercial Technical Assistance Program staff to support enforcement through education at the generator level. It will be important to establish regional standards before the implementation of a disposal ban, so all businesses have access to a basic recycling service level.

Contingency Strategy Profile # 5

Strategy and Goals

- Contingency Strategy: Mandatory business recycling requirements adopted by local jurisdictions.
- Target Sector: Commercial
- Tons Needed: 97,000 tons

Possible Program Elements

- Program: Local jurisdictions adopt ordinances to require commercial generators to source separate materials (requirements may include minimum diversion requirement or recycling of specific materials).
- Target Generators: Commercial generators.
- Target Materials: Cardboard, mixed paper and mixed containers (glass, plastic bottles, aluminum cans).
- Adoption Process: Each jurisdiction in the Metro region adopts a mandatory recycling ordinance.
- Potential Enforcement Measures: Warnings and fines may be issued for non-compliance. Enforcement may include:
- Random business inspections by local governments

Probable Tonnage Recovered: Projected recovery includes 28,000 to 73,000 tons based on:

- 28,000 tons at 56 percent recovery
- 73,000 tons at 60 percent recovery

Cost of Implementation

Generators: Moderate. Generators will have to set up source-separated programs. Costs based on garbage collection service and ability to increase recycling.

Processing Facilities: Undetermined. Based on a facility's ability to recover recyclables.

Haulers: Moderate. Haulers may have to provide increased recycling service to businesses.

Local Governments: Moderate. Local governments may need to hire enforcement staff in each jurisdiction.

Metro: Low. No action required by Metro.

Feasibility of Implementation

Low. Each solid waste jurisdiction in the Metro region must adopt program. Currently, the City of Portland is the only jurisdiction with a mandatory recycling program. Portland requires businesses to source separate recyclable materials from mixed waste and set out for recycling a minimum of 50 percent of their waste.

Contingency Strategy Profile # 6

Strategy and Goals

Contingency Strategy: Improve opportunity model by setting regional recycling service standards.

Target Sector: Commercial

Tons Needed: 97,000 tons

Possible Program Elements

Program: Local jurisdictions adopt commercial collection service standards that are consistent across the Metro region (Multnomah, Clackamas and Washington counties) such as:

- Type and number of recyclables collected.
- Require commingling be offered to generators.
- Require all commercial garbage service, including loose and compacting drop boxes, be coupled with a source separated recycling collection provision.
- Define a basic recycling service for all businesses, which might include all household recyclables, yard trimmings, film plastic and wood pallets.
- Require all garbage service rates in franchised areas and price quotes in non-franchised areas to include the basic recycling service level.
- Require semi-annual reports by haulers on the names and addresses of new customers and of customers for whom they do not provide recycling collection for household recyclables.

Target Generators:	Commercial generators.
Target Materials:	Cardboard, mixed paper, mixed containers (glass, plastic bottles, steel, aluminum cans), yard trimmings and film plastic, wood pallets.
Adoption Process:	Each jurisdiction revises administrative rules or franchises to be consistent across the region.
Potential Enforcement Measures:	Metro takes action against local governments that refuse to adopt the standards.
Probable Tonnage Recovered:	Moderate. Projected recovery includes 28,000 tons based: <ul style="list-style-type: none"> ▪ 16,000 tons of paper at 75 percent recovery rate ▪ 12,000 tons of mixed containers at 50 percent recovery rate

Cost of Implementation

Generators:	Low. Participation by generators is voluntary. Costs will be based on selected garbage service and ability to increase recycling.
Processing Facilities:	Not applicable.
Haulers:	Moderate. Haulers may have to provide increased recycling service to businesses.
Local Governments:	Low. Some local governments may have to adopt new administrative rules.
Metro:	Low. No action required by Metro.

Feasibility of Implementation

Low. It may be challenging to get local governments to come to consensus on regional standards and independently adopt and implement the standards.

Contingency Strategy Profile # 7

Strategy and Goals

Contingency Strategy:	Incentives to haulers for increasing recycling tonnage or number of customers recycling.
Target Sector:	Commercial
Tons Needed:	97,000 tons

Possible Program Elements

Program:	Metro pays a per ton bounty on specified recyclables or local governments reduce franchise fee for haulers that meet minimum recovery rates.
Target Generators:	Commercial generators.
Target Materials:	Cardboard, mixed paper, mixed containers (glass, plastic bottles, steel, aluminum cans).
Adoption Process:	Metro responsible for administration of bounty incentive. Local governments would administer franchise fee reduction.
Potential Enforcement Measures:	Not applicable.

Probable Tonnage Recovered: Moderate to high.

Cost of Implementation

Generators: Low to moderate. Voluntary participation by generators. Costs based on selected garbage service and ability to increase recycling.

Processing Facilities: Not applicable.

Haulers: Low. Haulers will have monetary incentive to increase recycling services.

Local Governments: Low. The cost will be low unless local governments are involved in the reimbursement to haulers.

Metro: High. The cost may be high if Metro administers and funds the bounty.

Feasibility of Implementation

Low. The feasibility is low due to the program's complexity and the infrastructure needed to track recovery.

Contingency Strategy Profile # 8

Strategy and Goals

Contingency Strategy: Raise regional system fee in the region by \$1 per ton resulting, in \$1.2 million revenue—50 percent of revenue dedicated to outreach campaigns and 50 percent dedicated to expanding the Commercial Technical Assistance Program (CTAP) program.

Target Sector: Commercial

Tons Needed: 97,000 tons

Possible Program Elements

Program: Metro raises the regional system fee by \$1 per ton to fund outreach campaigns and expand the CTAP program.

Target Generators: Commercial generators.

Target Materials: Cardboard, mixed paper, mixed containers (glass, plastic bottles, steel, aluminum cans).

Adoption Process: Metro adopts ordinance to amend regional system fee. This rate would be effective no sooner than 90 days after adoption.

Potential Enforcement Measures: Not applicable.

Probable Tonnage Recovered: Moderate.

Cost of Implementation

Generators: Low. There may be a minimal increase in garbage rates.

Processing Facilities: Not applicable.

Haulers: Low. City of Portland haulers may have difficulty passing cost off to generator due to their competitive system.

Local Governments: Low. Revise rates.

Metro: Low. Requires Metro to revise rates.

Feasibility of Implementation

Moderate. Rate increase would have to be adopted into Metro's budget as a new expenditure, approved by the rate review committee and adopted by Metro Council.

Contingency Strategy Profile # 9

Strategy and Goals

Contingency Strategy: Set garbage collection rates higher so there is a greater economic incentive to businesses to adopt lower garbage service levels and increase recycling.

Target Sector: Commercial

Tons Needed: 97,000 tons

Possible Program Elements

Program: Local governments with franchises increase garbage collection rates.

Target Generators: Commercial generators.

Target Materials: Cardboard, mixed paper, mixed containers (glass, plastic bottles, steel, aluminum cans).

Adoption Process: Local governments revise garbage collection rates.

Potential Enforcement Measures: Not applicable.

Probable Tonnage Recovered: Moderate.

Cost of Implementation

Generators: Low to moderate. Costs based on selected garbage service and ability to increase recycling.

Processing Facilities: Not applicable.

Haulers: Low. Haulers will receive additional money as a result of the increased rates.

Local Governments: Low. Local governments will have to administer the new rates.

Metro: Low. Requires Metro to direct local government to increase rates.

Feasibility of Implementation

Low. Businesses may object to higher garbage rates.

Contingency Strategy Profile # 10

Strategy and Goals

Contingency Strategy: Require local governments to an adopt incentive rate for commercial organics collection (700 largest food-generating businesses) in the region.

Target Sector: Organics

Tons Needed: 45,000 tons

Possible Program Elements

Program: Local jurisdictions with franchises adopt a lower-than-cost-of-service rate for organics collection.

Target Generators: Commercial organics generators.

Target Materials: Food waste, non-recyclable paper.

Adoption Process: Local governments perform cost of service study and adopt incentive rate.

Potential Enforcement Measures: Not applicable.

Probable Tonnage Recovered: Moderate. Projected recovery includes 36,000 tons.

Cost of Implementation

Generators:

- Low. Costs will be lower for organics generators.
- High. Costs will be higher for other businesses that will subsidize organics collection.

Processing Facilities: Not applicable.

Haulers: Low.

Local Governments: Moderate to high. Costs based on local governments' cost to establish subsidized rates.

Metro: Low. Requires no action by Metro.

Feasibility of Implementation

Low to moderate. Businesses may object to paying subsidized rates.

Contingency Strategy Profile # 11

Strategy and Goals

Contingency Strategy: Mandatory recovery of food waste from certain sized businesses (700 largest food-generating businesses) in the region.
 Target Sector: Organics
 Tons Needed: 45,000 tons

Possible Program Elements

Program: Local jurisdictions adopt ordinances to require commercial generators to source-separate food waste for recovery.

Target Generators: Commercial organics generators.

Target Materials: Food waste, non-recyclable paper.

Adoption Process: Each jurisdiction in the Metro region adopts a mandatory recycling ordinance.

Potential Enforcement Measures: Warnings and fines may be issued for non-compliance. Enforcement may include:

- Random business inspections by local governments

Probable Tonnage Recovered: Projected recovery includes 36,000 tons.

Cost of Implementation

Generators: Moderate. Generators will have to set up a source-separated program for organics.

Processing Facilities: Not applicable.

Haulers: Moderate. Costs may be higher if haulers supply collection containers.

Local Governments: Moderate to high. Costs based on the level of enforcement and if local governments provide collection containers.

Metro: Moderate. Costs will be moderate if Metro provides collection containers.

Feasibility of Implementation

Low to moderate. Feasibility will be based on the results of the City of Portland's organics program.

Contingency Strategy Profile # 12

Strategy and Goals

Contingency Strategy: Residential organics collection (food waste collected with yard debris).
 Target Sector: Organics
 Tons Needed: 45,000 tons

Possible Program Elements

Program: Local governments require haulers to offer organics/yard debris collection service to households.

Target Generators: Residential generators.

Target Materials: Food waste, non-recyclable paper.

Adoption Process: Each jurisdiction adopts administrative rules or revises franchises to include organics collection service.

Potential Enforcement Measures: Metro takes action against local governments that refuse to adopt service.

Probable Tonnage Recovered: Projected recovery includes 40,000 to 52,000 tons based on:

- 40,000 tons at 50 percent recovery
- 52,000 tons at 65 percent recovery

Cost of Implementation

Generators: Moderate. Rates may go up to cover increased services.

Processing Facilities: Yard debris processors that receive material from the region will see a drastic decrease in their flow of material, because they are not currently able to accept food waste nor are they likely to get the appropriate permits.

Haulers: Low. Cost of service will be covered in the new collection rate.

Local Governments: Low to moderate. Costs will increase if local governments subsidize collection containers.

Metro: Low to moderate. Costs will be based on whether Metro provides containers.

Feasibility of Implementation

Low to moderate. Metro and local governments may recommend that residential organics collection be contingent on the results of the commercial organics collection program.

Appendix C: Proposed Contingency Strategies Enforcement Implementation Overview

RSWMP Proposed Contingency Strategies # 1-5 Enforcement Implementation Overview

As a starting point to better understand the range of enforcement issues that will be associated with the Regional Solid Waste Management Plan (RSWMP) Proposed Contingency Strategies, the following questions should be asked:

What is the violation?	Performance based or specific standards?
Who is the violator?	Multiple violators?
What is the remedy? <i>(How do you compel the violation to be corrected?)</i>	Fines, mandatory technical assistance, specific operational changes, performance based (increase required recovery rate)?
Who is the regulator?	Metro? Local governments?

Contingency Strategy # 1

Strategy and Goals

Contingency Strategy:	Require all dry waste loads from the region to be processed before landfilling- “mandatory MRFing of all dry waste.”
Target Sector:	Building industry and commercial businesses with drop box service
Tons Needed:	35,000 tons (C&D) and 97,000 tons (commercial)
Probable Tonnage Diverted:	Moderate to High (53,000 to 64,000 tons)

Enforcement Implementation Issues

1) *Metro licensed or franchised facilities in the region.*

- A mandatory recovery requirement is already in place for these facilities.

There are eight¹ facilities in the Metro region that conduct general material recovery on dry waste, and five other facilities that conduct more specialized or limited recovery. All of these facilities are licensed or franchised by Metro and are required to perform recovery on dry waste at a minimum rate of 25 percent.

2) *Designated Facilities (landfills outside the region that have Designated Facility Agreements (DFA) with Metro to accept Metro region waste).*

- The mandatory recovery requirement would need to be inserted into each DFA. The requirement would likely state that the landfill must either:
 - a) Conduct material recovery, at a specified rate, on all dry waste from the Metro region at the landfill, or

¹ PLC III is currently in the process of obtaining a Metro license to operate as a MRF.

- b) Accept only dry waste from the region that comes from a facility that conducts material recovery.

Inspection and compliance

For a Designated Facility that elects to conduct material recovery on-site, the following would need to be addressed:

- Record keeping and reporting requirements: Keeping track of incoming dry waste from the Metro region, recovered materials and landfilled materials.
- Required recovery rate: Would there be a required recovery rate even if loads came from C&D sites that source-separate? What will be the required recovery rate?
- Additional inspections will be required. Should Metro inspect all Designated Facilities or just the ones closest to the Metro region that receive the majority of its waste?
- Enforcement: If a Designated Facility were found to be in violation of the new policy, then enforcement action against the DFA would likely result in a warning or a fine. However, Metro can regulate the facility only to the extent that they agree to be regulated, since a DFA is *voluntary*.

There are seven landfills outside the region that are designated facilities of the system to accept dry waste.

- ✓ Two are limited-purpose landfills (dry waste only): 1) Lakeside Landfill, and 2) Hillsboro Landfill.
- ✓ Five are general-purpose landfills (wet & dry waste): 1) Columbia Ridge Landfill, 2) Wasco County Landfill, 3) Coffin Butte Landfill, 4) Roosevelt Landfill, and 5) Finley Buttes Landfill.

Each landfill with a DFA would need to agree with the terms, or risk a revocation of its Metro DFA. In this case, Metro would require any hauler using the landfill to obtain a Non-System License (NSL). Refer to the NSL discussion below.

3) *Non-System Licenses (NSLs) and non-DFA landfills. If landfills outside the region have no DFA with Metro, then the haulers must obtain a Metro Non-System License in order to use the facility.*

- NSLs would stipulate that the hauler can only deliver dry waste to the landfill that has come from a facility that conducted material recovery.

Inspection and compliance issues

- Additional compliance inspections: Metro would need to intercept and question both NSL and non-NSL haulers to ensure compliance. This approach is difficult and resource intensive, as Metro would need to follow haulers to a landfill if they are suspected of hauling waste from the region. In addition, it is difficult to distinguish dry mixed loads from source-separated commingled loads.
- Enforcement: Enforcement action against a hauler would likely result in warnings or a fine.

There are two nearby landfills without a DFA with Metro for dry waste. Currently, two in-region facilities that do conduct material recovery have NSLs to deliver dry waste to one of these landfills (Riverbend Landfill). However, the other landfill (Weyerhouser Landfill) is not cooperative with Metro on flow control.

Contingency Strategy # 2

Strategy and Goals

Contingency Strategy: Require all C&D loads to be processed before landfilling.
Target Sector: Building industry (construction and demolition debris)
Tons Needed: 35,000 tons
Probable Tonnage Diverted: Low to Moderate (38,000 to 41,000 tons)

Enforcement Implementation Issues

Refer to Strategy #1, with the following additional concerns specific to C&D loads:

- Need to establish operationally unambiguous definition of what constitutes a “C&D” load.
 - Would Metro impose a different recovery rate on C&D loads? If so, how would a facility keep track of two required recovery rates from separate waste streams (dry waste and C&D)?
-

Contingency Strategy # 3 and # 4

Strategy and Goals

Contingency Strategy # 3: Disposal ban on C&D materials including wood, cardboard and metal at all MSW facilities that take Metro region waste.
Target Sector: Building industry (C&D)
Tons Needed: 35,000 tons
Probable Tonnage Diverted: Low to Moderate (31,000 to 33,000 tons)

Contingency Strategy # 4: Disposal ban on key commercial materials (cardboard, mixed paper and mixed containers).
Target Sector: Commercial
Tons Needed: 97,000 tons
Probable Tonnage Diverted: High (88,000 tons)

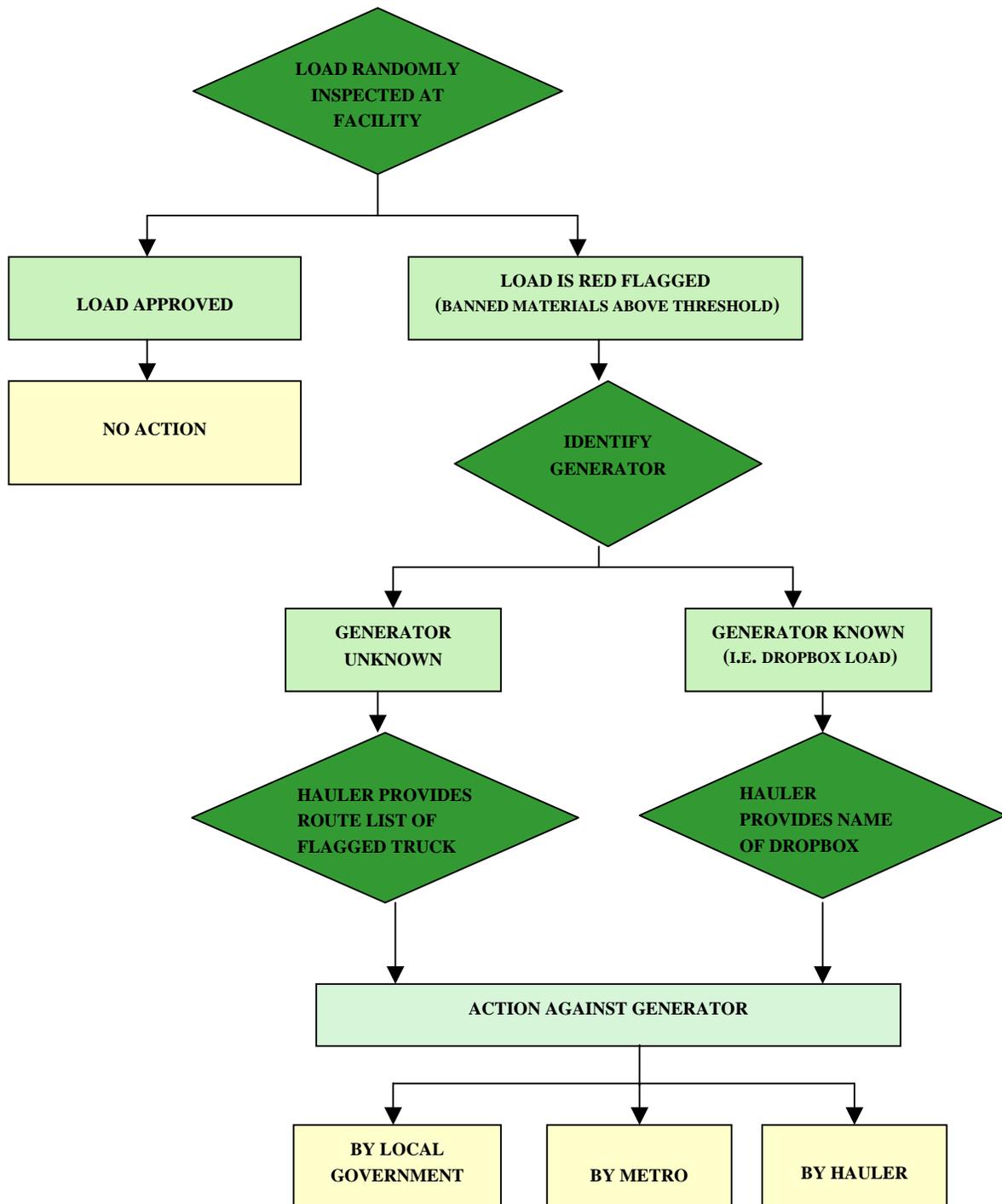
Enforcement Implementation Issues

The following is an overview of potential disposal ban enforcement measures targeting the generator, hauler and facility.

Enforce at generator level: Banned materials set out by a generator for disposal. See Figure 1.

- Generators could be identified by inspecting hauler loads arriving at a facility and locating items in the load that can be tracked back to the generator. In addition, the hauler can be questioned about the origin of the load and to provide a route list.
- There will be a need to have additional inspectors to effectively monitor hauler loads being delivered to multiple facilities.
- Provided that the generator is identified, haulers, local governments, and/or Metro could be responsible for providing technical assistance or issuing citations to the generator.

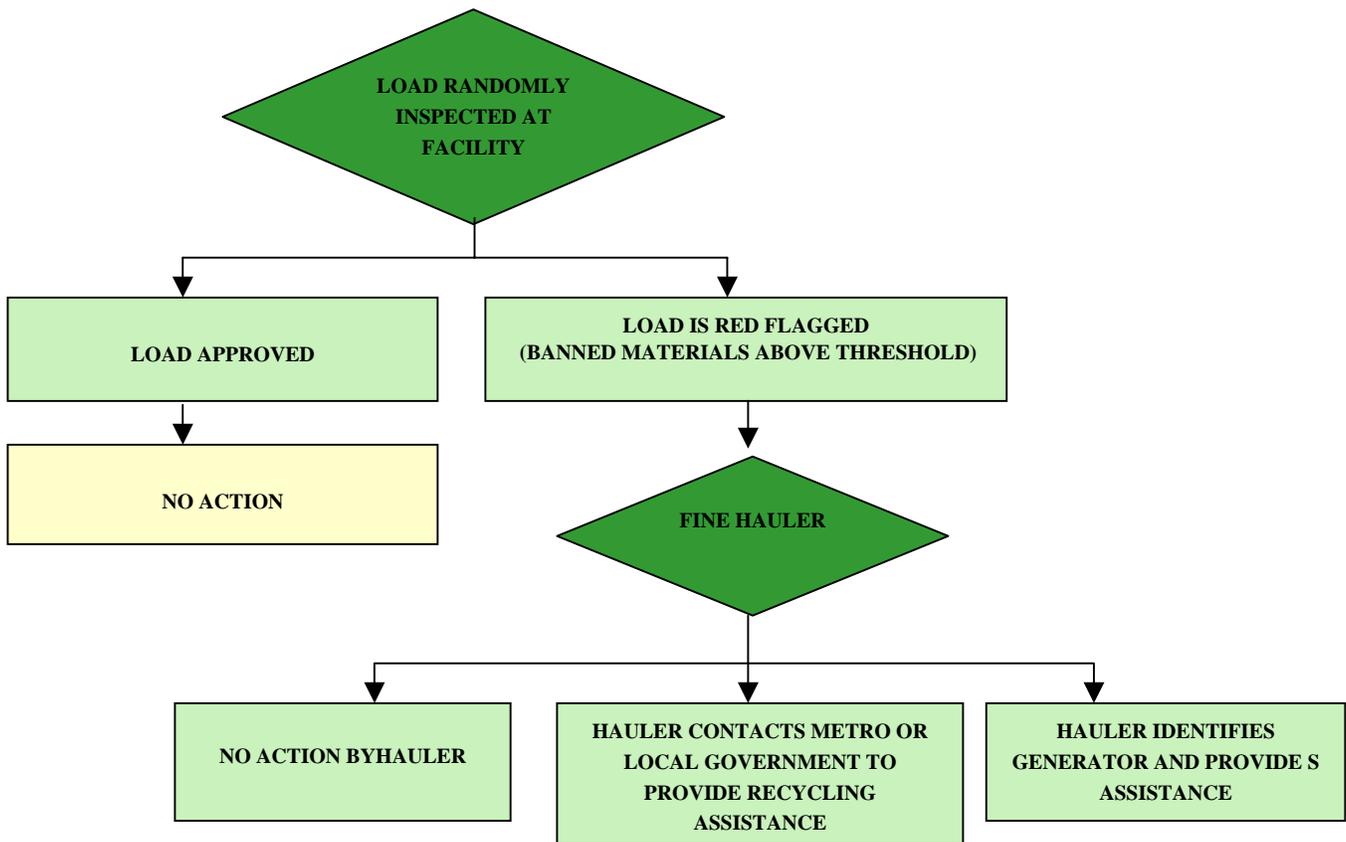
FIGURE 1. Disposal Ban: Potential Enforcement at the Generator Level



Enforce at the hauler level: Banned materials found in a hauler load. See Figure 2.

- Hauler loads, destined for disposal, could be inspected by Metro at the receiving facilities.
- If the load contained banned materials Metro could issue the hauler a warning or a fine.
- The hauler is then responsible for ensuring that its customers are aware of the ban.
- The hauler could request assistance from the local government to provide the generator with information.

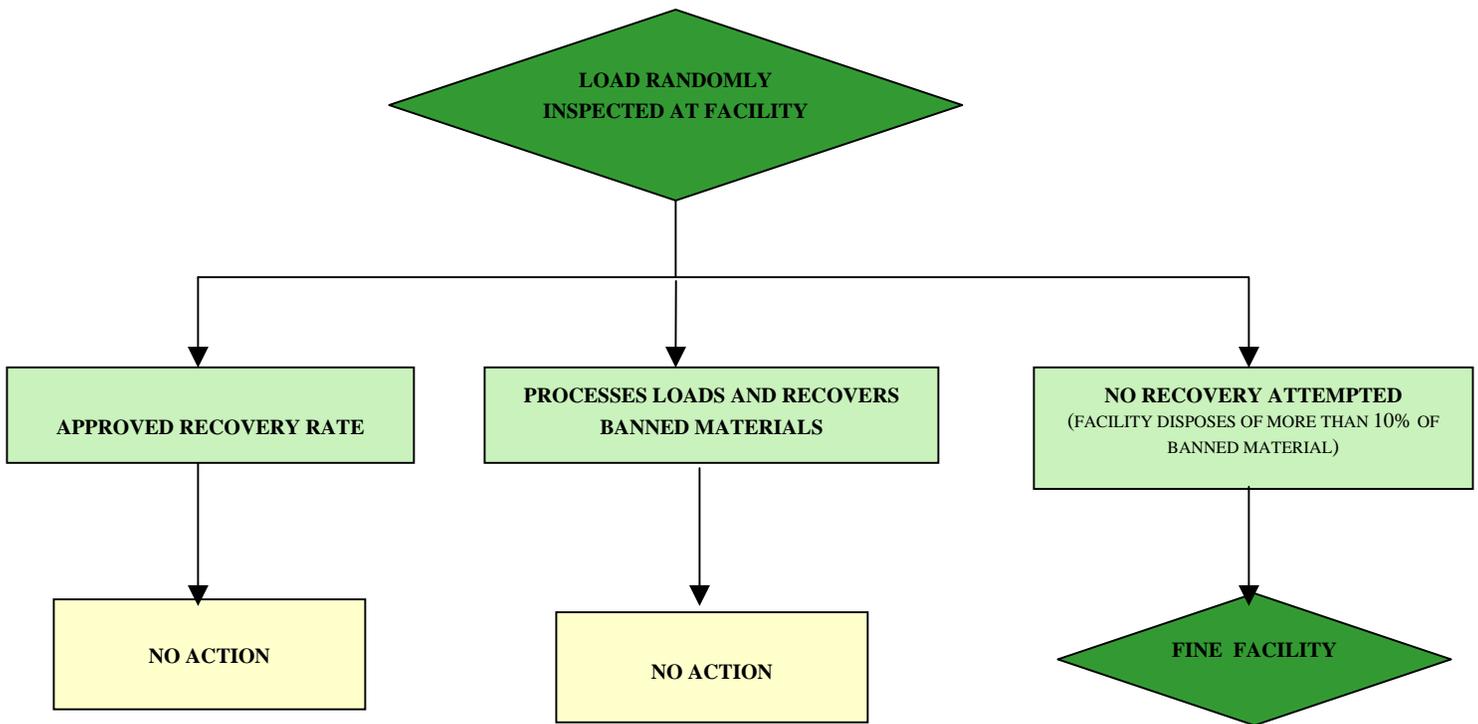
FIGURE 2. Disposal Ban: Potential Enforcement at the Hauler Level



Enforce at the facility level: Banned materials at a facility destined for landfill or at a landfill. See Figure 3.

- Facilities would be required to actively monitor and screen haulers to ensure compliance with the ban.
- If banned materials are delivered, the facility must demonstrate that it conducts effective load checks and removes the banned materials from the load. The facility would decide what action to take against a hauler that delivers banned materials.
- A facility may be issued a warning or a citation if a Metro inspector finds banned materials in the outgoing loads or in processing residual.

FIGURE 3. Disposal Ban: Potential Enforcement at the Facility Level



Contingency Strategy # 5

Strategy and Goals

Contingency Strategy # 5: Mandatory business recycling requirements adopted by local jurisdictions.
Target Sector: Commercial
Tons Needed: 97,000 tons
Probable Tonnage Diverted: Low to High (28,000 to 73,000 tons)

Enforcement Implementation Issues

Generator requirements may include a minimum diversion requirement or recycling of specific materials. Enforcement would be focused at the generator level and be the responsibility of local governments. The program may follow the Portland enforcement framework as illustrated in Figure 4.

FIGURE 4. Mandatory Recycling Requirement: Enforcement Against the Generator

