REGIONAL SOLID WASTE ADVISORY COMMITTEE MEETING
February 17, 1999

The Solid Waste Advisor Committee's new Chair, Councilor Ed Washington introduced himself to the committee. Chair Washington noted that it was his desire to bring the committee together from 8:30 until 10:30 instead of the previous meeting time. Chair Washington urged the committee to call him if they desired to share any thoughts, ideas or concerns with him instead of the group. He advised them to call his Assistant, Pat Emmerson, 797-1537 to make an appointment. Chair Washington stated that if a private conference is desired he would respect that and their privacy.

Introductions of all the committee members was next.

ATTENDEES

Voting Members

Ed Washington, Chair, Metro Councilor
Jeanne Roy, Citizen, City of Portland
Merle Irvine, Willamette Resources
Garry L. Penning, Waste Management
Mike Leichner, Washington County haulers (alternate), Pride Disposal
Dean Kampfer, Multnomah County haulers (alternate), Waste Management
Rick Winterhalter, Clackamas County
Tom Wyatt, Browning Ferris Industries
Ralph Gilbert, East County Recycling
David White, Tri-C/ORRA
Susan Keil, City of Portland

Non-Voting Members

Bruce Warner, REM Director
Rob Guttridge, Clark County (alternate)
Marti Roberts-Pillon, DEQ (alternate)
Doug DeVries, Specialty Transportation Service

GUESTS

Dave Kanner, Washington County
Todd Irvine, WRI
Jerry Rust
Diana Godwin, Regional Disposal Co.
Easton Cross
Dick Jones
Kent Inman, American Compost

(Other guests not identified on Sign-In Sheet)

METRO

Doug Anderson	Steve Kraten	Jan O'Dell
Scott Klag	Aaron Brondyke	Tom Imdieke
Sarah Adams	Connie L. Kinney, Clerk to the Committee	

Approval of Minutes

Ms. Sue Keil requested the minutes be corrected to show that the City of Portland was represented at the November 16th meeting with Mr. Lee Barrett, and with that correction requested the minutes be approved. Mr. Dave White also asked the minutes be corrected to reflect that he was in attendance at the November 16th meeting. Mr. Garry Penning seconded the motion for approval. The committed voted unanimously to approve the minutes.

Director's Update

Mr. Warner distributed REM Director's Updates and briefly discussed each item.

Mr. Penning questioned whether REM's new budget Performance Measures would be instituted at the beginning of the fiscal year. Mr. Warner replied they were a part of the budget package but REM has already begun instituting those measures.

State of the Plan Report

Mr. Anderson said the "State of the Plan" is a periodic review of our Regional Solid Waste Management Plan. He said that today's presentation will focus on waste reduction because that is where some of our greatest challenges lie. Mr. Anderson acknowledged four persons for their contribution to the information in the report: Steve Apotheker, Meg Lynch, Jennifer Erickson, and Scott Klag, all of his staff. He said comments will be gathered throughout the next 2-months. He said the report is available at the conclusion of today's meeting. Mr. Anderson then presented a series of slides covering the following topics:

Mr. Anderson said the Report is a status report on the region's waste reduction efforts and whether it is on track with the Goals and Recommendations of the RSWMP. The plan also satisfies state law on the progress of waste reduction efforts reported to DEQ.

Mr. Anderson presented a flow chart for the periodic review, illustrating SWAC's advisory role. The report covers solid waste recovery disposal facilities, illegal dumping, disaster debris management, system financing, and plan management itself. Mr. Anderson said the Plan addresses the qualitative and quantitative performance of the system and it makes appropriate recommendations.

Chair Washington questioned how hard it was actually going to be to reach 52% in the Year 2000, when we are currently so far behind our estimated waste reduction efforts.

Mr. Guttridge said new programs will have to be instituted to reach 52% by the Year 2000. Mr. Guttridge asked Mr. Anderson if the figures he was using included all tonnage within the region and Mr. Anderson replied that it included all but hazardous, industrial process, and special waste (such as petroleum contaminated soil and auto fluff).

Ms. Roy commented she would like to discuss the disposal fee: She said she looked at recycling rates since 1989 and then the disposal fees. The disposal fees go up until 1992, and then they are flat until 1996. The recycling rate follows the tipping fee very closely until 1992. She said you can see very clearly that increasing disposal fees increased recycling, and decreasing the disposal fees has a different type of impact.

Ms. Keil said the City of Portland has also done some analysis and it is their opinion that there is not a correlation between the recycling rate and the disposal fee but rather a correlation with the state of the economy.

Councilor Washington told committee members he would appreciate their input on how we should proceed in the future so that we can make the 52% recycling projection.

Mr. Gilbert asked Mr. Anderson how many tons the region would have to dispose of in order to reach the 52% mark. Mr. Anderson said that topic would be discussed further on in the presentation.

Ms. Keil said the City's numbers show that commercial recycling has increased dramatically, 49% in just the recycling rate on the commercial side. She said the tough part to count is the waste reduction portion of that. She said it could be 10-15 points higher based on some different modeling due to the waste reduction.

Easton Cross, from the gallery commented he has not heard any discussion on the prices of recycled products declining in the industry.

Mr. Kanner asked what is the rationale for using disposal recovery per capita when measuring success or failure. Mr. Anderson replied that it was only one of several measures, and we don't rely on just one. We try to look at the weight of the evidence that several measure provide us. Mr. Apotheker added that the per-capita rate is helpful when you are trying to measure effectiveness. There was continued discussion on the per capita method used to measure the tonnage.

Mr. Irvine said a bigger indicator is that we started at $75/ton, and it is now $62.50, coupled with what Mr. Cross said about the prices on recycled materials.

Mr. Anderson, in concluding the presentation, said that in answer to Chair Washington's question on how tough it would be to reach the 52% stated we have identified several factors: disposal costs, price of recycling materials, price of disposal collection relative to the price of recycling collection, regional growth, many factors that all present challenges.

We welcome comments from SWAC on the information we have given you.

Mr. Anderson requested that at the next meeting SWAC would be asked to reaffirm Regional Solid Waste Management Plan (RSWMP) goals. He said he would convene a task force to work on proposals and programs to achieve the goals. These would come back to SWAC for comment. They also may require plan revision, a work plan to achieve this and funding issues.

Mr. White commented that during the time the RSWMP was being prepared the subcommittee talked about the incremental cost of getting that last piece of recycling out of the wastestream and how expensive that might be compared to the expense of removing it from the first ton of solid waste. He said it will be expensive to get to 52%, that people are working hard on

educating the public. Mr. White questioned what we as a society are willing to pay to meet the 52% goal. That is an important piece of the puzzle.

Ms. Roy said she was also a member on the subcommittee that Dave was on, and she doesn't think we are anywhere near the point where the cost is too high to get the tonnage we need to reach the 52%. Ms. Roy thanked the staff for doing the State of the Plan report and said they had done an excellent job.

Transfer Station Service Plan

Mr. Anderson introduced Mr. Metzler, who will describe a process for answering questions left over from the code revision last year. Last year, when the SWAC subcommittee discussed the need for transfer stations, we didn't come to full closure on how to deliver the full range of services that are typically provided at regional transfer stations. For example, what is the regional policy toward serving public customers? The current 50,000 ton definition is in place partly to mark the point at which a transfer station is big enough to "step up to the plate" and provide a full range of disposal services. However, Metro also committed last year to investigate this issue and explore other options. Metro has assembled a project team to do just that. Mr. Anderson introduced the four people that will be managing this project: Chuck Geyer, Penny Erickson, Sarah Adams Lien, and Bill Metzler.

Mr. Metzler said the purpose of the project is to determine whether more regional transfer stations are needed in the region. And if the answer to that question is "yes," the project team will recommend the optimum number of stations, what services these transfer stations should provide, how they should be provided, and where they should be located. He said the RSWMP states there will be no new transfer stations in the region. He said it does allow them as an alternative practice, and it lists criteria for looking at that. It says we can look at a case by case basis if there is a need. It asks that we look at a review of the service levels to determine a need. That is pretty much what is driving this project. There is a perception that because of the region's growth, excessive travel time, access, costs, that some areas in the region may be very under-served.

Mr. Metzler described the main areas of the project tasks (which was included in the agenda packet). He said there would be meetings with stakeholders, as well as SWAC work sessions throughout the process.

Mr. Warner said this would be a continuing agenda item for this group as we move through the process and we will seek concurrence from SWAC at each phase of the project to get buyoff from the committee.

Mr. Penning asked what the timeline for the various phases of the project were.

Mr. Metzler said he hoped to have the project completed by the end of the Fiscal Year.

Other Business:

There was no further business. The meeting was adjourned.

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State-of-the-Plan Report
Regional Solid Waste Management Plan
for
Fiscal Years 1996-97 and 1997-98

Part I

Assessment of Waste Reduction Programs

February 1999

Principal Authors:
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Part I

Assessment of Waste Reduction Programs

Table of Contents

Executive Summary

The Regional Solid Waste Management Plan provides the region with direction on how to meet its solid waste needs through 2005. The Plan establishes goals and objectives, including a commitment to a 52% recovery rate by 2000, and serves as a framework for the coordination of regional solid waste practices. In addition, the Plan satisfies state requirements for a regional waste reduction plan.

The State-of-the-Plan Report, the first major evaluation of the Regional Solid Waste Management Plan since it was adopted in January 1996, assesses the region's progress in waste reduction, disposal and recovery facilities, illegal dumping, disaster debris management and system financing. In addition, the Report discusses issues of Plan management, such as annual planning, funding, and monitoring and measurement.

In waste reduction, the region's overall progress has failed to keep pace with growing waste generation rates. Strong economic growth, particularly in the construction and demolition and commercial sectors, fueled the growth in waste generation. Because more waste is being generated at a faster rate, the forecasts for both the generated waste stream and the tonnage needed to meet the region's recovery rate have been revised.

To meet the region's 52% recovery level by 2000, recovery from existing programs and new recommended practices for source-separated recycling must divert 473,500 tons more than the 251,600 tons that are implicit in the RSWMP projections. When we measure the region's progress in the individual sectors, residential recycling is on track, at 107% of the recovery that it needed in 1997. Other sectors fare less well. Source-separated commercial sector recovery, for example, is 56% of where it should be in 1997; on-site recovery of construction and demolition debris is 34%; and commercial organics recovery targets are very distant.

Although **residential** recovery as a whole is ahead of the pace necessary to meet its contribution to recovery goals, efforts can be made to improve its efficiency and effectiveness:

- Metro and local government waste prevention messages will be folded into general recycling outreach campaigns.
- Metro will evaluate ways to provide education and information to more people through composting workshops and other outreach efforts, build an additional one or more composting demonstration sites in the region and continue to distribute home composting bins.
- Metro will evaluate ways of educating residents about buying recycled content products.
- Metro and its local government partners will conduct a regionwide outreach campaign in Fall 1999 to reinforce the basics of recycling. To work toward a

common outreach message, Metro will assist local governments in assessing the additional of new materials to jurisdictions' list of recyclables and standardizing material preparation requirements.

- Metro will review recovery practices from self-haul loads and evaluate the possibility of requiring processing facilities to serve these customers.
- Metro will continue to provide technical assistance to local governments in evaluating new curbside collection technologies. Metro will work with local governments as they move to new collection practices to educate their residents.

Much work remains to be done in the area of **commercial** recovery:

- In Spring 1999, Metro and local governments will assess the level of commercial recycling by examining qualitative and quantitative factors that affect recovery, with the objective of designing better recovery programs.
- Metro outreach efforts will incorporate waste prevention into its general recycling messages for businesses. A major outreach effort is planned for Spring 2000.
- Metro will evaluate its buy recycled guides for businesses for effectiveness and distribution efficiencies.
- Local governments will continue to provide waste evaluations for waste prevention and recycling to businesses.
- Local governments will examine ways to increase business participation in recycling.
- Metro and local governments will analyze waste composition data to identify potential recyclables remaining in the commercial waste stream.

Recovery still has a long way to go in **commercial organics** before it reaches a significant level:

- Metro will conduct research to identify problems and potential solutions and develop a more comprehensive regional approach.
- Metro will step up to a coordinated approach to implementing organics collection and processing, based on research-based needs assessments.
- Metro will continue to provide financial support to non-profit food recovery programs for the hungry and the needy.

On-site **construction and demolition debris** recycling appears to be lagging behind the track to Year 2000 targets, but some recycling may be shifting to post-collection processing and recovery facilities, given the barriers to on-site recovery.

- Metro will analyze waste composition data to identify the amount and source of C&D materials remaining in the waste stream.
- Metro and local governments will design a targeted, comprehensive, regional approach to existing recovery efforts.
- Metro and local governments will target specific subsectors of the C&D industry.
- Metro and local governments will promote the availability of existing processing facilities for C&D materials.
- Metro will analyze the transfer station service plan to determine if additional processing capacity is needed in the western part of the Metro region.

Post-collection recovery of commercial dry wastes and C&D debris is stronger than required by the Plan, with five major private and two public processing facilities. Nevertheless, some opportunities for action exist:

- Metro will analyze waste composition data to determine if marketable materials are present in recoverable quantities at processing facilities.
- Metro will examine factors that affect post-collection recovery, including System Fee Credits, waste composition and source separation programs.
- Metro will analyze the transfer station service plan to determine if the western part of the Metro region needs additional post-collection processing capacity.

Introduction

The Regional Solid Waste Management Plan was developed by the Metro Solid Waste Advisory Committee, adopted by Metro Council and approved by the Oregon Department of Environmental Quality. The Plan provides direction for meeting regional solid waste needs through 2005. In particular, the Plan:

- Establishes regional solid waste goals and objectives, including a commitment to reaching a 52% recovery rate by 2000.
- Serves as a regional framework for the coordination of solid waste practices.
- Satisfies state law requiring implementation of a waste reduction plan for the region.

State-of-the-Plan Reports are "intended to help determine whether the solid waste system is generally on track with respect to the . . . Plan's goals, processing and disposal capacity, environmental regulations . . . [and] to provide a significant amount of the objective feedback for Plan management and steering." *[RSWMP, page 9-2].*

This State-of-the-Plan Report represents the first major assessment of the Plan since it was adopted in January 1996. The recommendations contained herein will begin a dialogue with SWAC and other interested parties about potential Plan amendments.

The following areas are discussed:

- Waste reduction.
- Solid waste disposal and recovery facilities.
- Illegal dumping.
- Disaster debris management.
- System financing.

In addition, the Report discusses issues of Plan management, such as annual planning, funding, and monitoring and measurement.

Waste Reduction

I want to see us reach our goal of over 50% [recovery] by the year 2000.
Rod Monroe, newly elected Presiding Officer, Metro Council
January 7, 1999

The major portion of the Regional Solid Waste Management Plan is devoted to issues of waste recovery, recycling and reduction. The RSWMP replaced Metro's 1988 waste reduction plan and responded to state legislation requiring wastesheds (which typically conform to county boundaries) to develop waste reduction plans that would describe how to reach their waste reduction goals. The wasteshed for the Portland metropolitan region encompasses 24 cities and three counties.

The RSWMP established a waste recovery goal of 52% (and 48% recycling) by 2000 for the Metro region, significantly higher than the state requirement of 40 percent recovery for 2000. In addition, the RSWMP set a recovery goal of 56% (and 53% recycling) in 2005. These goals will be achieved by reducing the amount of waste disposed (through recycling, composting and energy recovery).

The challenge is a formidable one, because the region's solid waste system is a mixture of public and private actors – 24 cities, three counties, Oregon Department of Environmental Quality, Metro, private waste haulers, and public and private owners and operators of waste and recycling facilities. This complex mixture makes regional coordination essential. The RSWMP explicitly recognizes and defines these shared roles and responsibilities for waste reduction.

The RSWMP contains specific waste reduction goals, recommends certain management practices to reach the goals, and establishes a variety of benchmarks to measure the region's progress toward the goals. The recommended practices represent new recovery efforts in various waste generation sectors, which, if implemented as specified and when combined with recovery from programs that existed when the RSWMP was written, would reach the adopted recovery goal for the region.

What's the big picture?
From 1993 to 1995, the annual increase in per capita recovery was more than double the increase in per capita waste generation. As a result, the region's recovery rate increased sharply, from 37% to more than 42%.

However, in the two-year period from 1995 to 1997, waste generation ratcheted up to a higher level and recovery did not keep pace. The jump in waste generation was fueled by

strong economic growth, particularly in the construction/demolition and commercial sectors. Per capita recovery continued to grow, averaging an annual increase of 5.1% between 1995 and 1997, but lagged the 6.3% annual increase in per capita waste generation. As a result, the recovery rate declined by one percentage point in this period, to 41.6% for 1997 (see Table 1).

By 1997, the region's generated waste topped two million tons, which exceeded the RSWMP forecast for 2000. Because waste is being generated at a faster rate than projected by the RSWMP, the forecasts for both the generated waste stream and the tonnage needed to meet the region's recovery rate have been revised. The revised generated waste stream is forecast at 2.3 million tons by Year 2000, an increase of 35% from the 1995 baseline generation.

Table 1
Progress toward Revised RSWMP System Benchmarks

System Benchmarks	Year 1995 Actual	Year 1997 Target	Year 1997 Actual	Year 2000 Target
Recycling Rate (1)	37.8%	40.9%	35.7%	44.0%
Recovery Rate	42.5%	46.7%	41.6%	52.0%
Per Capita (2)				
Generation (t/cap/yr)	1.33	1.46	1.50	1.64
Recovery (t/cap/yr)	0.56	0.68	0.62	0.85
Disposal (t/cap/yr)	0.76	0.78	0.87	0.80
Solid Waste Hierarchy				
Prevention	N.A.	0.5%	0.2%	1.0%
Recycling	30.9%	32.8%	28.9%	35.0%
Composting	6.9%	7.9%	6.8%	9.0%
Energy/Fuel	4.7%	5.8%	5.9%	7.0%
Disposal	57.5%	53.0%	58.4%	48.0%

NOTES
Columns may not add due to rounding.
t/cap/yr = tons per capita per year.
N.A. = Not applicable.
(1) Recycling Rate includes contribution by composting.
(2) The Year 2000 per capita benchmarks have been revised to reflect new waste stream projection.
Source: Metro, Regional Solid Waste Management Plan, Table 9.3, November 1997, Metro, February 1999.

To meet the Year 2000 goal of 52% recovery, the region's recovery from existing programs and from new efforts described by the recommended practices must divert 473,500 tons more than in 1995 (see Table 2). The revised requirement of 473,500 tons is an 88% increase over the 251,600 tons of recovery and waste prevention that was implicit in the original RSWMP projection for Year 2000.

Table 2 – Revised RSWMP Recovery Requirements(1)
(tons)

Generator	RSWMP Exist. Prog.	RSWMP Rec. Prac.	RSWMP Total	Revised Total
Residential (2)	16,234	34,200	50,434	63,700
Commercial (2)	36,951	75,600	112,551	179,550
Commercial Organics	0	41,700	41,700	52,000
Construction & Demo	15,515	31,400	46,915	153,000
Post-collection	0	0	0	25,519
Total Recovery (2)	**68,700**	**182,900**	**251,600**	**473,769**

NOTES.
Exist. Prog. = Existing programs, with additional recovery due to expanded waste stream.
Rec. Prac. = Recommended practices, and resulting new recovery.
(3) Represents the increase in waste prevention and recovery between 1995 and 2000 needed to meet the 2000 solid waste hierarchy benchmarks.
(4) Includes waste prevention.
Source: Metro, February 1999.

Table 3 shows target waste reduction by generator type for 2000 and actual waste reduction achieved through 1997, also by generator type.

Table 3
Progress in Meeting RSWMP Diversion Targets (1)

Practices	Revised 2000	1997 Prorated(2)	1997 Actual	Difference	Percent (Actual to Prorated)
Waste Prevention					
Home Composting (3)	11,700	4,680	3,350	-1,330	72%
Business Waste Reduction	11,550	4,620	N.A.	-4,620	N.A.
Waste Prevention Subtotal	**23,250**	**9,300**	**3,350**	**-5,950**	**36%**
Recovery					
Expanded Residential Curbside	32,000	12,800	20,062	7,262	157%
Expanded Multi-family Collection	20,000	8,000	3,901	-4,099	49%
Source-Sep. Business Recyclables	168,000	67,200	37,358	-29,842	56%
Commercial Organics	52,000	20,800	N.A.	-20,800	N.A.
On-site Construction & Demo.	153,000	61,200	20,904	-40,296	34%
Post-Collection (4)	25,519	10,208	18,137	7,929	178%
Recovery Subtotal	**450,519**	**180,208**	**100,362**	**-79,846**	**56%**
Total, Prevention & Recovery	**473,769**	**189,508**	**103,712**	**-85,796**	**55%**

NOTES
N.A. = Not available.
(1) All tonnages represent increases to the actual baseline tonnages reported in 1995.
(2) Projected 1997 benchmark is prorated to be 40% of Year 2000 benchmark.
(3) Preliminary calculation for diversion from households with home composting bins. Final analysis to be completed in February 1999.
(4) Recovery from mixed waste processing facilities (sometimes called materials recovery facilities) and regional transfer stations, which is mostly construction and demolition materials.
Source: Metro, January 1999.

Progress toward recovery goals for single- and multi-family residential recycling appears to be on track. The combined efforts of recovery programs operating when the RSWMP was adopted and of the recovery practices recommended in the RSWMP are bearing fruit. Recovery in other generation sectors, such as commercial and construction and demolition, however, is not keeping pace. And, although the prospects for recovery of commercial organics have improved, the targets identified in the Plan remain a distant goal.

The RSWMP identifies recommended practices for major generator sectors. The status of the expected contribution of each generator type follows, along with recommendations to boost and enhance recovery from these sectors.

RESIDENTIAL (SINGLE- AND MULTI-FAMILY)

In the residential sector, the region appears on track to recover sufficient recyclable materials through single- and multi-family recycling and home composting to reach the expected contribution to recovery. Analysis of recovery data by Metro staff indicates that residential recovery is at 107% of the point at which it should be to reach the Year 2000 recovery goals. Recovery of recyclables from single-family households is particularly vigorous (157% of where recovery should be in 1997), and less strong from home composting (72%) and multi-family households (49%).

It is quite difficult in practice to discern whether recovery is attributed to programs that were in existence when the RSWMP took effect or to the results of the recommended practices identified in the Plan. As a result, no attempt has been made to report recovery from either source separately.

Waste Prevention

The RSWMP emphasizes the solid waste hierarchy – reduce, reuse, recycle/compost, energy recovery, disposal – because waste prevention practices, such as reducing or reusing waste, have the potential to conserve the largest amount of energy and natural resources over time, which results in lower levels of pollution.

Among the approaches available to affect waste prevention and promote efficient use of resources, the Plan identifies education in its broadest terms – media, education, purchasing – as the most effective for local and regional governments to implement.

Regional media campaigns were developed and implemented in 1996-97 and 1997-98 to build awareness of the concept of preventing waste; those campaigns did not fully meet expectations. As a result, Metro conducted research into waste prevention to develop a common theme and approach to its public education efforts and analyzed public understanding of the concept of waste prevention through focus groups and stakeholder surveys.

The research found that although people practice waste prevention behaviors regularly, they overwhelmingly identified their behaviors with recycling and had great difficulty grasping the distinction between waste prevention and recycling. Future regional outreach efforts will provide information to encourage both waste prevention *and* recycling practices together and not treat them as separate outreach campaigns.

Other Metro-area local governments target their residents and businesses to augment regional waste prevention messages by conducting their own specific waste prevention promotions.

An additional public education effort included adding waste prevention elements to regionwide annual neighborhood cleanups, whereby sponsoring local governments could receive a waste prevention financial "bonus" by offering one or more waste prevention activities at their cleanup events. Although a wide variety of waste prevention activities were identified for possible inclusion in the events, relatively few were undertaken. This element of the neighborhood cleanup events is unlikely to continue.

Metro and other local government educators offer a full slate of recycling and waste prevention programs and curricula for region schools. School children are educated about general waste prevention concepts, including home composting and avoiding hazardous waste by using safer substitutes.

Metro continues to update and publish a series of buy-recycled guides for households and businesses. The guides are distributed at community events, trade and consumer shows (Yard, Garden & Patio show), and through local government outreach and community events. Questions exist about the effectiveness of the guides – "What is their value?", "Are people actually using them to make purchasing decisions?", "Is there a way to use technology to deliver the same information more effectively or more inexpensively?" Metro will evaluate the current methods and materials to answer these questions.

Home Composting

Home composting is an important component of RSWMP waste prevention efforts, because it offers the opportunity to divert organics (yard trimmings and food scraps) from the yard debris or garbage collection system. The home composting recommended practices focus on education (composting workshops and demonstration sites) and on a subsidized composting bin distribution program.

The Metro Council deferred a FY 1998-1999 budget request for a home composting bin sale, pending a satisfactory program evaluation. The six-month evaluation of the home composting program began in Spring 1998; the final report will be issued in March 1999. The preliminary evaluation has been completed and indicates the program is exceeding its performance targets. (The final report will be completed in February 1999.)

As part of the evaluation, three surveys were conducted, of workshop attendees, bin owners and the general population.

Metro conducts about 26 workshops annually, with annual attendance running 200 to 400 people. In a survey conducted for the composting program evaluation, 17% of single-family households, evenly split between composters and non-composters, were interested in composting workshops. Unmet regional demand for workshops is estimated at more than 60,000 households. This demand could be met in part by offering workshops at times other than Saturday mornings. Metro should evaluate the cost-effectiveness of contracting out the composting workshops to dependable and knowledgeable instructors, thereby increasing service, while keeping program costs low. If implemented, contractors should be trained and monitored to ensure a high standard of quality education.

One of the surveys conducted in 1998 found that 56% of composters and 38% of non-composters wanted more information about composting. Metro should evaluate ways other than workshops to deliver the home composting message. In addition, Metro should continue to provide residents promotion and education materials on home composting, grasscycling and yard debris collection.

Four home composting demonstration sites attract a combined 500 to 1,000 visitors annually. (A fifth site, in Washington County, closed when the community college at which it was located needed the space for expansion.) In the survey, about 20% of single-family households expressed interest in visiting a site. Metro should establish one or more composting demonstration sites in Washington County, to meet the RSWMP intent of providing demonstration sites that serve all parts of the Metro region.

The program evaluation shows clearly that the home composting and the bin distribution program is working. About 44% of all Metro single-family households participate in home composting, up from 35% in 1995. The bin distribution program is extremely popular with the public – between 1994 and 1998, about 43,000 home composting bins were distributed, to about 9% of single-family households in the Metro region. (The recommended practice's target for home composting is based on distribution of bins to 15% of Metro single-family households.) Households paid an average of $25 per bin, with Metro subsidizing the actual cost by about $5 per bin in the early years of the program. The subsidy declined to zero in the last round of distributions.

More than 90% of bin owners were still using their bins after four years. Both non-composters (29%) and composters (38%) want bins. Composters who use the "Metro" bin are more likely to compost food scraps than are composters that use composting methods other than bins (75% to 50%).

Using the bins diverts organic materials from the solid waste system; when these materials are processed at home, they do not need to be handled through the yard debris or garbage collection system. A preliminary estimate in the program evaluation indicates that more than 4,000 tons of food scraps and yard debris are diverted annually by households that have received Metro composting bins. The final report for the composting program assessment will include an estimate of the recovery attributed to composters who are not using Metro bins, but who have benefited from regional composting education programs.

The per-ton cost of the Metro home composting program is estimated at $54 per ton, a figure that includes workshop staff, compost site maintenance, publicity, literature and the capital costs of the bins (based on a conservative five-year depreciation lifetime). This contrasts well with a program cost of $47 per ton estimated in the RSWMP. Home composting is among the most cost-effective management programs when compared to $150 to $175 per ton to collection and dispose or process these materials through the solid waste system.

Based on these strong indicators of success, Metro should continue the home composting bin distribution program and evaluate it every three years. Periodic evaluation will verify whether continued unmet demand for bins remains and whether Metro's educational and technical support is meeting the needs of all composting households, including bin owners.

Specifically, funds should be allocated funds for a compost bin distribution event in the 1998-99 fiscal year or ensure sufficient funding in FY1999-2000 so that bin distribution events can be held.

Source-separated Recycling Collection

At the time the RSWMP was adopted, curbside recycling collection was a long-standing practice throughout the Metro region. The recommended practices, therefore, focused on two general areas: improving the performance of existing recycling services (through providing recycling containers for multi-family residences and education and promotion for all residential programs); and adding new materials to collection programs (such as offering weekly yard debris and scrap paper collection for single-family residences and reducing yard debris in drop boxes and self-haul loads).

Weekly curbside collection of recyclables from single-family households in 1997 recovered 20,000 more tons of recyclables than in the baseline year of 1995. This program's recovery is on track to meeting its Year 2000 recovery benchmark. All jurisdictions offer weekly curbside collection (or its equivalent) for yard debris and scrap paper to single-family households.

From the perspective of Metro-area residents, implementation of residential scrap paper collection has been successful. From the perspective of local government, haulers and processors, however, two concerns exist, First, residents need more education about what "scrap paper" encompasses. This issue can be partially addressed in upcoming local government and Metro residential outreach efforts.

Second, both domestic and export markets for residential scrap paper suffer from ongoing weakness. This market instability has led to cries for help from various groups – local government recycling coordinators, paper industry representatives, paper processors and state recycling market development players – who have approached Metro for help in developing a scrap paper market development study to help diversify markets for

residentially generated scrap paper. Metro will conduct a study to investigate alternative markets for residential mixed paper.

Multi-family collection programs recovered 4,000 tons more in 1997 than in the 1995 baseline year. This accounted for about 50% of the increased recovery needed to keep this program on track. However, it is likely that recovery from this sector is understated, because many waste haulers collect from multi-family buildings and commercial establishments on the same route and may be reporting multi-family tonnage as commercial. All jurisdictions except Beaverton provide recycling containers for at least four materials to at least 85% of apartment units. (Beaverton began its own program independent of Washington County in 1997; it has been given an additional year to meet the standard.)

Although recovery from single-family households appears on track, potentially recyclable materials still remain in the waste stream. Preliminary waste composition data from the 1998 DEQ waste composition study indicate that paper and food and beverage containers account for 25% of single-family waste. When final data are available, they should be evaluated to determine whether opportunities exist to add new materials to curbside recycling collection programs and to increase the recovery of materials already collected at curbside.

To evaluate barriers to increased participation, local governments have conducted a study of low-participation neighborhoods. The study's final results should be made available in the first quarter of 1999.

The multi-family waste stream appears even richer in recyclables than single-family waste, with about 30% of discards representing scrap paper and containers. Old corrugated containers, junk mail and scrap metal levels are noticeably higher in this waste stream than in single-family household waste.

In a growing number of local jurisdictions, curbside recycling is moving toward commingled collection, whereby some materials are collected mixed together, such as all food and beverage containers or all paper. One argument in favor of this approach is that increasing the convenience to residents – by eliminating many separation requirements – boosts participation and, hence, recovery.

All jurisdictions promote recycling programs annually and, in most cases, more frequently. Metro provides information about local recycling services through the Recycling Information Center and through regional outreach campaigns. Focus group research conducted by the City of Portland in October 1998 found that residents are confused about (or inconvenienced by) preparation requirements for recyclable materials. They strongly support reducing the preparation requirements for some materials, such as steel cans (i.e., crushing, washing, removing labels) and glass bottles (i.e., sorting into three colors).

To reduce confusion among residents and to increase participation and recovery, Metro and its local government partners anticipate conducting a regionwide outreach campaign

in Fall 1999 that focuses on the awareness of materials collected, preparation requirements and major contaminants. Part of the outreach should provide information that will be accessible to major ethnic groups served by the regional collection programs.

A regional outreach effort will be more effective if all local programs accept the same materials. It is important that local governments review of the materials they collect and their preparation requirements before a campaign begins. Review of material preparation requirements will ensure that they reflect current collection practices and market specifications.

The RSWMP had targeted the reduction in the amount of yard debris in drop boxes and self-haul. Given apparent high levels of yard debris recovery and other program priorities, the effort was deferred. Preliminary data from the DEQ waste composition study support that decision. The percentage of yard debris in self-haul loads has been halved in the last five years. The reduction of yard debris in uncompacted drop boxes, however, has been more modest in this period. Final data on the size of these two waste streams and their growth during the last five years will not be available until the second quarter of 1999.

Preliminary data from the DEQ waste composition study indicate that self-haul loads are extremely rich in recyclables and typically mirror the composition of dry waste that is delivered to processing facilities. About 50% by weight of self-haul loads is composed of old corrugated containers, untreated lumber, new gypsum wallboard, roofing, carpet, yard debris and concrete/rock/brick. Wallboard, roofing, carpet and concrete/rock/brick often appeared in concentrations of 20% or more within a single load, rather than being spread out in small increments among many loads.

The current strategy for recovering recyclables from residential self-haul loads should be reviewed and financial incentives should be considered for recovery at transfer stations that currently serve self-haul customers. Metro should evaluate the merits of requiring processing facilities to service these customers because of the similar composition of the residential self-haul and dry waste streams.

New Curbside Collection Technologies

As elsewhere in the country, local jurisdictions in the region are looking for ways to increase the efficiency and cost-effectiveness of their curbside recycling programs, primarily through new collection technologies. Cost savings from improved collection practices can affect fluctuating market prices for recyclables. The RSWMP recommends that Metro work with local governments to explore the development of such new collection technologies as commingled collection, single-stream collection, co-collection and weight-based systems.

Metro staff has provided technical assistance to three local jurisdictions that are considering a change to commingled collection of recyclables. A pilot project, managed by Metro staff, is currently examining the quality of residential recyclables from different commingled sorting protocols. A final report will be issued in March 1999. Metro staff

will disseminate the results to all regional local jurisdictions that did not participate in the study and assist them, if requested, in evaluating potential commingled sorting options for residential recyclables.

To minimize confusion for residents and waste haulers, Metro will work cooperatively with local governments to implement new commingled sorting requirements that local governments select and to inform residents about the changes. A single sorting approach across the region, although to achieve, is highly attractive. Benefits include the ease of learning for residents and the ability to leverage mass media in a regional outreach effort for residential collection programs.

With regard to alternative collection approaches, such as co-collection and bulky waste collection, Metro will work in cooperation with local governments to obtain the information and data they need to make collection decisions. These data will help determine whether any new collection technologies offer enough gains in collection efficiency and environmental benefits to merit a more extended research program.

COMMERCIAL WASTE PREVENTION AND RECYCLING

The region's recovery of source-separated business recyclables, through existing and new programs, is behind schedule. (Again, recovery from existing programs and from the recommended practices identified in the RSWMP are bundled together, because of the difficulty of separating them.) Data indicate that our progress was 56% of where we should have been in 1997. The commercial sector generates the largest contribution to our disposed waste stream. Unless recovery efforts for business recyclables are boosted, the region will not meet its Year 2000 recovery goals

Waste Prevention

The intent of waste prevention efforts in the commercial sector is to measurably reduce the amount of paper and packaging that businesses use. This objective is to be achieved through education – media, case studies, procurement – and waste evaluations.

No full-fledged regional media campaign has been implemented to date, although Metro staff have undertaken waste prevention education efforts at attorneys and other large-volume users of paper. Local governments have conducted independent outreach, such as advertisements and a recognition program (Business Recycling Awards Group).

To help design an effective media campaign, a business waste reduction study was conducted and found that businesses, like residents, emphasize their desire for a simple approach to waste management. The same study found that although there was some interest on the part of business owners and operators in the concept of waste prevention, the majority of businesses – like the majority of single- and multi-family residents – identify waste prevention behaviors as recycling behaviors. Furthermore, businesses are not willing to engage in recycling or waste prevention unless it contributes to the efficiency of business practices. Outreach efforts in support of commercial waste

prevention should be integrated into a cohesive whole, without attempting to differentiate between waste prevention and recycling.

Since 1995, Metro has developed a targeted generator program and associated materials and outreach for law firms, Realtors, hospitals, hotels, restaurants, grocery wholesale and retail, and construction contractors. Local governments use the materials during waste evaluations and in other outreach efforts.

Metro produces and distributes annual buy recycled guides for businesses. Metro provided buy recycled training workshops for purchasing agents. Targeted generator materials include buy recycled procurement. Local government evaluations provide procurement information and materials. To answer questions about the value and use of the guides in procurement decisions and to identify other potential vehicles for delivering the same information, Metro will evaluate the current methods and materials.

All local governments except Portland provide waste evaluations to businesses within their jurisdictions. Gresham performed 568 waste evaluations, which represented 76% of its targeted businesses. Metro has provided funds to local governments, awarded on a competitive basis, to focus on waste evaluations.

Source-separated Recycling

Because significant amounts of paper remained in the waste stream when the RSWMP was developed, the foundation for source-separated business recycling efforts was increasing the collection of paper by businesses. Non-bottle bill food and beverage containers were also targeted for recovery because it was determined that the additional costs of collection were negligible and the potential to recovery significant tonnage was high.

Recommended practices to achieve RSWMP commercial recovery goals include recycling collection for businesses for paper and non-bottle bill containers (or for other materials generated in large volumes), provision of external recycling collection containers to smaller businesses, waste evaluations for targeted businesses and recognition programs for business recycling efforts.

With the exception of Portland, which requires businesses to recycle, local governments use an "opportunity" model for business recycling collection service. Under the opportunity model local jurisdictions require haulers to offer recycling services to businesses for the collection of principal recyclable materials; it is up to the generators to participate. All jurisdictions require haulers to provide appropriate outdoor containers to all businesses that want to recycle. All local jurisdictions, with assistance from Metro, have developed and implemented the Business Recycling Awards Group program. Local jurisdictions conduct outreach to all businesses annually via direct mail, industry associations, chambers of commerce and/or on-site visits.

Is the opportunity model working? Several recently conducted studies shed some light on the extent of commercial recycling services and business participation in them. A

1998 Washington County survey of 599 businesses with three or more employees found that 98% were recycling at least one item, with old corrugated containers being the most common item. However, only slightly more than half of businesses that generated white and colored ledger paper were actually setting out these items for recycling collection. With food and beverage containers, only half of businesses were setting out steel cans; participation was much higher for plastic bottles (66%); glass containers (70%); and aluminum cans (94%). On average, businesses were separating out five items, with medical offices and restaurants separating fewer than four items.

A business survey by the City of Gresham in 1997 and 1998 found that about one-quarter of its businesses reported recycling four or more materials, one-quarter were recovering two to three materials, one-quarter were doing one material and one-quarter were not recycling.

In 1997-98, Metro conducted a substantial study of commercial generators, which measured recycling and disposal during a year-long effort. The study found a wide range of recycling rates in different businesses. A number of businesses, such as building materials stores, convenience stores and print shops, had recovery rates that exceeded 70%. The high recovery rates were primarily due to the presence of recyclables in high volumes, such as wood, old corrugated containers or ledger paper. Recycling rates of 40% and lower were obtained by business sectors (such as offices, restaurants, hotels and institutions) with more diverse waste streams.

To get more recyclables out of the commercial waste stream, local governments need to increase business participation in recycling. For example, local governments would set a goal for waste haulers to provide recycling collection service for at least two materials to 75% of their customers.

In terms of what's still left in the commercial waste stream that's recoverable, preliminary data from the DEQ waste characterization shows that of recyclables currently collected, recyclable paper, containers and yard trimmings comprise one-third of the landfilled commercial waste.

In Spring 1999, Metro and local governments will assess the level of commercial recycling. In this monitoring and measurement study, researchers will examine qualitative and quantitative factors that affect recovery, such as business size, business sector, materials, commercial recycling policies and strategies (from financial incentives to material disposal bans), collection approaches and processing strategies. Part of the measurement process should determine the extent to which commercial recovery is derived from multi-family generators. The study will be designed with local government representatives and private haulers.

It appears that waste evaluations work and should be continued and expanded. For example, after Gresham performed 568 waste evaluations, about 40% of the contacted businesses either implemented a recycling program or increased the types of materials they collected for recycling. Waste evaluations should be conducted for 75% of targeted

businesses, i.e., ones that have been identified as generating recycling-rich discards. The programs should document the number of businesses that started recycling or added recyclables to an existing collection service.

A major commercial regional outreach effort is planned for Spring 2000, focusing on increasing participation by businesses and reminding them of the full range of recyclable materials that can be recovered for recycling. Part of the message will be to inform businesses that processing facilities are increasingly able to handle commingled materials. This will accommodate businesses that may want to increase the number of materials they set out for recycling collection, but may have limited their recovery efforts due to constraints, such as lack of space.

COMMERCIAL ORGANICS

When we assess our progress toward our Year 2000 recovery, commercially generated organics is clearly the weakest point. Metro staff estimate that, at the most, perhaps 1,000 tons per year of commercial organics are being collected and processed through two pilot projects, sponsored by Metro to evaluate processing technologies. If progress between 1995 and 2000 were linear, we would have recovered nearly 21,000 tons during 1997. However, progress in this sector is more likely to be realized in a series of "jumps" as collection and processing on line.

Because of the large size of the organics waste stream, commercial organics, are essential for meeting our overall recovery goal of 52 percent by 2000. (Preliminary DEQ waste composition data indicate that around 20% of the region's waste stream as disposed is food scraps.) Success will depend on the establishment of generator programs, collection systems and processing capacity.

Source-separated Commercial Food and Non-recyclable Paper

The collection and off-site recovery of source-separated food and non-recyclable paper as recommended in the RSWMP is predicated on a high level of organics in the waste stream and is contingent on a significant qualifier: " . . . if costs do not substantially exceed the current cost to collection and landfill organics . . .."

Although the RSWMP calls for siting and developing processing capacity for regional organic waste, responsibility for this activity lies with feet of the private sector, not the public sector. Few facilities yet exist to process commercial organics, nor have collection systems developed. This could be a strong example of the chicken-and-egg syndrome, where processors are reluctant to site a facility without an operating collection system, and collectors are reluctant to collect food wastes without a facility to which to deliver them.

It has become clear that, to overcome these barriers Metro must help leverage and coordinate the development of collection and processing systems. This will entail a

higher level of involvement than indicated in the RSWMP. A commercial organics collection economic feasibility study was completed in January 1999. Study results indicate that the economic feasibility for organics collection is limited (3% to 10% over garbage collection and disposal) and relies on dense collection routes, local processing options and low processing fees.

Furthermore, as the Metro-area tipping fee continues to decline, recovering commercial organics will become more of a challenge without some kind of government assistance. On the bright side, the economic feasibility study indicates that the cost of an organics collection and processing program, at least for high-volume generators ($80 to $120 per ton), appears to be considerably less than the $385 per ton estimated in the RSWMP.

Metro has spearheaded two commercial food waste collection and processing pilot projects in the region, demonstrating two different collection and processing scenarios and technologies. Phase II pilot studies are in the pre-planning stage. Staff is examining providing organics delivery and processing services at Metro transfer stations.

Two private sector processing facilities are on line, with a third set to open by mid-1999. One facility receives clean vegetative food waste and has reached its three-ton-per-day capacity. A second facility, at the Columbia Ridge Landfill, is permitted by DEQ to accept all food wastes, soiled paper, yard debris and biosolids on a temporary basis. Capacity is estimated at 20,000 tons per year. The facility currently accepts 50 to100 tons per month of organics as part of the Metro organics pilot project. A third facility, located in Washington County, is expected to come on line by mid-year 1999, with a capacity of 30,000 tons per year. The operator has not yet indicated whether this facility will accept all food wastes or if it will accept organics from commercial haulers.

The region's lack of progress toward organics recovery argues for additional research. pilot projects and a coordinated logistical approach, with a goal of identifying problems and potential solutions and developing a more comprehensive regional program. Areas for research and pilot projects include waste characterization, generator issues, material standards, promotion and education, collection/logistics, processing and processing capacity, end-use markets and, of course, costs.

The research will help determine whether collection and processing of organics in the region is economically feasible in light of added collection and infrastructure costs, collection industry consolidation, declining solid waste tip fees and minimal local processing options. If the research and pilot projects find organics collection unfeasible at this time, the Plan should be amended to modify the recommended practice of collection and processing of organics.

In addition, Metro should provide technical and other support to assist local governments with their organics recovery efforts, including the City of Portland in the implementation of its mandatory recovery ordinance affecting organics-generating businesses. (The City's ordinance is planned to go into effect in July 2001.)

To evaluate the feasibility of collection and processing post-consumer food scraps, Metro should expand the current organics pilot. To help improve the economics of food scrap recovery, Metro should develop a regional regulatory framework for organics and establish tip fees at Metro facilities for the receipt of source-separated organics for delivery to approved processors or for on-site processing at Metro facilities.

In addition, Metro, local governments and area haulers should work together to develop organic waste generator education programs and collection routes throughout the region. Pilot collection routes and generator programs would begin in 1999-00.

Organics Waste Prevention (an alternative practice)
The alternative recommended practice for organics focuses on keeping organics out of the solid waste system, by emphasizing waste prevention practices and on-site composting at schools and other large institutions, as appropriate.

Metro has provided start-up funding and continuing support to the Oregon Food Bank's Harvest Share program, which recovers produce from wholesalers that would have been disposed and distributes the produce to the region's hungry. Between November 1996 and September 1998, over two million pounds of produce have been recovered and redistributed.

Metro also provided funding and technical assistance to St. Vincent de Paul's FoodTrain program, which collects prepared foods from hospital cafeterias, caterers, hotels and other institutional kitchens. This food is repackaged into meal-sized portions, frozen and distributed to congregate feeding sites and food box programs for the needy. The program recovered 300,000 pounds in 1997 and plans to increase recovery to 900,000 pounds in 1998.

Metro will continue to support non-profit and private sector food recovery efforts to reduce the amount of edible food entering the waste stream and will investigate and develop new partnerships to expand recovery.

Beginning in 1995, Metro developed a grocery waste reduction program, with waste reduction guidebooks and food donation guides that were distributed by Metro and local governments to area grocers and other food distributors. Local governments also used the guides in waste evaluations. Metro developed a restaurant waste reduction guide, which was published and distributed to local governments for use in waste evaluations and provided directly to restaurants that requested information from the Recycling Information Center.

Metro assisted Washington County Solid Waste and Washington County Sheriff's Office in developing on-site vermiprocessing at the new Washington County Jail. Twelve worm bins were installed in 1998 to handle the jail's food waste stream. Other Oregon corrections facilities have expressed interest in developing similar systems. Metro will continue to research and assist in the development of on-site institutional organics processing capabilities throughout the region.

CONSTRUCTION & DEMOLITION WASTE PREVENTION AND RECYCLING

To meet the Year 2000 target for on-site construction and demolition debris (C&D) recovery, annual recovery tonnages for 1997 needed to increase by 60,000 tons over the 1995 baseline. Estimating progress is difficult, however, because specific information about recovery levels is not available. Based on DEQ recovery survey data and Metro information on processing facilities, we estimate that the growth in on-site recovery was at least 20,000 tons over 1995. Because more processing facilities now accept C&D materials and because actual post-collection recovery (see below) is about 8,000 tons over the projection, many C&D projects may be choosing processing facilities in lieu of on-site recovery.

Source-separated recovery from the building industries focuses on waste prevention, recycling and post-collection recovery through education and promotion, technical assistance, on-site recovery, off-site processing facilities, and salvage programs.

Metro and local governments provide (or require their haulers to provide) a variety of services in support of building industries recovery programs: technical assistance on environmental building; promotion and provision of on-site audits at construction and demolition sites; on-site source separation at construction and demolition; provision of technical and educational materials, including an annual construction site recycling guide and case studies of deconstruction and salvage; demonstration projects showcasing the feasibility of building salvage practices; and provision of grant support to nonprofit construction salvage operations.

In 1998, Metro conducted a Construction and Demolition (C&D) Debris Generator Survey, which examined how industry sectors differ in handling materials on the job site and in sending materials for processing or disposal. In addition, actual diversion levels for several types of projects were determined. A complex set of factors influence the decision to recycle C&D materials, including cost, site limitations and knowledge of and experience with recycling services.

The study found that current diversion at new residential construction sites is relatively high, driven by the high level of new, clean dimensional lumber. Diversion at commercial construction sites is high on large, new projects where company backing, adequate space and well-defined construction stages exist; diversion at remodel and tenant improvement projects poses problems because of space is limited, responsibility is difficult to assign, and C&D materials are easily mixed with other commercial wastes. Diversion at residential remodeling projects is low – subcontractors are usually responsible for their own waste, space is limited and end-of-day cleanup requires wastes to be moved off site quickly, rather than stored for recycling.

Although factors such as cost and site limitations are difficult for public programs to affect, opportunities to increase the level of knowledge about recycling services were

identified. The study encountered significant problems in using available permit data to make estimates of aggregate levels of C&D recycling and disposal. DEQ's current waste sorting study should provide additional information on how much C&D materials are still in the waste stream:

Efforts to increase C&D recovery should start by taking a hard look at what we know about existing recovery and developing a targeted, comprehensive, regional approach based on barriers, opportunities and anticipated recovery levels. Technical and education programs should be targeted to specific subsectors and be focused on getting information into the hands of decisionmakers. Although technical assistance programs can help some sectors of the building industries remove barriers to on-site recycling, the C&D Generator Survey also showed the need to promote the availability of existing facilities that process C&D materials.

In addition, although the amount of C&D materials going to processing facilities continues to grow, the mid and far west side of the Metro region appears to lack processing capacity. The DEQ waste characterization study and the regional transfer station service plan, both of which will be completed in May 1999, should shed some light on this capacity issue.

POST-COLLECTION RECOVERY

To process both dry wastes from businesses and C&D debris from sites where on-site processing is not feasible, the RSWMP recommends regional processing facilities within the following parameters: sufficient processing capacity for the region; reasonable access for all haulers; Metro fees on residuals only; and assistance to processors and end users of recovered materials.

As of mid-year 1998, five major private processing facilities were operating in the region – Willamette Resources, Inc. (in the southern part of the region), Recycle America (east), and Energy Resources, Inc. and Wastech (north-central) and East County Recycling (mid-Multnomah County). Post-collection processing was also occurring at Metro transfer stations and the Pride reload and processing facility in Sherwood. To improve data collection, better understand waste flows and obtain better recovery information, Metro should add automated keypads to the scales at the Metro Central and South transfer stations. The keypads would prompt drivers to answer two or three questions about load characteristics.

Between 1995 and 1997, the amount of material received by the five major processing facilities grew from 87,000 to 137,000 tons per year; meanwhile, recovery from all post-collection processing grew by over 18,000 tons – almost twice the projected increase necessary to make Year 2000 RSWMP targets. Based on conversations with operators, it is likely that processing facilities are receiving loads from construction and demolition sites in increasing numbers.

Preliminary results from the 1998 DEQ waste characterization study show that residuals from processing facilities in the region still contain significant amounts of recyclable materials. Five potentially marketable materials – OCC, untreated wood, carpet, ferrous metals and new gypsum wallboard – make up about 20% of the residual of some processing facilities. Other less valuable, but potentially recoverable materials (roofing, inerts, low-grade paper and paper packaging) make up another 20% of the residual.

Metro should examine the factors that influence post-collection recovery in the region, including Metro's program that provides financial incentives for recovery (System Fee Credits), the results of the DEQ waste composition study, and the effects of upstream source separation programs.

Although access to processing facilities has been enhanced by regulatory reforms, the western portion of the region may be underserved. (Regulatory issues will be discussed in a section of this report to be released later.). The two limited-purpose landfills (Hillsboro and Lakeside), located just outside the Metro boundary in Washington County, continue to receive large amounts of unprocessed materials, although a limited amount of recovery occurs at Lakeside – up to 8% of incoming material.

Solid waste to these landfills (excluding processing residuals and special wastes) rose by about 70,000 tons between 1995 and 1997, from 138,000 to 208,000 tons. (Figures for 1998 show a decline of 37,000 tons from the 1997 peak. This decline may reflect both a cooling local economy and a shifting of some waste deliveries to processing facilities.) Metro should determine whether additional recovery opportunities are needed in the western portion of the region; the regional transfer station services plan, which should be completed by May 1999, should shed light on this question.

Metro continues to implement its fee system in a manner than encourages recovery. Revisions to the Metro Code, adopted in 1998, reaffirmed the policy of applying Metro fees only to residuals from processing facilities, rather than to the tipping fee on waste deliveries. The revision also established Regional System Fee Credits to provide further recovery incentives. In addition, the revised regulatory system simplified and streamlined the entry of new processing facilities into the regional solid waste system. The regulatory burden on operations was also eased, and operational options expanded. (for example, multiple haulers are allowed outright.)

Regional Solid Waste Management Plan
State-of-the-Plan Report

February 1999

Metro

Regional Environmental Management

Waste Reduction, Planning & Outreach Division

What is the State-of-the-Plan Report?

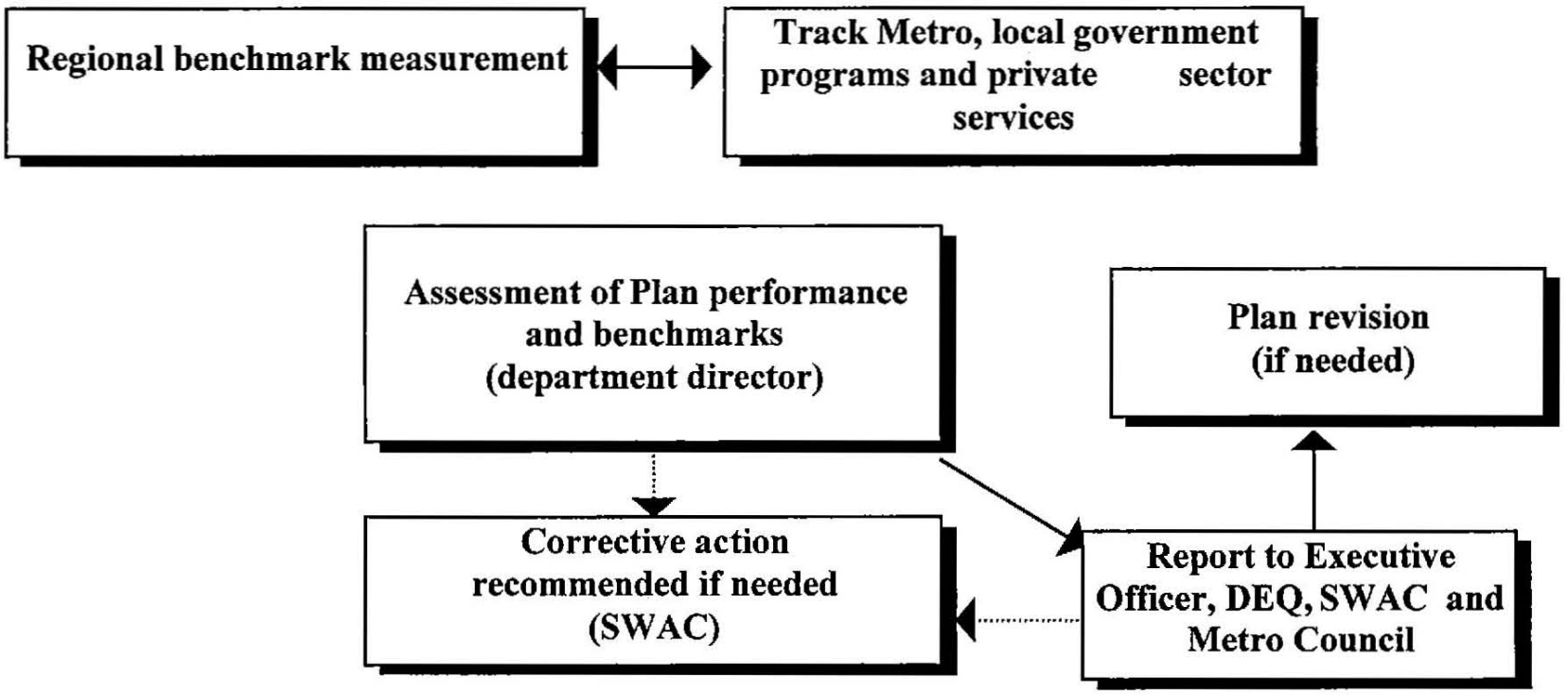
- A status report on the entire Regional Solid Waste Management Plan (RSWMP)

- Satisfies the need for periodic review

What is the State-of-the-Plan Report? (continued)

- Measures whether the solid waste system is on track:
  - RSWMP goals
  - RSWMP recommendations
- Provides information for management and steering
- Satisfies state law requiring reports on wasteshed progress

Periodic Review



(From RSWMP Figure 6.1)

State-of-the-Plan Report Addresses

- Implementation status of programs and recommended practices
- Performance of the solid waste system
- Recommendations

Focus on Waste Reduction

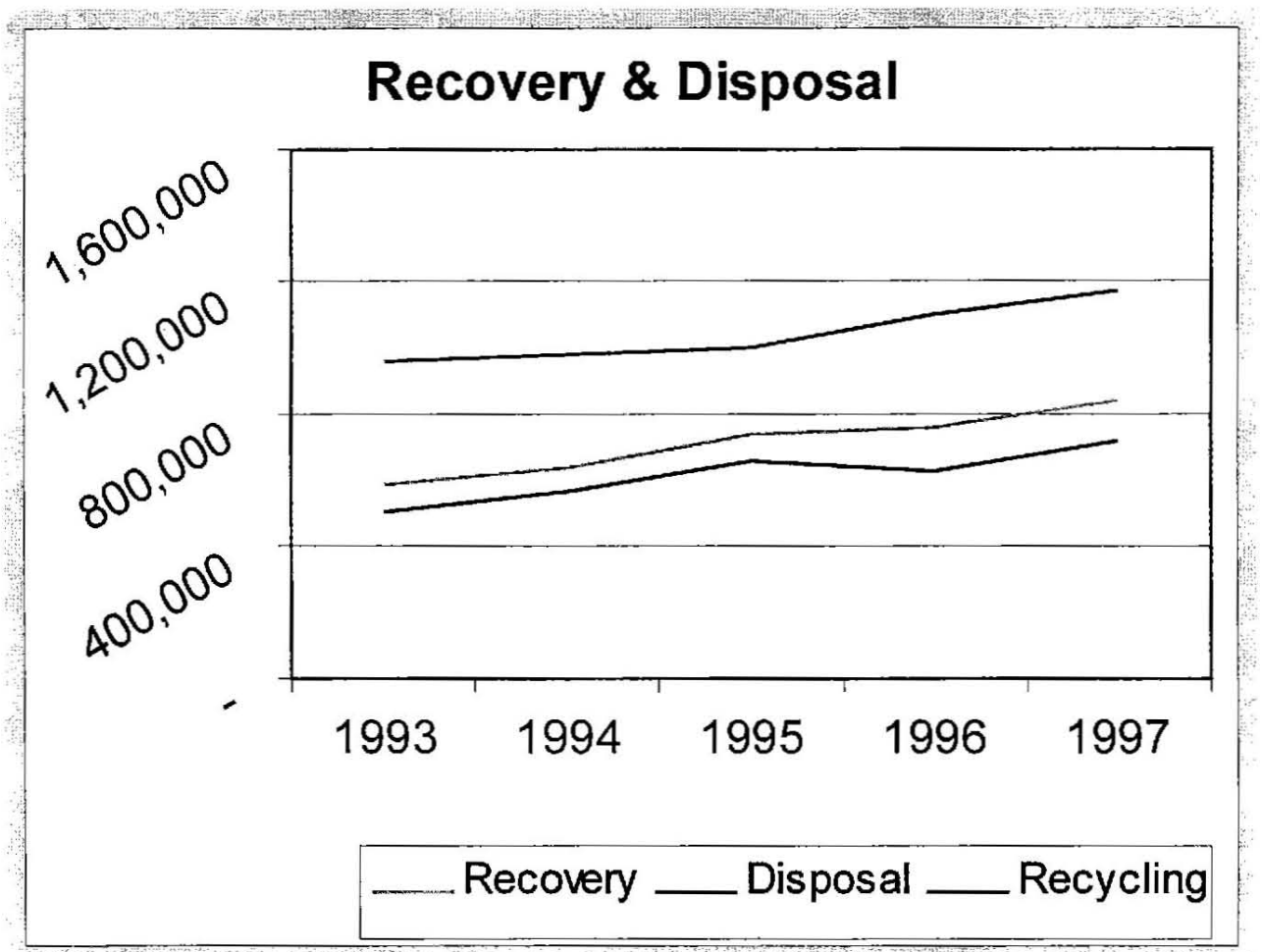
Broad Regional Waste Reduction Objectives: Year 2000

Recycling rate:	48%
Recovery per capita:	0.71 tons per year
Recovery rate:	52%
Disposal per capita:	0.65 tons per year

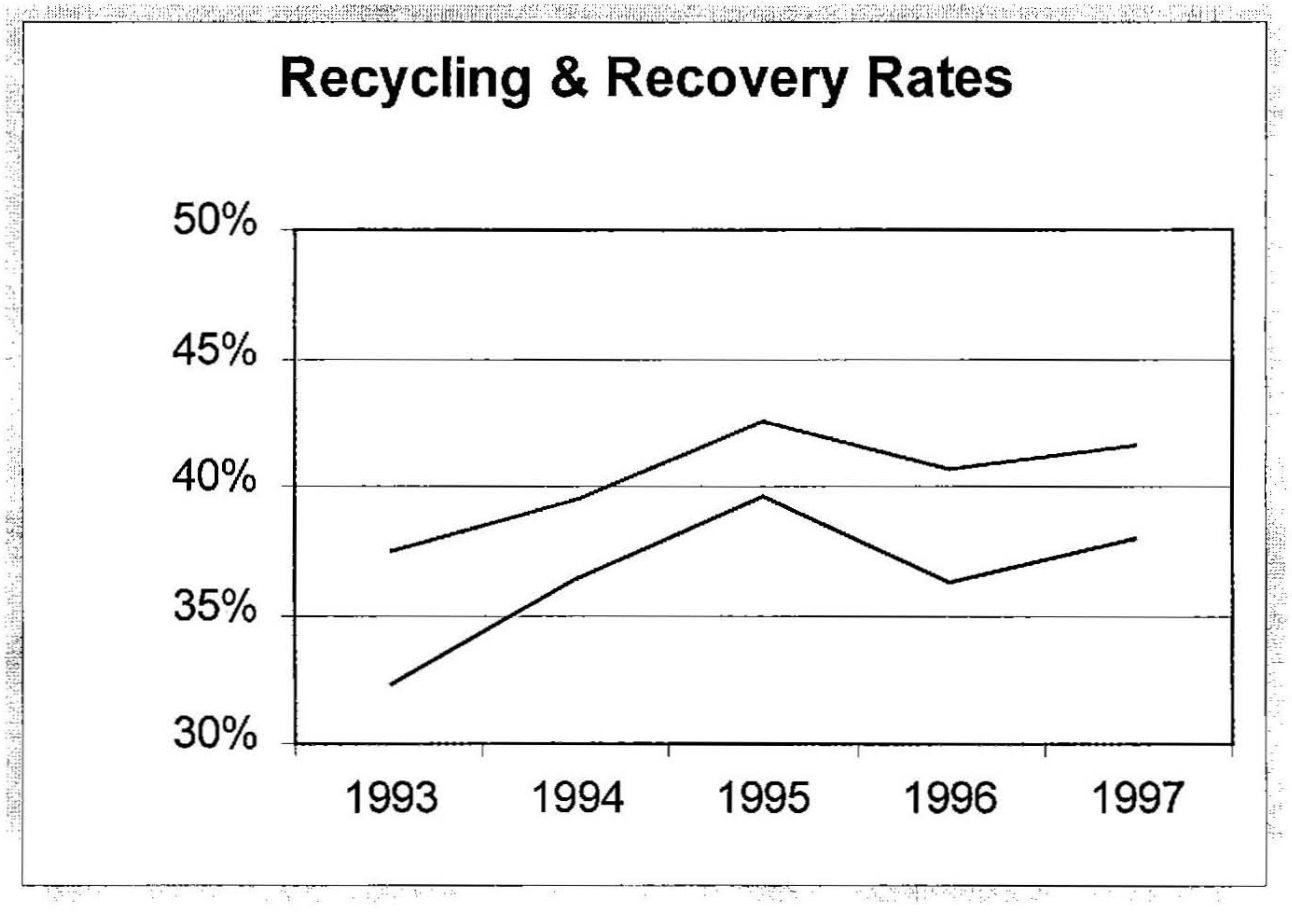
Status Report on Regional Objectives

	Baseline (1995)	Actual 1997	Target (2000)
Recovery Rate	42%	42%	52%
Per Capita:			
Recovery	0.56	0.62	0.71
Disposal	0.76	0.87	0.65

Recycling, Recovery and Disposal since 1993



Rates Since 1993



Main Conclusions

- Recycling and recovery are only slightly outpacing regional growth.
- Disposal is fast outstripping growth.
- Because disposal is growing faster than recovery, the recovery rate has stalled.
- *We are not on track to meet the Year 2000 regional recovery rate target.*

Status Report by Generator

	Year 1997			Revised
	Target	Actual	Difference	Target (2000)
Waste Prevention				
H. Composting	4,680	3,350	(1,330)	11,700
Business	4,620	na	(4,620)	11,550
Total Prevention	**9,300**	**3,350**	**(5,950)**	**23,250**
Recovery				
Residential	12,800	20,062	7,262	32,000
Multi-Family	8,000	3,901	(4,099)	20,000
Commercial	67,200	37,358	(29,842)	168,000
Com'l Organics	20,800	1,000	(19,800)	52,000
C&D	61,200	20,904	(40,296)	153,000
New Post-Coll'n	10,200	18,137	7,929	25,500
Total Recovery	**180,200**	**101,362**	**(78,846)**	**450,500**
Grand Total	**189,500**	**104,712**	**(85,796)**	**473,750**

Conclusions and Recommendations

- Reaching a 52% Recovery Rate will be a challenge
- Increasing the challenge:
  - Regional growth
  - Rapid rise in disposal
  - Falling disposal rates
- Improve the performance of existing programs

Conclusions and Recommendations (continued)

- Generators to target for new recovery:
  - Construction & Demolition
  - Commercial
  - Commercial Organics

Where from Here?

- Draft State-of-the-Plan Report circulated
- Technical Appendix released
- Comments on report received
- Recommendations refined, redrafted
- SWAC reaffirms goals, broad recommendations (March 17?)
- Implementation (Plan revision, work plan, funding)

1999-2000 Budget:
October Tonnage Forecast

Regional Environmental Management

Actual & Forecast Revenue Tonnages

Regional *(top)*

Metro South and Central *(bottom)*